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Techers' Emotional Intelligence and Burnout

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Abstract

The purpose of the study was to examine the predictive power of Turkish teachers' sub dimensions of emotional intelligence, gender, education, professional education, seniority, and age for sub dimensions of teacher burnout. Participants consisted of 536 teachers from Şanlıurfa, Turkey. Participant ages ranged from 20 to 51 years. Participants responded to the Turkish version of the Maslach Burnout Inventory-Educator Survey, and EQ-NED which was developed by Ergin, Işmen, and Özabacı (1999) to measure teachers' emotional intelligence. Stepwise regression analyses were conducted for each sub-dimension of teacher burnout. Results revealed that three sub dimensions of EQ (perception of own feelings POE, understanding others' feeling UOE, regulating emotions RE), teaching branches and years of experience explained 13.9% of the variance in emotional exhaustion. RE, UOE and POE explained 21.7% of the variance in depersonalization. Finally, RE, ages and teachers' branches explained 36.9% of the variance in personal accomplishment. Accordingly, implications and contributions are discussed.

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INTRODUCTION

Teaching is an emotional and stressful profession (Kotaman, 2016a). It requires constant interactions with individuals such as parents, administrators, colleagues, students. Teachers need to be able to understand their own and others' feelings and they should be able to manage emotional situations (Kotaman, 2016b), such requirements increase teachers' emotional load and stress.

Teacher encounter with stressful events which trigger burnout such as misbehaviour of students, hostility of parents and administrators (Akbari & Roudi, 2020; Girgin, 2010, Huberman, 1993). Akbari and Roudi (2020) indicated that teachers idealistic, unrealistic expectations from themselves cause disappointment which in return increased teachers' burnout. All these cause emotional reaction in teachers that cause loss of motivation (Akbari, & Roudi, 2020). In another study conducted in Turkey with 564 teachers have been found teachers' emotions such as love negatively, sadness and fear positively related with teacher burnout (Atmaca, Rızaoğlu, Türkdoğan, & Yaylı, 2020). Therefore, we believe that level of teachers' emotional skills such as perceiving own feelings, understanding others' feelings and regulating emotional situations can be predictive factors for teacher burnout. Emotional load might trigger teacher burnout. Moreover, several studies revealed an association between emotional intelligence and teacher burnout (Brackett, Palomera, Mojsa-Kaja, Reyes, & Salovey, P. 2010; Chan, 2006; Ju, Lan, Li, Feng, & You, 2015; Merida-Lopez, & Extremera, 2017). Since burnout is an important issue for teachers (Skaalvik & Skaalvik 2017), and emotional exhaustion is the key component of burnout (Maslach 1993; Maslach & Jackson 1981), scholars claimed that association between emotional intelligence and burnout would contribute to decreasing teachers' burnout levels (Fiorili, Albanese, Gabola, & Pepe, 2017; Lee, 2019; Rumschlag, 2017). In order to achieve this, we need a detailed investigation of the teacher burnout with variables which may have an impact on it. Therefore, we have investigated the predictive capacity of both EI and its sub dimensions and demographic variables such as teachers' branches, length of professional education, teaching experience, age and gender on burnout on teacher burnout.

Teachers' demographic characteristics such as inexperience in teaching (Huberman, 1993; Fisher, 2011) and teacher branches (Huberman, 1993; Girgin, 2010) appeared as predictive factors for teacher burnout. Girgin (2010) reported that novice teachers experienced significantly higher burnout compared to teachers with 20 year and higher experience. For example, Skaalvik and Skaalvik (2017) compared elementary, middle and high school teachers' dimensions of burnout. They found the indirect effects of teachers' gender and school level on their emotional exhaustion. Their findings revealed higher burnout levels for female teachers and lower grade teachers compared to male teachers and higher-grade teachers. Yorulmaz, and Altınkurt (2017) conducted an extensive meta-analysis where they have examined 118 articles, 169 master theses and 11 doctoral dissertations about teacher burnout which had been published between 2005-2015 in Turkey. They found that subject teachers experienced emotional exhaustion more than elementary (class) teachers had. On the other hand, class teachers experienced depersonalization and (reduced) personal accomplishment more than subject teachers. Their findings also revealed that teachers with a graduate degree had more emotional exhaustion, depersonalization, and reduced personal accomplishment than the teachers with an undergraduate degree. Therefore, we wanted to examine predictive capacity of these variables on teachers' burnout.

While investigating the association between EI and teacher burnout, the current study also examined the impact of teachers' years of education, years of professional education, seniority, teaching branches and school level on teacher burnout in association with EI. Year of education is total amount of formal education that teacher receive in his/her life time. Years of professional education is the amount of formal education teacher receive about teaching profession such as two years vocational college, four years bachelor degree, master of education or master of science and doctoral. Thus, we aimed to provide a detailed picture on the factors which have an impact on teacher burnout and how these factors affect different kinds of teachers. We believe that such a detailed examination will facilitate the intervention efforts which aim to increase teachers' EI to reduce teacher burnout. The findings of the current study would help to develop more suitable EI programmes for target groups by providing detailed information about the specific group.

We have recruited Maslach and Jackson's (1981) model to examine burnout. According to Maslach (1993) emotional exhaustion, depersonalization and personal accomplishment are three components of burnout. Maslach and Jackson (1981) pointed to emotional exhaustion as the key factor in burnout and defined it as "feelings of being emotionally overextended and exhausted by one's work" (p. 101). They also described depersonalization as "an unfeeling and impersonal response towards recipients on one's care or service" (p. 101) and personal accomplishment as "feeling of competence and successful achievement in one's work with people "(p. 101). In this conceptualization, what is meant by personal accomplishment is the exhaustion of personal accomplishment due to burnout (Merida-Lopez & Extremera, 2017).

We have conceptualized emotional intelligence (EI) as teachers' perception about their ability to understand their own emotions, understand others' emotions and regulate emotions in their environments. This conceptualization mostly coincides with the EI conceptualization of Salovey and Mayer (1990). They have claimed that EI consists of perception of own emotions, understanding emotions and regulating emotions (Mayes, Salovey, & Caruso, 2004; Mayes, Caruso, & Salovey, 2000). The only difference is that we conceptualized regulating emotions in the environment rather than personal emotions. Regulating emotions in an environment is the ability to understand emotional interactions and provide appropriate responses. In the current study, we measure teachers' perceptions about their own emotions, capacity for understanding others' emotions and ability to regulate emotional situations. Thus, we examine the impact of each of these components on burnout dimensions.

TEACHERS, BURNOUT AND EI

Training teachers is a compelling process. In most countries, it requires at least a bachelor's degree. Therefore, losing teachers is an important problem which has consequences for society at large, and for schools, teachers, and students in particular. Since teacher burnout is the primary reason for teacher turnover (Aloe, Amo, & Shanahan 2014; Leung, & Lee 2006), it contributes to teacher shortages which decrease the quality of education. Studies have also revealed the negative impact of teacher burnout on teachers' organisational commitment, work engagement, health (Hakanene, Bakker, & Schaufeli, 2006; Kahn, Schneider, Jenkins-Henkelman, & Moyle, 2006), wellbeing, general and mental health (Guglielmi & Tatrow, 1998; Tang, Au, Schwarzer, & Schmitz, 2001). Even if they do not quit teaching, because they are emotionally exhausted, burnout teachers do not want to work and they lose their motivation to teach (Egyed & Short, 2006). This creates a negative vicious cycle because burnout teachers are not motivated to teach most of the time and they cannot experience personal achievement which would motivate them to teach (Leung & Lee 2006). This negative cycle fosters student failure and burnout teachers set negative examples for students (Betoret, 2009; Egyed & Short, 2006).

IMPORTANCE OF THE STUDY

All the above-mentioned studies revealed the importance of reducing teacher burnout. Therefore, scholars are investigating the factors which would achieve this. In many studies, emotional intelligence has emerged as an effective factor in reducing burnout (Brackett, et all., 2010; Chan, 2006; Ju, et all., 2015; Merida-Lopez, & Extremera, 2017). Fiorili, et. al. (2017) conducted a study with primary school teachers and they have found that teachers with low emotional regulation skills are emotionally more exhausted by their jobs, which triggers burnout. In another recent study, Lee (2019) has concluded that physical education teachers who can genuinely express their feelings experience less burnout compared to their colleagues who cannot express their feelings appropriately.

The studies revealed the importance of EI for preventing teacher burnout. Therefore, EI programmes which aim to increase teachers' emotional abilities such as understanding their and others' emotions and regulating them. To increase the effectiveness of these programmes, we must have detailed information about the factors which affect teacher burnout because teachers from different environments, branches and educational backgrounds might experience different emotions and emotional problems which would cause burnout.

Although teacher burnout is the primary reason for teacher turnover for many countries (Aloe, Amo, & Shanahan 2014; Kabadayı, 2015; Leung, & Lee 2006), it would be more difficult for teachers in Turkey to quit their jobs compared to their colleagues from developed countries due to the conditions in Turkey. In Turkey, teacher candidates must receive a bachelor's degree from an educational faculty to become a teacher. The only criteria to study education at university is to pass a university entrance exam. In their extensive survey which they have conducted on 18,266 teacher candidates from 51 faculties of education, Aksu, Demir, Daloğlu, Yıldırım and Kiraz (2010) have found that %29 of teacher candidates had chosen teaching because their university entrance exam score was not good enough for a better department. They have also found that 25% of the prospective teachers reported teaching as an opportunity to find a job easily and 21% stated working conditions as the main reason to choose the teaching profession. Aksu et. al. stated that "job security, flexible hours and holidays as well as the possibility of engaging in secondary employment were other reasons given for choosing teaching as a future career (97)." In addition to these findings, 87% of the candidate teachers reported that they wanted to pursue their future career as a teacher (Aksu, et al., 2010). This may seem contradicting with the other findings of the study. However, it made sense, considering Turkey's somewhat unique conditions.

The unemployment rate for the population between 15 and 24 years of age is 22% in Turkey (http://www.tuik.gov.tr/PreHaberBultenleri.do?id=24630). High employment rate creates a strong drive for becoming a government officer, especially for the people coming from low-middle socio-economic backgrounds because government positions mean job security, financial stability and social benefits such as health insurance and retirement plan. This is also true for teaching. In Turkey, teacher candidates must outperform some of their colleagues in a central government officer entrance exam to be assigned as a state teacher. The gap between the number of positions provided by the government and the demand for those positions is getting larger. Therefore, becoming a state teacher is getting harder each year. Teacher candidates who could not become state teachers can work as contractual teachers in public or private schools. Contractual teachers' salary is around one third of state teachers' salary and most of the private schools do not pay as much as state. Private school teachers lack job security and several other benefits such as a retirement plan. Over years, several teacher candidates committed suicide just because they could not succeed in the central government officer entrance examination. The majority of the candidate teachers come from middle-lower SES families. One third of the fathers and about half of the mothers had no more than the 5-year primary education (Aksu et. al. 2010). Therefore, it can be said that becoming a teacher for most of the Turkish prospective teachers is a socially upward movement, which would provide higher income, social status, and more comfortable life conditions than their parents had.

All these facts revealed that a considerable number of prospective teachers are motivated for teaching professions by extrinsic motivational factors such as salary, job security, holidays, and social security. Several studies have revealed that teachers who are extrinsically motivated had higher burnout and turnover rate than their colleagues whose motivations for teaching are intrinsically determined (Butler & Shibaz, 2008; Kim & Cho, 2014; Malmberg, 2006; Roness, 2011). Therefore, we may expect a considerable percent of Turkish state teachers to leave the profession. However, this is not the case. The Minister of National Education, İsmet Yılmaz, declared that, in 2017, 207 of 850,690 state teachers quit their jobs (www.hurriyet.com.tr/bu-yil-207-ogretmen-istifa-etti-40580635). Again, we must consider Turkey's conditions in order to understand these facts, which appear contradicting to each other. As it was mentioned above, it is hard to become a state teacher. Once you become a state teacher, you have job security for life. Quitting a job as a state teacher means losing income, which, in most cases, provides a teacher with higher economical standards than he/she was raised in. In addition, once teachers quit, they become a burden for their family until they can find a new job. On the other hand, with high unemployment rates and unstable middle east political environment, it is very difficult to find a new job or start a business. Under these conditions, it is very difficult for Turkish teachers to quit their jobs even though teaching dissatisfies them. Because of legal issues, it is impossible to fire a state teacher because of his/her inefficacy in teaching. Therefore, problems related to teachers such as burnout has to be solved in the system. That is why EI may play a critical role in preventing Turkish teachers' burnout. This would provide us with a different perspective on teacher burnout.

In summary, although they are burnout, Turkish teachers may not quit their jobs. Therefore, in Turkey, teacher burnout problem needs in-service solutions. Increasing teachers' EI skills within service trainings can be one way to support them. In order to develop programmes which would support teachers' EI skills, we need a detailed analysis of the association between burnout, EI and other factors which can have an impact on burnout such as teachers' level of education, professional education, branch and gender. The purpose of the study is to examine the impact of all these variables on teacher burnout and provide a fuller picture of the phenomenon. Accordingly, we aimed to answer following questions:

1. Do teachers' emotional intelligence effect teacher burnout?
2. Do early childhood, elementary and middle school teachers differ in teacher emotional intelligence and its' effect on teacher burnout?

METHOD

The study recruited survey model. Teachers provided self-reported responses for questionnaires.

PARTICIPANTS

From kindergarten to high school total of 23114 teachers work in Şanlıurfa (http://www.sanliurfa.gov.tr/sanliurfa-egitimde-yol-haritasini-belirledi). Of the 23114, originally, 624 questionnaires were returned to the investigators. However, among the 624 questionnaires, 88 had missing data. Therefore, they were discarded from the data set. Finally, the data set of the study consisted of 536 questionnaires. Table 1 presents the demographic variables. Of the 536 teachers, 331 were female (61.8%) and 205 were male (38.2%). The ages of the teachers ranged from 21 to 55, with a mean age of 30.67 (SD= 6.90). Participants' years of education, years of professional education and years of experience ranged from 10 to 22, 2 to 13, and 1 to 32, with mean years of 16.06 (SD = 1.23), 4.11 (SD = 1.07) and 6.55 (SD = 6.25), respectively. Of the 536 teachers, 158 (29.48%) were early childhood teachers, 65 (12.13%) were elementary school teachers and 313 (58.4%) were middle and high school teachers.

Table 1. *Demographic Comparison*

	Min	Max	Mean	Std.
Age	21	55	30.67	6.90
Years of Education	10	22	16.06	1.23
Years of Professional Education	2	13	4.11	1.07
Seniority	1	32	6.55	6.25

INSTRUMENTS

We made use of EQ-NED, which was developed by Ergin, Işmen, and Özabacı (1999) to measure teachers' emotional intelligence. The EQ-NED contains 108 items and three subscales. These are: (1)

perception of own emotions (POE), (2) understanding of others' emotions (UOE), and (3) regulating emotions (RE). It is a self-report scale. Each subscale consists of 36 items and is measured on a 4-point Likert scale. In another study, Kotaman (2016) has reported Cronbach alpha coefficients of 0.83, 0.77, 0.61, and 0.73 for total EI for each subscale, respectively. In the current study, Cronbach alpha coefficients for general EI, POE, UOE and RE were 0.91, 0.84, 0.74 and 0.80 respectively. These Cronbach's coefficients are considered to indicate moderate to sound reliability (Isaac and Michael 1995).

TEACHER BURNOUT

Teacher burnout was measured with the Turkish version of the Maslach Burnout Inventory-Educator Survey. The scale was adapted into Turkish by Girgin and Baysal (2005). The questionnaire includes 22 items divided into three subscales: emotional exhaustion (EE; nine items, e.g., "I feel emotionally drained from my work"), personal accomplishment (PA; eight items, e.g., "I have accomplished many worthwhile things in this job) and depersonalization (D; five items, e.g., I feel I treat some students as if they are impersonal objects"). Participants were asked to evaluate each item in terms of the frequency of their feelings, ranging from 0 (Never) to 4 (Always). High scores on emotional exhaustion and depersonalization and low scores on personal accomplishment subscales are indicative of burnout. Participants could receive a minimum score of 0 and a maximum score of 88 on the total scale. The psychometric properties of the Turkish adaptation of the scale have been reported by Girgin and Baysal (2005), who indicated that the Turkish form was a valid and reliable scale. Kotaman (2016) made use of the scale for his study and reported the Cronbach's alpha coefficients of EE, PA and D as 0.93, 0.84, and 0.75, respectively. For the current study, Cronbach's alpha coefficients of EE, PA and D were 0.77, 0.85, and 0.75, respectively. These Cronbach's coefficients are considered indicative of sound reliability for education (Issac & Michael 1995).

DATA COLLECTION

We gathered data in the 2018-2019 academic year with voluntary participation of teachers working at state schools in Şanlıurfa. In Turkey, all teachers are registered to the Ministry of National Education (MONE). In every city, there is a directorate of MONE which has a database containing teachers' information. Prior to the administration of the questionnaires we obtained ethical permission from Şanlıurfa Directorate of National Education (MoNE) to apply the questionnaires. After we obtained ethical permission we requested from the MONE directorate of the city to disseminate an online version of the questionnaires to the teachers. Through their database, it is possible to send a questionnaire to every teacher working in the city. Thus, the questionnaires were disseminated to all the teachers in Şanlıurfa. Beside online application, the investigators also disseminated the questionnaires in central training sessions provided for teacher by MONE. In these trainings, we asked those teachers who had not responded to our questionnaires to participate in the study. Those who accepted to participate in the study responded to the questionnaire privately and handed to the investigators.

FINDINGS

Table 2 presented Skewness and Kurtosis analysis which tested the normality of the scales and their sub dimensions which we used to measure emotional intelligence and teacher burnout. The results revealed that two scales and all their sub dimensions presented a normal distribution. Therefore, we used parametric tests for our further analyses.

Table 2. *Skewness and Kurtosis Analysis of Normality*

	N	Mean	Std. Deviation	Skewness	Kurtosis
POE perception of own emotions	536	2,841	0,397	-0,406	-0,399
UOE understanding of others' emotions	536	2,824	0,326	-0,547	1,497
RE regulating emotions	536	2,883	0,372	-0,329	-0,144
TEI total emotional intelligence	536	2,850	0,323	-0,697	0,236
EE emotional exhaustion	536	1,864	1,068	1,035	4,971
D depersonalization	536	1,249	1,082	0,780	-0,156
PA personal accomplishment	536	2,298	1,116	0,457	-0,039

Four multiple regression analyses were conducted to predict general and three sub-dimensions of teacher burnout (EE, PA and D) based on teachers' gender, age, years of education, years of professional education, years of experience, branches and indicators of emotional intelligence (general, (1) perception of own emotions (POE), (2) understanding of others' emotions (UOE), and (3) regulating emotions (RE). Table 3 presents the first multiple regression conducted for emotional exhaustion (EE).

Table 3 *Stepwise Regression for Emotional Exhaustion (EE)*

	B	SE b	β	Adjusted R^2	R^2 Change	T	F
Constant	3.731	0.431				8.647	
UOE	-0.854	0.222	-0.261*	0.044	0.046	-3.850	
POE	0.727	0.150	0.270*	0.087	0.045	4.850	
Years of Exp.	0.027	0.007	0.160*	0.107	0.022	3.912	
Branches	0.235	0.065	0.196*	0.119	0.013	3.606	
RE	-0.776	0.216	-0.270*	0.139	0.021	-3.589	18.22

*p<0.001

A significant regression equation was found (F (5.530) = 18.22 p<0.000) with an adjusted R^2 0.139. The regression analysis revealed POE, UOE, RE, years of experience and branches as the significant predictors of EE. Other variables such as gender, years of education, years of professional education, age and general EQ were not among the significant predictors of EE. The beta values for UOE, POE, years of experience, branches and RE were -0.261, 0.270, 0.160, 0.196 and -0.270 respectively. These findings revealed that teachers' EE increased with teachers' POE and years of experience. The teachers who scored higher on POE had higher EE scores. EE has a negative relation with UOE and RE. Therefore, we can say that, as teachers' ability to understand others' emotions and regulating emotions increases, their emotional exhaustion decreases. The teachers' EE decreased 0.261 and 0.270 points for each unit of increase in UOE and RE, respectively. On the other hand, the teachers' EE increased 0.270, and 0.160 points for each unit of increase in POE and years of experience. These findings indicated that UOE, POE, years of experience, branches and RE explained 13.9% of the variance in EE. Unique contributions of each independent variable (UOE, POE, years of experience, branches and RE) for the prediction EE were 4.6%, 4,5%, 2.2%, 1.3% and 2.1%, respectively.

Table 4 *Stepwise Regression for Depersonalization (D)*

	B	SE b	β	Adjusted R^2	R^2 Change	T	F
Constant	5,075	0,378				13,413	
RE	-1,009	0,203	-0,347	0.179	0.181	-4,979	
UOE	-0,855	0,212	-0,257	0.198	0.020	-4,034	
POE	0,528	0,139	0,194	0.217	0.021	3,804	50.504

*p<0.001

A significant regression equation was found (F (3.532) = 50.504.22 p<0.000) with an adjusted R^2 0.217. The regression analysis revealed RE, UOE and POE as the significant predictors of D. Other variables were not among the significant predictors of D. These findings revealed that the teachers' D decreased 0.347 and 0.257 points for each unit of increase in RE and UOE, respectively. Contrarily, the teachers' D increased 0.194 points for each unit of increase in POE. These findings indicated that RE, UOE and POE explained 21.7% of the variance in D. Unique contributions of each independent variable (RE, UOE and POE) for the prediction of D were 18.1%, 2.5%, and 2.1%, respectively.

Table 5. *Stepwise Regression for Personal Accomplishment (PA)*

	B	SE b	β	Adjusted R^2	R^2 Change	T	F
Constant	7,737	0,368				21,050	
RE	-1,292	0,131	-0,430	0.301	0.302	-9,856	
Age	-0,035	0,006	-0,220	0.341	0.042	-6,355	
Branches	-0,273	0,055	-0,218	0.369	0.029	-4,983	105.380

*p<0.001

A significant regression equation was found (F (3.532) = 105.380 p<0.000) with an adjusted R^2 0.369. The regression analysis revealed RE, age and branches as the significant predictors of PA. Other variables were not among the significant predictors of PA. These findings revealed that the teachers' PA decreased 1.292 and 0.035 points for each unit of increase in RE and their ages, respectively. These findings indicated that RE, age and branches explained 36.9% of the variance in PA. Unique contributions of each independent variable (RE, age and branches) for the prediction of PA were 30.2%, 4.2%, and 2.9%, respectively.

Since the regression analysis revealed branches as a predictive variable for EE and PA, we have conducted two one-way ANOVAs and post-hoc LSD analysis to find out the differences among branches in terms of these variables.

Table 7. *EE and PA Comparison by Teaching Levels*

		N	Mean	Std. Deviation	F	Sig.	
Emotional Exhaustion	1-Early Childhood	158	1,759	0,818	5,026	0,007	2>1, 2>3
	2-Elementary	65	2,243	1,424			
	3-Middle School	313	1,838	1,080			
	Total	536	1,864	1,068			
Personal Accomplishment	1-Early Childhood	158	3,196	1,114	102,324	0,000	1>2, 1>3
	2-Elementary	65	1,694	1,112			2<1,2<3
	3-Middle School	313	1,969	0,816			
	Total	536	2,298	1,116			

For EE, one-way ANOVA revealed a significant difference among groups [(F (2, 533) = 5.026 p = 0.007]. Post hoc LSD indicated that elementary teachers had significantly higher EE mean score (M = 2.243, SD = 1.424) than early childhood (M = 1.759, SD = 0.818) and branch teachers (M = 1.838, SD = 1.080). Elementary teachers were emotionally more exhausted than early childhood and middle school teachers. There was not a significant difference in terms of EE between early childhood and middle school teachers.

Similarly, one-way ANOVA indicated a significant difference among groups [(F (2, 533) = 102.324 p = 0.000001] for PA. Post hoc LSD showed that early childhood teachers had significantly higher PA mean score (M = 3.196, SD = 1.114) than elementary teachers (M = 1.694, SD = 1.112) and middle school teachers (M = 1.969, SD = 0.816). Middle school teachers' mean score for PA was significantly higher than elementary teachers' mean score of PA.

DISCUSSION

This study investigated the predictive capacity of several variables such as three sub dimensions of emotional intelligence, teaching experience, teachers' years of education, teachers' years of professional education, teachers teaching levels and age on teachers' three dimensions of burnout (EE, PA and D). In some dimensions, our findings on teacher burnout were consistent with former studies and, in some, it was not. For example, Skaallvik and Skaalvik (2017) found higher burnout for female teachers. However, in our findings, gender didn't appear as a significant predictor neither for general burnout nor for three sub dimensions. Our study was consistent with other studies which did not find a connection between gender and burnout (Fiorili, et. al., 2017; Ju, Lan, Li, Feng, & You, 2015). The studies in which gender did not appear as a factor for teacher burnout targeted emotional intelligence. That may be the reason for the difference. Emotional abilities and emotional experiences may be shadowing gender as a factor for teacher burnout.

In our study, elementary teachers' emotional exhaustion was significantly higher and lack of personal accomplishment was significantly lower than their colleagues who taught in early childhood and higher grades. Skaalvik and Skaalvik (2017) have found that teacher burnout increases as the grade level decreases. Yorulmaz and Altınkurt (2017)'s findings were more detailed. They found that branch teachers were emotionally more exhausted than elementary teachers and they experienced less personal accomplishment than elementary teachers. Their findings also revealed that elementary teachers experienced significantly higher levels of depersonalization compared to branch teachers. Our findings were not consistent with Skaalvik and Skaalvik (2017) and Yorulmaz and Altınkurt (2017). Neither of the studies included early childhood teachers. The conditions of the elementary teachers in Şanlıurfa may be the reason for this inconsistency. Şanlıurfa has the second highest illiteracy rate in Turkey and has the highest number of illiterate adults in Turkey (TÜİK, 2020). Also, Şanlıurfa has the highest fertility rate in Turkey in 2017 (TÜİK Haber Bülteni, 2018). These data mean that, in Şanlıurfa, teachers have to deal with illiterate parents and children coming from illiterate environments. In order to understand the condition of the elementary teachers, we must also consider that elementary education is mandatory. However, early childhood education is not, and students can complete middle school with open education. In Turkey, early childhood and elementary school curricula, atmospheres and teacher-student communication are very different. Kindergartens are less formal compared to elementary classes. Academics are not their priority. On the other hand, first grade lectures in elementary schools last 40 minutes. They must sit still in their chairs and their curriculum mostly emphasizes reading, writing and mathematics activities (Kotaman, 2014).

Parents' perception about elementary school and kindergarten are different, too. In kindergartens, parents emphasize social and behavioural development more than academic development (Seyfullahoğulları, 2012). Also, in Turkey, early childhood education is named as "before school education." Ertem and Gökalp (2020) found that parents with lower levels of education put higher emphasize on elementary education compared to parents with higher levels of education. In summary, there is more academic demand and expectations from elementary teachers than early childhood teachers. It is harder to teach children coming from poorly literate environments (Ellsworth & Ames, 1998) and Şanlıurfa has the second lowest literacy rate in Turkey. Therefore, elementary teachers would experience more difficulty in terms of meeting parents' expectations and improving children's academic skills compared to early childhood teachers. Therefore, they would live more conflicts with students and parents than their early childhood and middle school peers. Since, elementary teachers' workload is more than their peers and their conditions are harder, they may experience higher personal accomplishments because they could handle all these difficulties.

Our findings showed that as teachers' UOE and RE abilities increased, their emotional exhaustion decreased. This finding was consistent with several other studies (Chan, 2006; Karakuş, M. 2013; Merida-Lopez, & Extremera, 2017). For example, Karakuş (2013) has found a negative association between emotional appraisal abilities and emotional exhaustion of teachers. In another study, Merida-Lopez, & Extremera, (2017) pointed out paying emotional attention to others' feelings and understanding feelings clearly (emotional clarity) as preventive factors against emotional exhaustion. Understanding others' emotions facilitates regulating one's own emotions because emotions usually occur in interaction with others. If teachers can understand the real intensions and feelings of people whom they interact with such as students, parents, administers and colleagues, they can regulate their own emotions accordingly and, thus, provide appropriate responses (Kotaman, 2016b). Since, administrative and parental demands (Kotaman, 2016a; Richards, Hemphill, & Templin, 2018; Vesely, Saklofske & Leschied, 2013) and disruptive student behaviours (Richards, Hemphill, & Templin, 2018; Skaalvik, & Skaalvik, 2017) are major stressors for teachers, if teachers could manage these relations skilfully, they would experience less emotional exhaustions (Skaalvik, & Skaalvik, 2017). Thus, these two skills would work against teacher burnout. It was somewhat surprising to see a negative relationship between emotional exhaustion and POE. However, when we look closer, POE aims to determine teachers' awareness of their own emotions. Therefore, it might be that teachers who had higher POE would indulge too much with their own feelings, which, in return, could prevent them from understanding others and regulating the emotional environment. Also, indulging in own feelings too much can cause social isolation which would trigger emotional exhaustion (Skaalvik, & Skaalvik, 2017).

The findings also revealed that emotional exhaustion increased with years of experience. This finding contradicts Rumschlag (2017) because he did not find a difference in the experience EE between novice and experienced teachers. Rumschlag (2017) conducted his study in the U.S.A. As we mentioned in the introduction, because of high unemployment rates and benefits of being government teacher in Turkey, even though teachers are emotionally exhausted, they usually do not quit their jobs. If one does an emotionally exhausting job, this exhaustion will pile up in years. Therefore, older teachers were probably significantly more exhausted than younger teachers in our sample.

Just like emotional exhaustion, depersonalization had a negative relationship with UOE and RE and a positive relationship with POE. Depersonalization is conceptualized as an apathy towards one's care or service (Maslach, 1981). UOE and RE required openness to others' feelings and building empathy. These contradict apathy. Therefore, we expected these findings. On the other hand, when a person indulges with his or her own feelings too much, there will be less time and energy to understand others' feelings and demands.

The regression analysis revealed that, as the teachers RE increased, their feeling of lack of personal accomplishment decreased. RE explained 30.2% of the variance for personal accomplishment. This finding was consistent with Brackett, et. al, (2010) in which they found that teachers' feeling of personal accomplishment increased if they thought that they could manage emotional situations. Brackett, et. al. (2010) recruited middle school teachers. Therefore, our finding extended the importance of RE for early childhood and elementary teachers, too. Teachers with high RE can probably manage stressful interactions skillfully without causing them to turn into greater conflicts. Thus, they would receive positive feedbacks with whom they interact (Brackett, et. al. 2010). This would contribute to the development of better relations between teachers and the people whom they interact with such as students, parents, administrators, and colleagues. Managing stressful interactions is a teacher qualification which would facilitate management; thus, teachers can deal with difficult students, which, in return, would provide them with a more effective teaching environment (Hoffman, Hutchinson, & Reiss, 2009). All these components would contribute to personal accomplishment.

Although several studies did not detect age as a significant predictor of teacher burnout (Fiorili et. al., 2017; Ju et. al., 2015), in our study, age appeared as a significant predictor of personal accomplishment. These studies were not conducted in Turkey with Turkish teachers. Karakuş (2013) conducted a study in Turkey with Turkish elementary school teachers and he found that, as teachers' age increased, their burnout syndromes decreased. Our study extended this finding in two ways. First, beside elementary school teachers, our sample included early childhood and middle school teachers as well. Secondly, we provided a more detailed profile about age and teacher burnout by showing that age was a predictor of personal accomplishment. Klein (2017) has pointed out that, due to a decline in dopamine secretion, older people are affected from immediate emotional urges less than younger people. Therefore, older people can evaluate themselves more objectively than younger people because they can take into account the impact of different variables on the phenomenon. Older teachers may have evaluated their personal accomplishments better than younger teachers because they had a wider view on the outside variables which would have negative impacts on their personal accomplishments. Thus, older teachers may have blamed themselves less than their younger colleagues for their failures.

The study pointed out that elementary school teachers in Şanlıurfa experienced higher emotional exhaustion and lower lack of personal accomplishment feelings than their early childhood and middle school colleagues. We think that these findings emphasized the importance of conditions while dealing with teacher burnout because, to the authors' knowledge, such a difference had not appeared in former studies. In creating an emotional intelligence programme for elementary school teachers, the programme would be more effective if the components related to emotional exhaustion such as POE, UOE and RE were targeted. On the other hand, for early childhood teachers, targeting depersonalization would be more beneficial.

As a component of EQ, POE acted differently from UOE and RE. POE contributed to emotional exhaustion and depersonalization. These findings have indicated that, although POE is an essential part of the EQ, it is not enough to understand own feelings for an EQ that would prevent or decrease teacher burnout. EQ programmes should work on how to establish connections among these three components and how to keep them in balance. Chan, (2006) has pointed that, without knowing how to manage emotions, understanding emotions will be useless. Therefore, creating programmes which support the development of teachers' emotional skills would contribute to lowering teacher burnout. Improving emotional skills can be a part of teacher education. Therefore, we can equip teacher candidates for future emotional difficulties (Karakuş, 2013).

The data stemmed from self-reports by volunteer participants. This was the main limitation of the study. It is possible that teachers who were not experiencing a great deal of emotional exhaustion, depersonalization and lack of personal accomplishment would volunteer to respond to a such study.

In Turkey, most of the early childhood teachers are female. Therefore, the male and female division of the sample prevented us to reach a firm conclusion regarding gender and burnout. These were the main limitations of the study. The associational nature of the study prevented us from determining the direction of relationships. In the future, longitudinal studies in which investigators can track the evolution of teacher burnout and emotional intelligence would provide valuable insights on the issue. Teacher development from formal education through actual teaching experiences would provide valuable insights on the issue. We can create programmes to support the development of teachers' emotional intelligence in consideration of their special conditions and conduct experimental studies to see the impact of teachers' emotional intelligence on their students' academic outcomes and teacher performances. Thus, we can reach a fuller picture of the phenomenon.

AUTHOR CONTRIBUTIONS

- Hüseyin Kotaman have made substantial contributions to conception, design, data collection, and writing. or acquisition of data, or analysis and interpretation of data
-Demirali Ergin have analyzed data. and The second author have been involved in drafting the manuscript or revising it critically for important intellectual content
-Fatih Karacabey gathered data.

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Digital Storytelling Experiences of Primary School Students in Distance Education: An Analysis on Students' Perceptions of Collaborative Working

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Abstract

This research aimed to examine primary school students' experiences of preparing and using digital stories and their perceptions of collaborative work in distance education. This qualitative case study consisted of 36 fourth grade primary school students determined by easily accessible case sampling. Data were collected through questionnaire and semi-structured interviews prepared by the researchers. The survey data were subjected to descriptive statistics and content analysis was employed in the analysis of semi-structured interview data. The results indicated that primary school students could work collaboratively, prepare and present homework with the use of digital storytelling (DS) in distance education. In addition, primary school students were able to express themselves, interact with each other and had a high level of participation in the lesson conducted with DS. Based on the results of this research, it is suggested to conduct collaborative studies such as digital storytelling in distance education.

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INTRODUCTION

Sharing the same physical environment, interacting and contact may sometimes lead to different diseases in societies which can be treated or prevented with advances in technology and health. However, there are times when diseases cannot be treated immediately and their spread cannot be prevented, thus considered as pandemics (Altun, Akyıldız, Gülay & Özdemir, 2021). A pandemic is a contagious and epidemic disease that can affect very large regions and cause mass deaths (Aslan, 2020). Posing a danger all over the world, the current pandemic is called Covid-19, which, starting in China and spreading rapidly, influenced the whole world in a short time and changed daily life in many areas. One of the areas affected considerably by the pandemic is education (Telli Yamamoto & Altun, 2020), leaving education administrators in a difficult situation all over the world, making face-to-face education difficult, and compelling the transition to distance education (Özer, 2020). As a result, more than 1.5 billion students in the world were transferred from face-to-face education to distance education (OECD, 2020). In this regard, on March 23, 2020, the Ministry of National Education (MoNE) implemented a distance education application over the Education Informatics Network (EBA) for precautionary purposes (MEB, 2020). Diluted and distance education has been applied from time to time since that date.

Distance education, which has been applied extensively since the beginning of the pandemic, was first employed in the 19th century. It is an education system where teachers and students do not have to be in the same physical environment but come together online by connecting from different places through high-level information and communication technologies (Adıyaman, 2002; Barış, 2015), in which teachers and students interact visually and audibly, and share content and material (Ally, 2008; Simonson, Zvacek & Smaldino, 2019). Namely, distance education is an education system that eliminates the necessity of being in the same place and at the same time by using information and communication technologies and multimedia applications, providing the opportunity to learn from many different geographies (Çelik & Perçin, 2020; Etlioğlu & Tekin, 2020). In this regard, distance education is considered as a support (Al & Madran, 2004) and an alternative to face-to-face education in terms of its implementation (Akbaba, Kaymakcı, Birbudak & Kılcan, 2016). However, geographical distances, disadvantaged individuals, etc. have caused distance education to become widespread (Kan & Fidan, 2016) and extraordinary situations such as the Covid-19 pandemic have led it to turn into a basic education model (Al & Madran, 2004). This education system has synchronous and asynchronous models, the main difference between which lies in the presence of the teacher and the student in the teaching system at the same time. Synchronous distance education has been mainly applied during the Covid-19 pandemic by the Ministry of National Education in Turkey. Synchronous distance education brings together teachers and students in the system by making use of information and communication technologies and provides a learning experience similar to face-to-face education. This education system enables multiple users to organize simultaneous meetings or discussions, prepare question and answer activities, make presentations, organize collaborative or individual events, etc. via the internet (Özdemir, 2020).

All educational applications have both advantages and disadvantages. Distance education also involves some drawbacks such as lack of communication and interaction (Akbaba et al., 2016; Birişçi, 2013; Etlioğlu & Tekin, 2020; Kalelioğlu, Atan & Çetin, 2016; Kan & Fidan, 2016; Karatepe, Küçükgençay & Peker, 2020; Öztaş & Kılıç, 2017; Sümer, 2016), lack of student concentration (Kalelioğlu et al., 2016), low level of participation in the lesson, and decreased communication and sense of community (Akbaba et al., 2016; Etlioğlu & Tekin, 2020), which can be experienced especially in synchronous distance education (Can, 2020). In addition, teachers may have difficulty in transferring the discussion and collaborative working environments in face-to-face education to synchronous distance education, which may lead to some decrease in active participation and involvement of students in the learning process. Another most important disadvantage of distance education carried out during the pandemic process is that teachers, students and parents were caught unprepared for this system due to the emergency transition, which caused these stakeholders of education to have difficulty in adapting (Telli Yamamoto & Altun, 2020). Hence, especially primary school students have had adaptation problems, leaving the physical classroom environment, which is a part of socialization, and finding themselves in an online classroom environment. In this regard, the opportunities of these students to take responsibility for socialization and learning during the pandemic process have been restricted.

Considering the above mentioned disadvantages, in order for distance education to be effective, enriched learning environment, support and peer support (Beaudoin, Kurtz & Eden, 2009; Concannon, Flynn & Campbell, 2005; Soong, Chan, Chua & Loh, 2001; Venkatesh & Davis, 1996) and active, appropriate methods-techniques, examples and games should be provided (Erkut, 2020) and a classroom environment with more interaction should be created (Kalelioğlu et al., 2016; Kan & Fidan, 2016). In this context, active participation of students in distance education should be maximized (Karaman, Özen, Yıldırım & Kaban, 2009) by giving students more responsibility for their learning, providing a suitable learning environment (Öztaş & Kılıç, 2017; Uşun, 2006) and increasing students' cooperation and interaction with each other (Güney, 2011; Kalelioğlu et al., 2016; Özdemir, 2020; Uzun, 2013). In summary, teachers should ensure that students can plan and direct the learning process, and perform group work and interact with their peers in particular, considering that interaction increases the success and motivation of students in distance education (Cheng & Chau, 2016).

A student and life-centered education philosophy was adopted in the 2018 Social Studies Curriculum by the Ministry of National Education. On the other hand, it was revealed in many international studies that the history topics in this course are teacher-centered, do not reflect the latest developments in educational philosophy and learning theories, and, therefore, the course is perceived as a boring and rote-based course by students. In addition, teachers thought that students' expectation of the teacher-centered teaching of the lesson negatively affected the teaching of the social studies lesson (Özcan, 2019). In this respect, in order for students to learn better and permanently and to develop a positive attitude towards this lesson, new methods and techniques should be used as stated in the current social studies curriculum; “Current and controversial issues related to achievements may be applied in the class by using different discussion techniques and associating them with problem solving, critical thinking, evidence use, decision making and research skills." In addition, literary techniques such as short stories can be used in this curriculum as regards the statement; “The Social Studies course should be supported with literary products by making use of genres such as legend, epic, fairy tale, proverb, folk tale, folk song and poetry. Students should be encouraged to read literary products such as novels, historical novels, stories, memoirs, travel writings and anecdotes that will help them love the subjects. In addition, the achievements deemed appropriate should be supported with traditional or modern art products such as painting, music, miniatures, engravings, calligraphy, sculpture, architecture, theatre, and cinema.” (MEB, 2018, p. 10). Storytelling has been one of the main ways of sharing information from past to present (Dola & Aydın, 2020), which has taken its place in the digital environment with the current technological developments (Kaya-Erdem & Baydaş Sayılgan, 2011). Thus, stories have started to be created in digital environments, changing the shape of the stories with the bidirectional structure of this environment and replaced by interactive stories (Kırık & Yazıcı, 2017).

There are a number of definitions for digital storytelling. Robin and Fromm (2006) define digital storytelling as a few-minute stories that are used to teach historical events and personal stories by combining elements such as graphics, text, music, voiceover, video, etc. According to Chung (2006), it is the presentation of digital elements such as visual, text, audio and video, etc. as multimedia in the computer environment. Ohler (2013) defines digital storytelling as the use of a personal digital technology with an appropriate story by combining multiple media. Based on these definitions, it is understood that digital storytelling consists of multimedia elements such as text, music, picture and video, which is based on the fact that computer users choose their own topics, do some research, write screenplays, develop an interesting story, and thus become creative storytellers or producers by making use of various multimedia (Robin, 2008). The changes in students' expectations and needs prompted this technique to become an effective tool for teachers and students in learning environments (Robin & Fromm, 2006). In addition to being an important tool for teaching basic subjects such as language skills and history, digital storytelling also helps develop visual skills, collaboration, and technology use skills (McLellan, 2006). Digital storytelling enables the creation of student-centered and technologically rich, interactive learning environments as an innovative approach to learning that integrates human creativity and technology (Smeda, Dakich & Sharda 2010).

The relevant literature reveals that digital storytelling increases students' permanent learning and motivation (Bedir-Erişti, 2016; Bedir-Erişti, 2017; Gözen & Cırık, 2017; Kocaman-Karoğlu, 2016; Seat & Kocakaya, 2015) and the academic self-efficacy of students when applied collaboratively (Baki, 2015; Dola, 2020). Besides, Baki (2015) determined that digital storytelling increases students' academic success, self-efficacy, and improves their coordination and respect for different opinions. Similarly, Gömleksiz and Pullu (2018) reported that digital storytelling increases students' academic success, class participation, motivation, and improves their attitude and permanent learning. Considering the results of these studies on digital storytelling and the limitations of the studies at primary school level, it is important to conduct research at this level and to reveal the results. In addition, considering the abovementioned educational contributions, the digital storytelling technique can enrich the educational process and provide a fun and interactive learning environment, especially, for primary school students. This research aims to contribute to the literature and education stakeholders within these aspects.

The aim of this study is to examine primary school students' experiences of preparing and using digital stories in distance education and their perceptions of collaborative work. The current study seeks to answer the following research questions:

1. What are primary school students' perceptions of collaborative work on digital storytelling experience in distance education?
2. What are primary school students' self-study perceptions regarding digital storytelling experience in distance education?
3. How do primary school students evaluate group work performance in digital storytelling experience?
4. What are primary school students' views on digital storytelling experience in distance education?
5. What are the views of the primary school teacher on the experience of digital storytelling in distance education?

METHOD

RESEARCH DESIGN

This case study employed a qualitative research approach to deeply determine and examine the experiences and study perceptions of fourth grade primary school students in preparing and using digital stories in distance education (Ekiz, 2015). It was ensured that the research data were obtained as stated by the participants and analyzed in depth (Creswell, 2016a). Thus, the effect of using digital storytelling in distance education of primary school students on their collaborative work was examined in detail with a holistic approach (Yıldırım & Şimşek, 2011).

SAMPLE

The study group was determined by the purposeful sampling method in order to describe and understand the researched topic in depth. (Ekiz, 2015). Fourth grade students were selected in accordance with the purpose of the research, the course and the subject in which the applications will be carried out. A volunteer primary school teacher to teach with digital storytelling applications and volunteer students to participate in the research were included in the study. Therefore, easily accessible case sampling was preferred and students who had these qualifications and could be reached more easily were preferred as the study group (Ekiz, 2015). The use of this widely preferred qualitative research method brought speed and practicality to the research (Yıldırım & Şimşek, 2011). In this context, the study group of the research consisted of 36 (20 boys, 16 girls) fourth grade primary school students affiliated to the Trabzon Provincial Directorate of National Education. In direct quotations from the interviews, students were coded as S1, S2, S3, …, S36 in accordance with confidentiality and ethical rules.

DATA COLLECTION TOOLS

The data of the study were collected through the Collaborative and Individual Work Evaluation Questionnaire, Interview Form for the Evaluation of Group Work, and Interview Form for the Evaluation of Digital Storytelling Experience, all of which were developed by the researchers. Multiple data collection tools were used to increase reliability by making use of the triangulation principle, (Ekiz, 2015) and thus providing data diversity (Yıldırım & Şimşek, 2011). The Collaborative and Individual Work Evaluation Questionnaire was used to determine the study group's perceptions of collaborative and individual study using digital storytelling in the distance education process (Büyüköztürk, Çakmak, Akgün, Karadeniz & Demirel, 2016). The literature on digital storytelling and collaborative work was scanned in detail to form the questionnaire and, as a result, draft articles were created. Two field experts, a primary school and a computer and instructional technology educator, evaluated the questionnaire for the validity and reliability, and items related to individual work were added to the questionnaire in line with the opinions of these experts. The questionnaire included a total of eight items, four for collaborative and four for individual studies, in the triple likert type of "no, partially, yes".

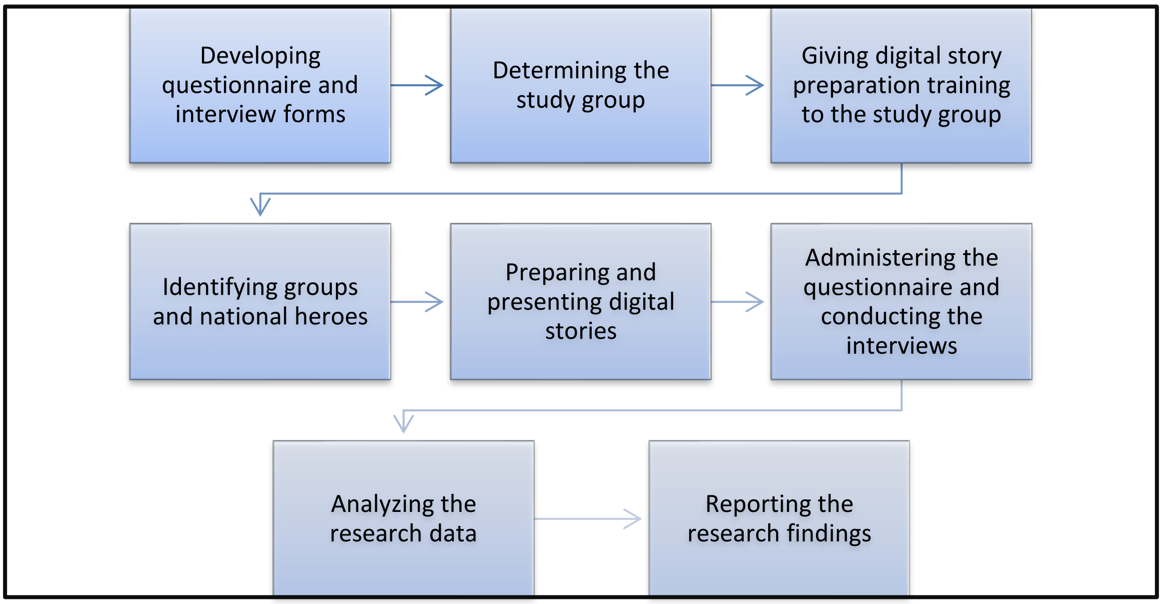
The Interview Form for the Evaluation of Group Work, which was designed as semi-structured so that students could be free (Ekiz, 2015), express themselves comfortably, give in-depth information (Büyüköztürk et al., 2016), was used to evaluate the group work performance of the students in the digital story preparation process. While creating the form, first of all, the interview questions in the related studies were examined and draft questions were formed. The form was submitted to the opinion of two field experts, a primary school and a computer and instructional technology educator, within the scope of validity and reliability. Based on their views, one question about what can be done to make the groups better and, based on the experiences of the students in the process, questions about the problems and feelings experienced in the groups were added before the final form was formed. The form included nine open-ended items aiming to determine the positive and negative evaluations of the students regarding the digital storytelling experiences and group work. A semi-structured interview was conducted with the primary school teacher to evaluate the digital storytelling experiences of the students. This interview technique was used to rearrange the items according to the answers of the participants and the progress of the interview (Ekiz, 2015). The questions for the interview were formed after the relevant literature was examined, and draft questions were prepared. Then, the form was presented to the opinion of two field experts, a primary school and a computer and instructional technology educator, in order to ensure its validity and reliability. In line with their views, a question was added about the contribution of the digital storytelling application to the teaching of the teacher. In addition, in line with the observations in the process, a question about the reason which the teacher connects the effectiveness of this application to was added to the form before giving its final form. This interview form included six items on the effects of digital storytelling on the learning process.

DATA COLLECTION AND ANALYSIS

In this research, fourth grade primary school students were requested to prepare and use digital stories in distance education on the topic of "The importance of the National Struggle based on the lives of the Heroes of the National Struggle" in the Social Studies course. First of all, the primary school teacher and students were informed about the application in two course hours of online training on the use of the digital story preparation platform and program. The students were informed about the group study and the homework process by the course instructor before the application. Second, the 11 national heroes to be introduced with the digital storytelling method were determined and tasks were distributed to groups of three or four students. The student groups were given two weeks to prepare their digital stories and allowed to meet and collaborate online with their parents. This period was kept as long as possible within the scope of the subject to ensure the reliability of the research (Creswell, 2016a; Ekiz, 2015). At the end of this period, the students presented their digital stories and were surveyed online, and semi-structured interviews were conducted with them. In addition, an interview wase held with the primary school teacher to evaluate his experiences. The interview, which was recorded within the scope of the reliability of the research, was submitted to the approval of the primary school teacher after transcription (Creswell, 2016a; Ekiz, 2015).

The data from the Collaborative and Individual Work Evaluation Questionnaire were subjected to descriptive statistics which allows summarizing the data obtained from the participants with values such as mean, frequency, etc. (Christensen, Johnson & Turner, 2015a; Creswell, 2016b). Accordingly, students' perceptions of collaborative and individual work were expressed as frequencies and presented with figures. The data from the online semi-structured interviews with the students and the primary school teacher were subjected to content analysis so that the data could be analyzed in depth, codes and themes could be created from them by bringing together similar meanings (Ekiz, 2015; Yıldırım & Şimşek, 2011). For the reliability of the research, the process was carried out by three researchers, the codes and themes were discussed, and consensus was reached (Creswell, 2016a; Ekiz, 2015). As a result, the findings were presented in a more understandable and organized way using frequencies and shapes. In addition, direct quotations were included in the presentation of the interview data for the reliability of the research. The flow of the study is summarized in Figure 1.

Figure 1. *Flow of the Study*



ETHICAL PRINCIPLES OF THE RESEARCH

Within the scope of the ethical principles of the research, first, ethical committee approval was obtained, and the voluntary participation of the participants was considered in the research. (Creswell, 2016c). In this regard, the primary school teacher, students and parents were informed about the study, ensured about the concealment of their identity, and their consent was taken. As a matter of fact, the name of the school and the teacher where the application was carried out was not specified in the report. In addition, the names of the students were given by coding. In the context of ethics, the implementation process and results were presented clearly, accurately and in detail. References used in the preparation of the report were also given correctly and carefully (Christensen, Johnson & Turner, 2015b; Creswell, 2016c; Ekiz, 2015).

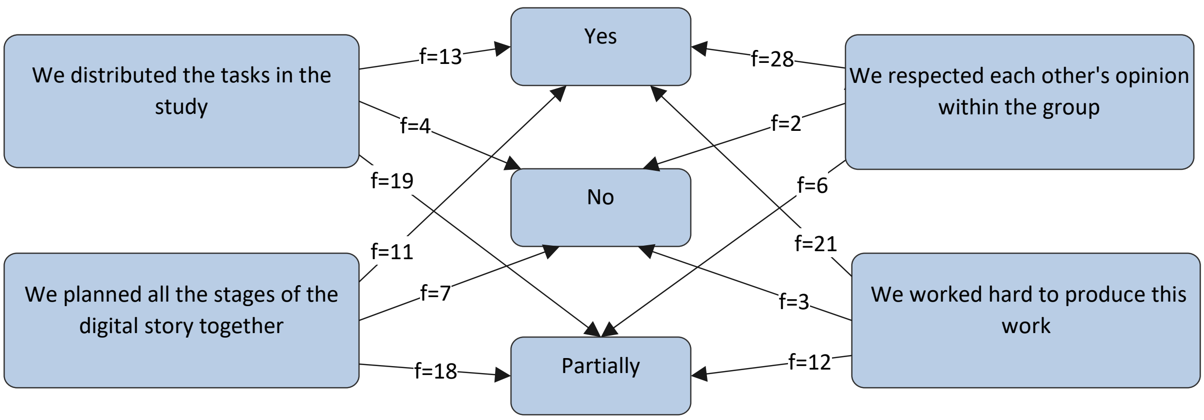
FINDINGS

The data obtained from the Collaborative and Individual Work Evaluation Questionnaire and subjected to descriptive statistics were organized as "Findings on Students' Perceptions of Collaborative Work in Digital Storytelling Experience" and "Findings on Students' Perceptions of Individual Work in Digital Storytelling Experience". Semi-structured interview data conducted with students and subjected to content analysis were organized as "Findings for Students' Evaluation of Group Work Performance in Digital Storytelling Experience", "Findings on Student Characteristics Prominent in Digital Storytelling Experience", "Findings on Student Feelings Prominent in Digital Storytelling Experience", and "Findings for Students' Evaluation of Digital Storytelling Experience". Semi-structured interview data conducted with the primary school teacher and subjected to content analysis were presented under the title of "Findings for the Primary School Teacher's Evaluation of Digital Storytelling Experience".

FINDINGS ON STUDENTS' PERCEPTIONS OF COLLABORATIVE WORK IN DIGITAL STORYTELLING EXPERIENCE

The students were directed four items in the questionnaire regarding their perceptions of working collaboratively in group work. The answers given by the students to these items are as shown in Figure 2.

Figure 2. *Student Perceptions of Collaborative Work*

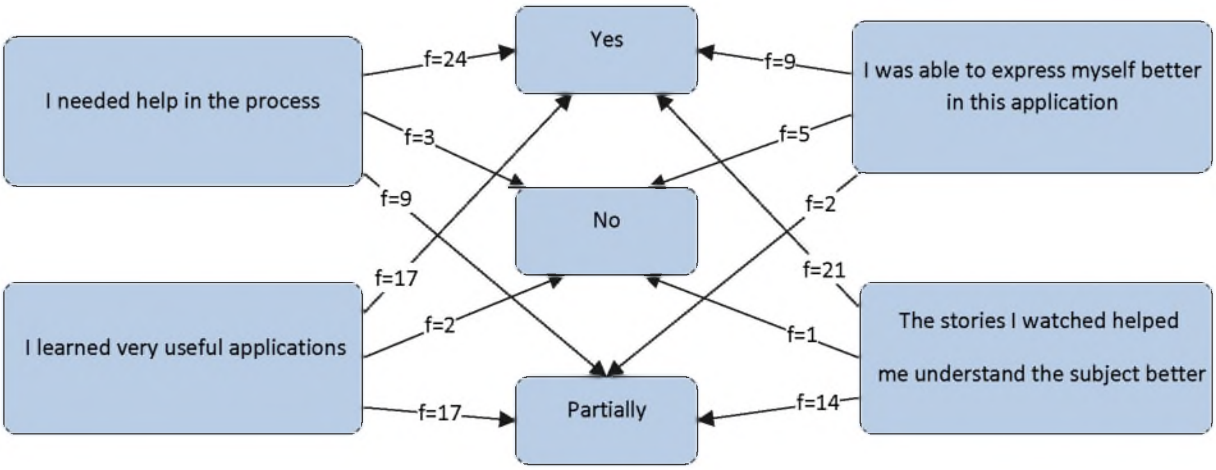


As seen in Figure 2, 11 students (30.6%) stated that they planned all the stages of the digital story together, 18 students (50%) could partially plan together, and 7 students (19.4%) could not. In addition, 13 students (36.1%) stated that they distributed tasks, 19 students (52.8%) could partially do so, and 4 students (11.1%) could not. It is understood from Figure 2 that 28 students (77.8%) respected each other's opinion, 6 students (16.7%) partially realized, and 2 students (5.5%) could not. Finally, 21 students (58.4%) thought that they worked hard in the process, 12 students (33.3) partly thought so, and 3 students (8.3%) thought that was not the case.

FINDINGS ON STUDENTS' PERCEPTIONS OF INDIVIDUAL WORK IN DIGITAL STORYTELLING EXPERIENCE

The students were directed four items in the questionnaire regarding their perceptions of individual work in the digital storytelling experience. The answers given by the students to these items are as shown in Figure 3.

Figure 3. *Student Perceptions of Individual Work*

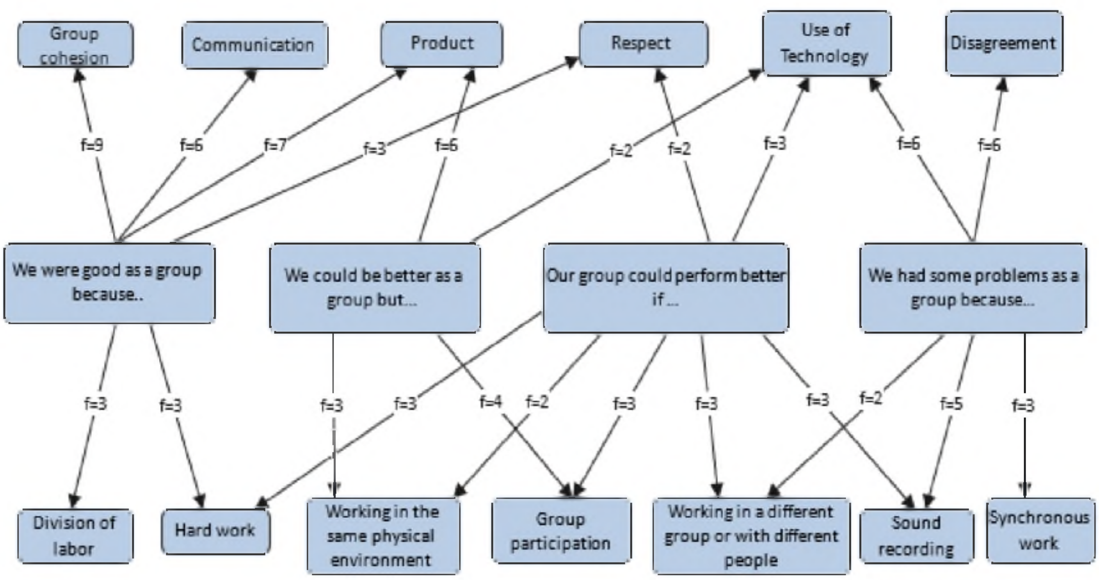


As seen in Figure 3, 24 students (66.7%) stated that they needed help during the homework preparation process, 9 students (25%) partially felt so, and 3 students (8.3%) did not. In addition, 9 students (25%) thought that they expressed themselves better with this application, 22 students (61.1%) partially thought so, and 5 students (13.9%) did not. Moreover, 17 students (47.2%) stated that they learned very useful applications with the experience of digital storytelling, 17 students (47.2%) learned partially well, and 2 students (5.6) did not think so. Finally, 21 students (58.4%) learned the subject better with this experience, 14 students (38.9%) partially learned, and 1 student (2.7%) did not think so.

FINDINGS FOR STUDENTS' EVALUATION OF GROUP WORK PERFORMANCE IN DIGITAL STORYTELLING EXPERIENCE

Semi-structured interview questions were directed to the students about the positive and negative aspects of group work, their good and weak points, the problems they experienced and what could be done to improve their performance. The answers given by the students to these questions are presented thematically in Figure 4.

Figure 4. *Student's Evaluations of Group Work Performance*

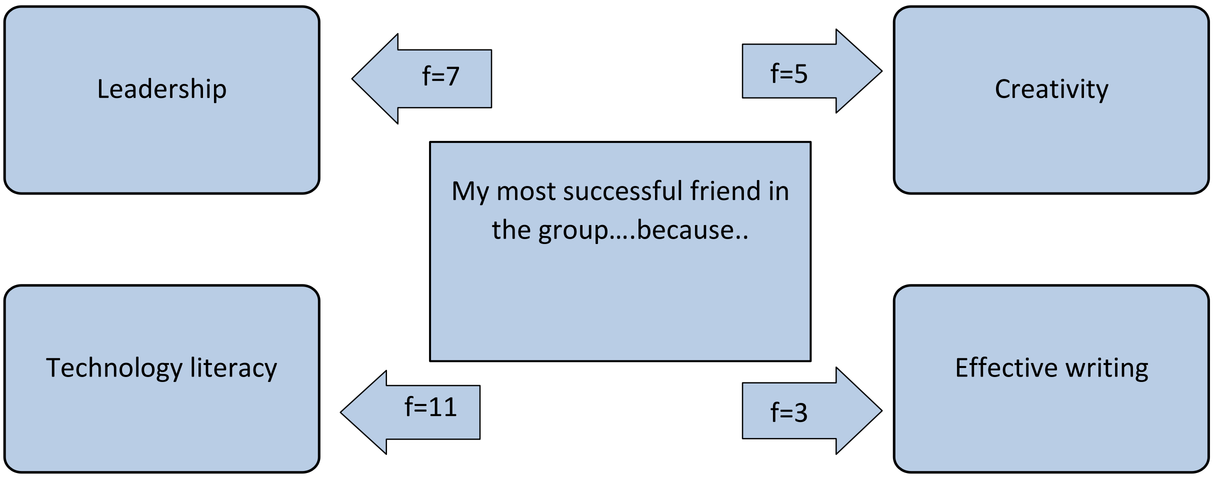


As seen in Figure 4, most of the students (31 students) were satisfied with the group work. Students attributed it to group cohesion, communication, respect, division of labor and hard work. For example, S1 stated *"We worked hard together. We shared tasks and everyone worked hard."* However, some students stated that they had problems in the use of technology, disagreement, synchronous working, sound recording, working in different groups or people in group work. Regarding this situation, S10 expressed *"We had difficulties in using the program and recording the sound."* In addition, students stated that groups would perform better with technology use, group participation, higher respect, and more work. For example, S20 expressed his opinion on this as follows: *"If my friends had more participation and work, our group would have performed better."*

FINDINGS ON STUDENTS' CHARACTERISTICS PROMINENT IN DIGITAL STORYTELLING EXPERIENCE

A semi-structured interview question was directed to the students about which of their friends drew attention with what characteristics in their group work. The answers given by the students to this question are presented in Figure 5.

Figure 5. *Prominent Student Characteristics in Group Assessment*

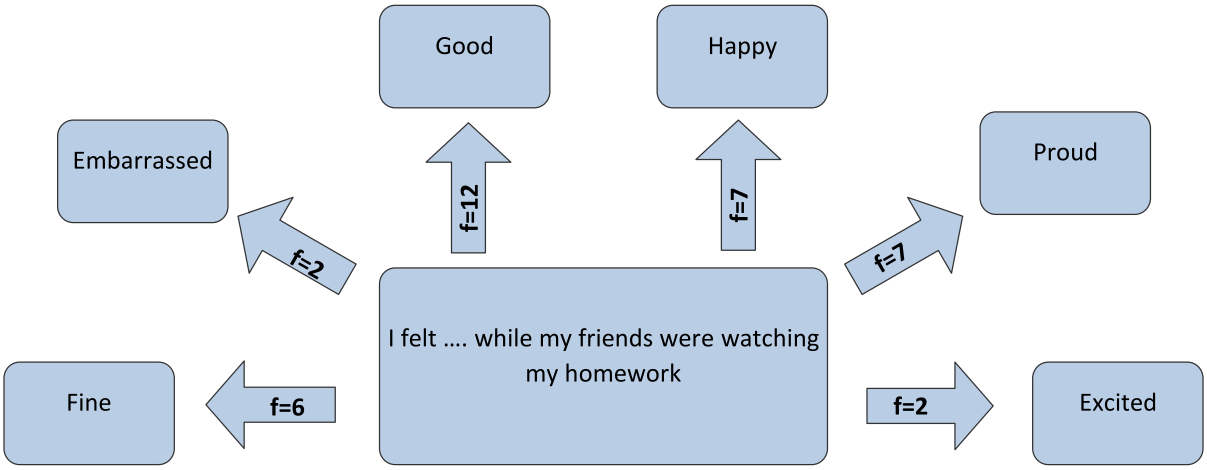


As seen in Figure 5, the students regarded their friends as successful in group work due to their high technology literacy and creativity, their leadership and impressive story writing skills. For example, S26 expressed his opinion as follows: *"My most successful friend in the group was XX because she led the group and wrote a beautiful story."*

FINDINGS ON STUDENT FEELINGS PROMINENT IN DIGITAL STORYTELLING EXPERIENCE

A semi-structured interview question was directed to the students about how they felt while being watched by their classmates when they presented the group products. The answers given by the students to this question are presented in Figure 6.

Figure 6. *Prominent Student Feelings in Digital Story Presentation*

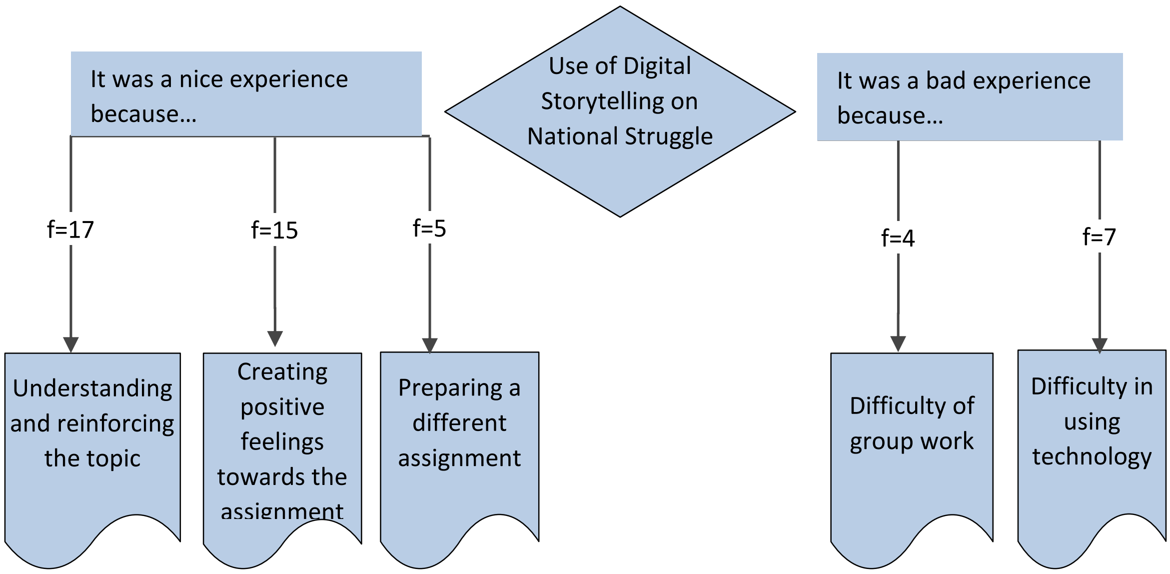


As seen in Figure 6, almost all of the students experienced positive feelings such as "good, happy, proud, fine, excited" while their classmates were watching the presentation of their products. S36 expressed his opinion as *"It made me feel good and nice for my friends to watch our group's homework".* Only two students stated that they felt embraced during this time. For example, S31 expressed his opinion on this issue as follows: *"The fact that my friends watched our group's homework brought me happiness, excitement and embarrassment."*

FINDINGS FOR STUDENTS' EVALUATION OF DIGITAL STORYTELLING EXPERIENCE

A semi-structured interview question was directed to the students about whether it was a good or bad experience to cover the subject of "Heroes of the National Struggle" with digital storytelling. The answers given by the students to this question are presented in Figure 7.

Figure 7. *Student Evaluations of Digital Storytelling Experience*



As seen in Figure 7, most of the students commented on teaching with digital storytelling as a good experience. Students attributed this to learning and supporting the subject, creating positive feelings towards homework, and preparing different homework by using this method. For example, S32 expressed as *"I think it was a good experience to use digital stories about the National Struggle Period as I reinforced the subject better and discovered a new application."* However, some students evaluated this process as a bad experience, emphasizing the difficulty of group work and using technology. For example, S11 expressed his opinion as follows: *"I think it was a bad experience to use digital stories about the National Struggle Period because we didn't use technology very well and our group work wasn't very good."*

FINDINGS FOR THE PRIMARY SCHOOL TEACHER'S EVALUATION OF DIGITAL STORYTELLING EXPERIENCE

Semi-structured interview questions were asked to the primary school teacher about their experiences of digital storytelling for the students and herself. The primary school teacher stated that the use of digital storytelling enabled the emergence of different characteristics of students and increased their interest in the lesson, and expressed as *"During this study, different characteristics of each student emerged. Even the students who were not active enough in the course worked willingly when there was a technological situation. In this study, leadership characteristics of some students were also revealed. These students guided their groupmates and took an active role in story formation."* The primary school teacher expressed the benefits of using this method in teaching as follows: *"It provided to learn the heroes of the National Struggle, which is a difficult subject to understand and comprehend in a live lesson environment, in more fun, permanently and willingly."* The primary school teacher stated that the effectiveness of teaching based on this method depends on the habit of reading books and technology literacy. He stated that *"The students' reading habits had a positive effect on this study. Students who read and understand quickly were able to master the situation more easily. The students' knowledge of technology also affected this study positively."* Finally, the primary school teacher expressed his suggestion for using this method as follows: *"I think that this study can be used for other lessons as it makes learning fun and increases permanence.*

DISCUSSION, CONCLUSION AND IMPLICATIONS

The results of this research revealed that primary school students had the perception that they could work collaboratively by planning the process together, distributing tasks, respecting the opinions of their groupmates and working hard in the digital storytelling experience. Some studies in the literature (Coutinho, 2010; Gyabak & Godina, 2011; Robin, 2008; Sadik, 2008; Yuksel, Robin & McNeil, 2011) also reported the positive effects of digital storytelling technique on increasing students' collaborative working skills. Kotluk and Kocakaya (2015) also determined that digital storytelling enables high school students to plan the process together, take responsibility, help each other, and cooperate. In addition, Gözen and Cırık (2017) revealed that the digital storytelling technique enables preschool students to work in a planned manner and to adapt to group work. Thus, this research overlaps with the literature, supports the current research results that digital storytelling enables students to work collaboratively.

It was determined in current study that primary school students could express themselves better with the experience of digital storytelling regarding their perceptions of individual work. The literature reveals similar findings that digital storytelling enables students to think about their own views (Liu, Liu, Chen & Liu, 2010) and to express themselves effectively (Bedir-Erişti, 2017; Tatlı & Aksoy, 2017). In addition, the current study determined that primary school students were of the opinion that they learned very useful applications and the subject better with the experience of digital storytelling. Shirtless & Pullu (2017) also found that digital storytelling enables students to learn easily. However, the participants in the current study needed help in the process. As a matter of fact, some studies (Broström, 2002; Kocaman-Karoğlu, 2016) stated that it is necessary to help especially young students in individual studies with digital storytelling. In this respect, although there are some problems, the experience of digital storytelling is also considered to enable students to work individually.

As a result of the research, it was discovered that primary school students were successful in group work thanks to communication, respect, division of labor and responsibility in their digital storytelling experience. Some studies in the literature (Bedir-Erişti, 2017; Bran, 2010; Coutinho, 2010; Demirer, 2013; Gözen & Cırık, 2017; Gyabak & Godina, 2011; Jakes & Brennan, 2005; Kotluk & Kocakaya, 2015; Robin, 2008; Turgut & Kışla, 2015) also determined that the use of digital storytelling increases students' effective communication skills. In addition, Seat and Kocakaya (2015) found that digital storytelling improves students' communication, cooperation, responsibility, and cooperation skills. However, the participants stated that the group performance, especially the inadequacy of technology use, decreased. Tatlı & Aktaş (2017) also determined that students experience problems especially related to the inadequacy of technology use skills while applying this technique. The studies in the literature also reported technical problems in the use of digital stories (Doğan & Robin, 2008; Temizsiz & Pullu, 2017; Karakoyun, 2014; Kocaman-Karoğlu, 2016; Kurtoğlu-Erden, 2016; Yamaç, 2015). In addition, in this study, primary school students stated that they had difficulties in working with some members and had disagreement with them in group work. Gözen & Cırık (2017) also revealed that some students experience temporary conflicts and adjustment problems with group members in the use of digital storytelling. In this context, it can be stated that the digital storytelling technique provides especially high-level communication but there are generally technological problems in its use.

In the research, it was determined that presenting digital storytelling experience products made primary school students feel especially proud and happy. Tatlı & Aksoy (2017) also determined that putting out a product in the digital storytelling experience makes students feel proud of themselves. In addition, Bedir-Erişti (2016) determined that use of digital storytelling products gives students excitement and happiness. In this context, the use of digital storytelling technique in the learning environment and process is believed to bring about positive feelings in students.

As a result of the research, it was determined that the primary school teacher believed the digital storytelling technique to increase the participation of the students in the lesson. Some studies in the literature (Balaman, 2016; Bedir-Erişti, 2016; Bedir-Erişti, 2017; Ciğerci, 2015; Coutinho, 2010; Gakhar, 2007; Shirtless & Pullu, 2017; Gyabak & Godina, 2011; Heo, 2009; Kahraman, 2013; Karataş, Bozkurt & Hava, 2016; Kocaman-Karoğlu, 2016; Kotluk & Kocakaya, 2015; Robin, 2008; Tatlı & Aksoy, 2017; Tunç & Karadağ, 2013; Sadik, 2008) also suggested that the digital storytelling technique helps students actively participate in the lesson. In addition, in this study, the primary school teacher was of the opinion that this technique provided permanent learning for the students. As a matter of fact, some studies (Bedir Erişti, 2017; Shirtsiz & Pullu, 2017; Gözen & Cırık, 2017; Karataş, Bozkurt & Hava, 2016; Kocaman-Karoğlu, 2016; Seat & Kocakaya, 2015; Tatlı & Aksoy, 2017) revealed digital storytelling to provide permanent learning. In this respect, it can be stated that the digital storytelling technique provides active participation and permanent learning of the students in the process.

As a result of this research, it was determined that the primary school teacher believed digital storytelling to increase the interest in the lesson. Looking at the literature, there are some studies (Gömleksiz & Pullu, 2017; Torres, Ponca & Pastor, 2012; Tunç & Karadağ, 2013; Tatlı & Aksoy, 2017; Turgut & Kışla, 2015) that verify this technique to increase students' interest. It was also determined in the current study that the primary school teacher confirmed the use of this technique making the lesson more enjoyable. In some studies, in the literature (Baki, 2015; Shirtless & Pullu, 2017; Hung, Hwang & Huang, 2012; İnceelli, 2005; Kocaman-Karoğlu, 2016; Tatlı & Aksoy, 2017; Wang & Zhan, 2010), it was also stated that courses based on digital storytelling technique are fun. Finally, in this study, the primary school teacher recommended the use of digital storytelling in the learning environment. Some studies in the literature (Dogan & Robin, 2008; Karakoyun, 2014; Kocaman-Karoğlu, 2014, Kocaman-Karoğlu, 2016; Sadik, 2008) suggested that teachers who have experienced this technique should also benefit from this technique in the future. In conclusion, the digital storytelling technique is considered as satisfying in terms of making the lesson fun and interesting.

In line with these results of the study, the following suggestions can be made:

- Collaborative practices in which students will communicate at a high level should be carried out in distance education.
- Digital storytelling can be used in terms of enabling students to work collaboratively and individually, enabling successful group work, creating positive feelings, making the learning process fun, and contributing to it.
- Considering the technological problems encountered in the use of the digital storytelling technique, trainings that will increase the technological literacy of the students should be carried out.
- Different studies on the digital storytelling technique can be conducted and compared with the results of present study. In this context, considering the limitations of the research, researches can be carried out especially at primary school level.

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AUTHOR CONTRIBUTION

First author has given final approval of the version to be published. The second author have made substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data. The third author have been involved in drafting the manuscript or revising it critically for important intellectual content.

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Examining Peer Relationships in Transition to Primary School in the Pandemic Process with Teacher and Parent Opinions

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Abstract

The COVID-19 pandemic, which emerged in the last days of 2019, continues to be effective until today. In terms of education, especially the 2020-2021 academic year has been almost entirely online. Considering that schools are the place where children are most together with their peers, peer relations are one of the most disrupted issues during the pandemic process. For this reason, this study aims to examine peer relations during the transition to primary school by taking the opinions of parents and teachers. A case study, one of the qualitative research methods, was used in the research. In the study, in which ten parents and six teachers participated, demographic information forms and interview questions were used as data collection tools. As a result of the research, in which content analysis was used in the analysis of the data, it was determined that parents and teachers thought that there were changes in the social-emotional and behavioural development of children during the pandemic process and that they thought that there were negative peer relationships as well as positive peer relationships during the transition to school. The findings are discussed in the light of the relevant literature.

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INTRODUCTION

Each child is different from another in physical, emotional, and mental aspects (Şahbaz and Yüce, 2021). And preschool and primary school period is the third-fastest period of development after infancy and adolescence. In this period, it is thought that the basis of children's future school success is parallel to their social and emotional development (Berk, 2017). And the transition to school is one of the most important milestones in this period. The child's transition from home to school environment is an important process for him/her. Because the child encounters an academic environment for the first time. Besides, he/she engages with his/her peers and tries to meet with teacher's expectations. At the beginning of primary school, children's ability to form and maintain strategies to cope with the social environment is important for academic and behavioral performance (as cited by Çomaklı & Koçyiğit, 2021, p. 177). However, a global epidemic in recent years has negatively affected children's social and emotional development, as in all developmental areas. The effects of the Covid-19 virus, which emerged in China in December 2019 and spread rapidly worldwide, showed its impact on our country in a short time (Can, 2020). A pandemic was declared by the World Health Organization (WHO), and this situation brought many changes in human life (Aral, Aysu, & Kadan, 2020).

Children, as well as adults, have been greatly affected by the Covid-19 pandemic. Restricting the environments where children can play, not being able to go to school, and not being together with their friends have caused emotional and behavioral problems in them (Sirem & Baş, 2020). Due to the pandemic, staying outside for a limited time, spending more time at home, and having limited interactions with their peers have negatively affected their social-emotional development and all development areas.

CONCEPTUAL FRAMEWORK

Education and training are planned and programmed process that continues throughout life. It may be necessary to interrupt the educational activities that progress within a specific plan and system for various reasons, such as earthquakes, epidemics, natural disasters (İnci Kuzu, 2020). This situation, which developed suddenly due to the rapid spread of the Covid-19 virus, has led to the search for alternative ways to continue education (Arslan, Görgülü Arı & Hayır Kanat, 2021). In this context, distance education was started in primary and secondary schools and universities, weekly course schedules were restructured, and many students continued their education and training activities in a digital environment (İnci Kuzu, 2020).

From preschool to primary school, children encounter a new environment, environment, and friends (Yazıcı, Nazik Kumbasar, & Akman, 2016). Children included in a new environment are expected to acquire social skills such as adaptation to school, communication and interaction with their peers in the first grade. The school environment is vital for socializing and gaining communication skills. The adaptation process to school and peer relations interact with each other (Bart, Hajami, & Bar Haim, 2007). Children begin to experience peer relationships with preschool education (Atış Akyol, Yıldız, & Akman, 2018). In primary school age, it is known that peer relations have critical importance in the child's life (Uz Baş & Siyez, 2011). It is known that peer relationships in early childhood also affect the child's social-emotional relationships in the future (Atis Akyol et al., 2018). The first weeks of school life are critical in obeying rules, establishing social-emotional relationships, and controlling emotional behaviors (Yoleri & Tanış, 2014). The child's peer relationships allow the development of a sense of belonging within the group. Children who adapt to the class and their friends adapt more easily to school and lessons (Gülay, 2011).

In the early years of school, negative relationships between children can last from childhood to adulthood (Uysal, Aydos, & Akman, 2016). Children's positive or negative behaviors are effective in choosing or not choosing them as friends (Uysal & Dinçer, 2012). According to Uysal et al. (2016), children who can communicate well with their peers and their environment are more successful in their future lives. When the opposite situation occurs, fundamental problems are observed along with it. According to Kabasakal et al. (2008), children who do not have strong peer relationships are at risk for feelings of loneliness.

It is seen that the fact that schools continue their activities in face-to-face education helps students exhibit positive behaviors, while closing schools may cause adverse behavioral consequences (Brazendale et al., 2017). Some studies show that long-term school closures and quarantine periods may negatively affect children's social communication and mental and psychological health (Brazendale et al., 2017; Brooks et al., 2020).

PURPOSE OF THE RESEARCH AND RESEARCH QUESTIONS

When the relevant literature is examined, it has been found that there are quite a few studies on transition to primary school (Haktanır, 2018; Koçyiğit, 2014; Yazıcı, Nazik Kumbasar, & Akman, 2016; Yılmaz & Şekerci, 2016). As for peer relations (Çulhaloğlu İmrak & Sığırtmaç, 2010; Gülay, 2011; Uz & Baş & Siyez, 2011), it is seen that many studies have been conducted. With the introduction of the pandemic into our lives, it has been examined that there are a limited number of studies (Erol & Erol, 2020) investigating peer relations during the pandemic period in the transition to primary school. In their research, Erol and Erol (2020) determined peer relationships by taking parents' opinions. This research differs from other studies in that both parents and teachers observe the peer relationships of students who have passed from preschool to primary school during the pandemic process. For this purpose, answers to the following questions were sought:

1. According to the teachers, how are the peer relations of first-grade students before and during the pandemic?

2. According to the parents, how are the peer relations of first-grade students before and during the pandemic?

METHOD

RESEARCH DESIGN

This study was conducted with a qualitative research design to examine and compare the views of first-grade teachers and parents whose children are attending first grade. A qualitative research approach is a research approach that uses qualitative data collection methods such as observation, interview and document analysis, in which the research problem and facts are revealed in detail, realistically, and most of its aspects are revealed in their natural environment (Yıldırım & Şimşek, 2018). This study was designed according to the case study model, which is one of the qualitative research methods. The case study seeks answers to the questions of how and why. The primary purpose of case studies is to reveal the results for a specific situation (Yıldırım & Şimşek, 2018). The main reason for choosing this method is to do due diligence on the research questions and reveal information about this. In this context, the personal perspectives of teachers and parents, who are among the participants, are analyzed. In this direction, the fact that the peer relations of first-grade students will be discussed comparatively with the views of teachers and parents during the pandemic process in this study leads the study to a multiple case study.

STUDY GROUP

The study group of this research consists of six first-grade teachers working in Kastamonu and Samsun in the 2020-2021 academic year and ten parents whose children continue to the first grade. Criterion sampling, one of the purposive sampling methods, was used to determine participant teachers and parents. As a criterion, the condition of being a first-grade teacher in 2020-2021 and that parents' children attend first grade was set. In the data analysis, the teachers participating in the study were coded as T.1-T.6, while the parents were coded as P.1- P.10. Information about the participants is given in Tables 1 and 2:

Table 1. *Demographic Information on Parents*

	Gender	*Age*	*Educational status*	*Number of child*	*Job*
P.1	Male	35	Bachelor	2	Teacher
P.2	Female	34	Master	1	Nurse
P.3	Female	40	Bachelor	2	Sociologist
P.4	Female	39	High School	2	Housewife
P.5	Female	34	Bachelor	2	Housewife
P.6	Female	29	Primary School	1	Housewife
P.7	Male	34	Bachelor	2	Teacher
P.8	Female	32	High School	2	Housewife
P.9	Female	34	Bachelor	1	Teacher
P.10	Female	28	High School	1	Housewife

Table 2. *Demographic Information on Teachers*

	Gender	*Age*	*Educational status*	*Seniority (year)*	*Number of children*
T.1	Female	31	Bachelor	6-10	21 +
T.2	Female	33	Bachelor	6-10	11-20
T.3	Female	40	Bachelor	16-20	21 +
T.4	Female	33	Bachelor	16-20	11-20
T.5	Female	31	Bachelor	6-10	11-20
T.6	Female	37	Bachelor	16-20	11-20

When Table 1 is examined, the gender of the parents whose children are attending the first grade is female, two males, their age ranges between 28-40, their educational status is five undergraduate, one associate degree, three high school, one primary school and among the findings, 1 of them had postgraduate education, 4 of them had one child, 6 of them had two children, 3 of them were teachers, 1 of them was sociologist, 1 of them were nurses, and 5 of them were housewives.

When Table 2 is examined, it is seen that all of the 1st-grade teachers participating in the research are women; they are in the 30-40 age range, 4 of them have 6-10 years of seniority, 2 of them have 16-20 years of seniority, and 4 of them have 11-20 years of seniority. It is found that the number of students in the classes of 2 of them is 20 and above.

DATA COLLECTION TOOLS

The researcher prepared a structured interview form as a data collection tool in the research. Before the interview questions were prepared, the relevant literature was scanned and the purpose of the research prepared open-ended questions. The prepared questions were presented to an expert academician in the preschool department and expert opinion was taken. After the expert opinion, "What comes to mind when you think of peer relations?" question was added to the interview questions Afterward, pilot interviews were conducted with two classroom teachers to evaluate the clarity and relevance of the research questions, and the final form of the interview form was determined.

DATA COLLECTION TOOLS FOR PARENTS

Demographic information form and interview form were used for parents. In the demographic information form, there are questions about the gender, age, occupation and education level of the parents. In the interview form, there are questions that include determining the views of parents about their children's peer relationships.

DATA COLLECTION TOOLS FOR TEACHERS

Demographic information form and interview form were used for teachers. The demographic information form includes information about teachers' gender, age, last graduated education level, professional experience, and the number of students in their class. In the interview form, there are questions that include determining the teachers' opinions about their students' peer relations.

DATA COLLECTION

The data were collected in individual interviews organized online with the Zoom program due to the pandemic. During the data collection process, the participants were primarily informed that the interview would be recorded, and the recording was started after the participant's consent was obtained. At the beginning of the interview, the participants were asked to read aloud the consent form sent to them via e-mail in the virtual environment and verbally express their willingness to participate in the study. After obtaining consent, interview questions were directed to the participants.

ANALYSIS OF DATA

The data obtained within the scope of the research were analyzed with the content analysis method, one of the qualitative data analyses. Content analysis was carried out by converting the collected data into written form and reading them separately, bringing similar data side by side and determining categories and themes. The main purpose of content analysis is to reach the concepts that can help explain the data obtained and the relationships between these concepts (Yıldırım & Şimşek, 2018). The interviews were transcribed and then verified by taking expert opinion. After the transcription process was completed, the analysis process was started. The findings were read many times during the analysis process, and themes and codes were created based on the research questions. Direct quotations from the participants ' statements were included at the stage of interpretation of the findings obtained as a result of the analysis of the collected data. It was examined whether the findings were meaningful and consistent within themselves as a whole. The themes and codes created were re-examined with expert opinion, and the consensus was reached by discussing the points of disagreement. While direct quotations were included in the interpretation of the findings, codings such as "S1-S6" for teachers and "E1-M10" for parents were used. The codes given to teachers and parents are indicated in parentheses at the end of the quotation sentences.

VALIDITY AND RELIABILITY

This study is qualitative and it is difficult to analyze because there are no numerical data to prove the validity and reliability analysis (Başkale, 2016). For this reason, validity-reliability in qualitative studies is handled differently from quantitative studies (Yıldırım & Şimşek, 2018). It is tried to give information about validity and reliability by mentioning expressions such as credibility, accuracy of results and competence of the researcher. In order to ensure validity and reliability in this study, the findings and results were communicated to some of the participants after the analysis of the data, and participant confirmation was obtained. Participant confirmation is one of the strategies that can be applied to ensure the internal validity of the research (Lincoln & Guba, 1985; cited in Yıldırım & Şimşek, 2018).

Due to the extraordinary conditions experienced, the interviews were conducted in the digital environment. Research produces reliable information that is closely related to the care and attention shown in their design and implementation (Merriam, 2015). It is stated that strategies such as long-term interaction, depth-focused data collection, diversification and expert review can be used to ensure internal validity (Lincoln & Guba, 1985; cited in Yıldırım & Şimşek, 2018). In this study, detailed description and purposive sampling were preferred in order to ensure external validity. Expert review and participant confirmation were used in this study to ensure internal validity. The external reliability method used in this study is short confirmation.

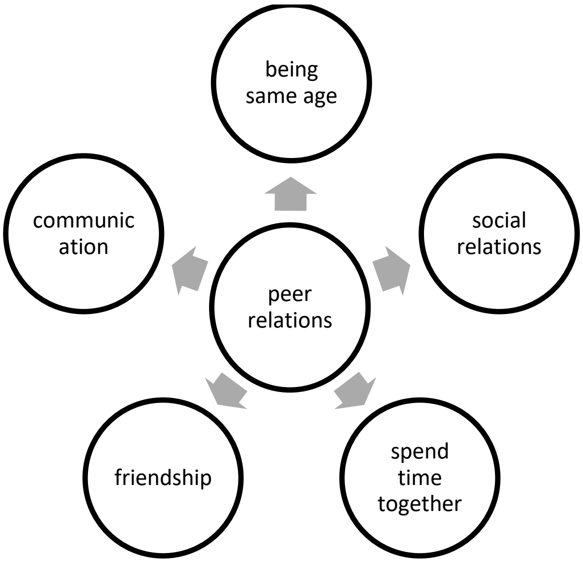
FINDINGS/RESULTS

In this section, we aimed to determine the opinions of teachers and parents on the examination of peer relations in the transition from preschool education to primary school before and during the pandemic. For this purpose, we first asked parents and teachers what peer relationships mean.

DEFINITION OF PEER RELATIONSHIPS

We have given the findings of the answers given by the participants to the question "What comes to your mind when you think of peer relations?" in Figure 1.

Figure 1. *Definitons of Peer Relationships*



When Figure 1 is examined, it is seen that teachers and parents primarily define peer relations as "being same age"; however, concepts such as "social relations", "spend time together", "friendship" and "communication" are among the findings obtained.

"Emotional or intellectual intimacy and socialization of people who are close to each other in age. (P.7)''

"I remember the relationships and interactions of children of the same age with each other. (T.3)"

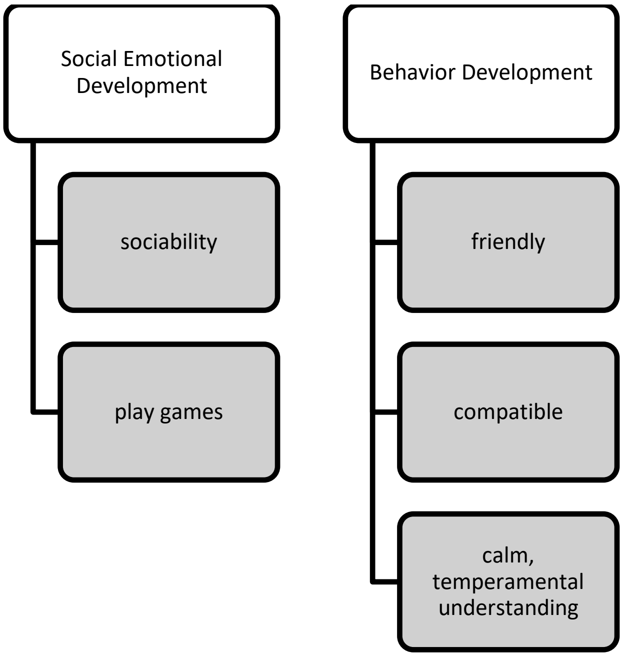
"Social relations with peers (P.9)"

"Peer relationships are the relationships that are very important for the social development of children, and that children can gain or lose self-confidence, which can not be established with adults but only with their own age group (T.2)"

PEER RELATIONS BEFORE PANDEMIC ACCORDİNG TO PARENTS AND TEACHERS

To determine the peer relationships of children before the pandemic, we only took the parents' opinions. Teachers were not asked for their views on this question because they did not know the students who transitioned from preschool to primary school before the pandemic. In line with the opinions received from the parents, we collected peer relations before the pandemic in two categories: "Social Emotional Development" and "Behavioral Development".

Figure 2. *Views on Peer Relations Before the Pandemic*



SOCIAL-EMOTIONAL DEVELOPMENT

When the answers received from the parents were examined, we determined that they gave the most "sociability" answer when expressing their peer relations before the pandemic process. It is among the remarkable answers that children were more social before the pandemic, spent more time with their friends, and played games. The views of the parents regarding these findings are given below.

"He used to play comfortably in the playground with his friends. He would go to their house, and sometimes his friends would come to our house. They played games together all day long. He eagerly wanted to go to school. Because they used to spend quality time with their friends there (P.7)."

"Before the pandemic, my child was spending more time with his peers. He was doing the activities he liked with his peers. Spending good time with their peers and playing games together made my child happy. (P.10).''

BEHAVIORAL DEVELOPMENT

When the answers received from the parents were examined, they stated that the children were more "friendly", "compatible," and "sometimes understanding, sometimes aggressive social-emotional friends before the pandemic. Regarding this issue, E.2 and E.8 stated the following:

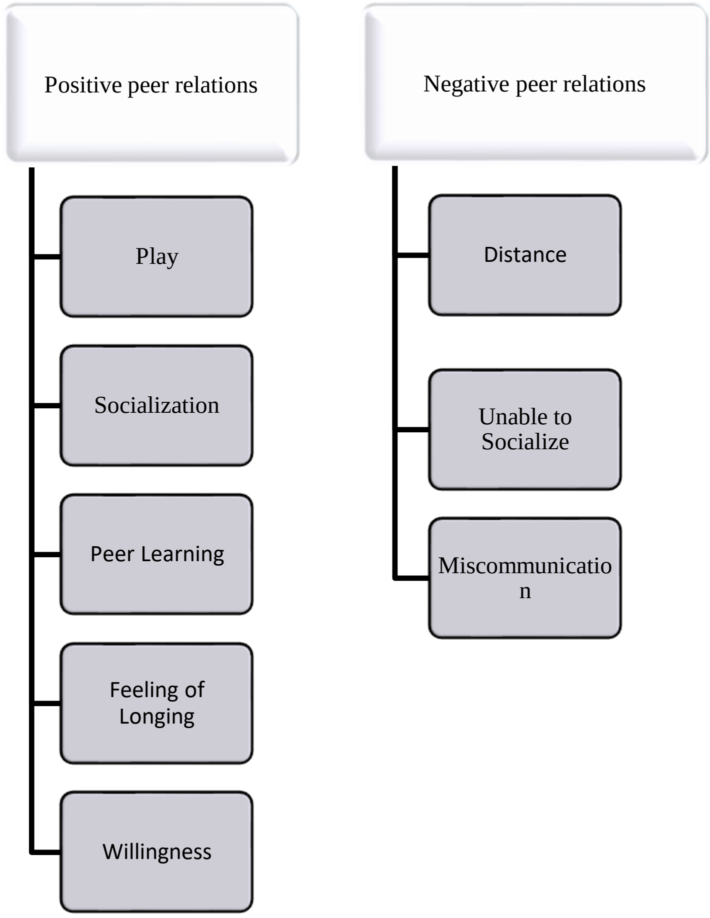
"Before the pandemic, my child was much more friendly, calm, harmonious and able to spend a lot of time with friends (P.2)."

"My child is friendly and adaptable. Before the pandemic, he was spending more time with his friends (P.8)."

PEER RELATIONSHIPS IN THE PANDEMIC PROCESS ACCORDING TO PARENTS AND TEACHERS

When we look at the opinions of teachers and parents regarding the peer relations of children during the pandemic process, we saw that they are divided into three themes: peer relations in the transition to school process, peer relations in the school process, and peer relations in the online education process. The themes related to the views of teachers and parents on peer relations during the transition to school are given in Figure 3.

Figure 3. *Opinions on Peer Relations During the Transition to School*



POSITIVE PEER RELATIONSHIPS OBSERVED IN TRANSITION TO SCHOOL

According to the answers received from the teachers, it is among the findings that students observed positive relationships in the direction of "playing games", "socializing", "sense of longing" and "peer learning" in the transition to the school process. One teacher stated that she did not observe any difference in this process. Examples of opinions on this subject are given below:

"With the reopening of the school, I observed how much children miss spending time with each other, chatting with each other, and doing activities with their peers by living in the classroom. Especially for children in this age group, since friendship means playing games, I think that peer relations are affected positively as they play and play together (T.2)"

"They always miss each other and me (T.6)"

According to the answers received from the parents, it is among the findings that they observed positive relations in the direction of "increasing self-confidence" and "socializing" in the transition to the school process. On the other hand, two parents stated that they did not observe any difference in the transition period compared to the past. Examples of opinions on this subject are given below:

"First of all, his self-confidence started to come back. He started to learn how to react to the behavior of his friends (P.4)"

"After starting school, he spends more time with children who are close to his character. He started competing with children of his own level. But in general, he has a good time in harmony (P.8)"

NEGATIVE PEER RELATIONS OBSERVED IN THE TRANSITION TO SCHOOL

According to the answers received from the teachers, it is among the findings that students observed negative relationships in the direction of "distance" and "non-communication" during the transition to school.

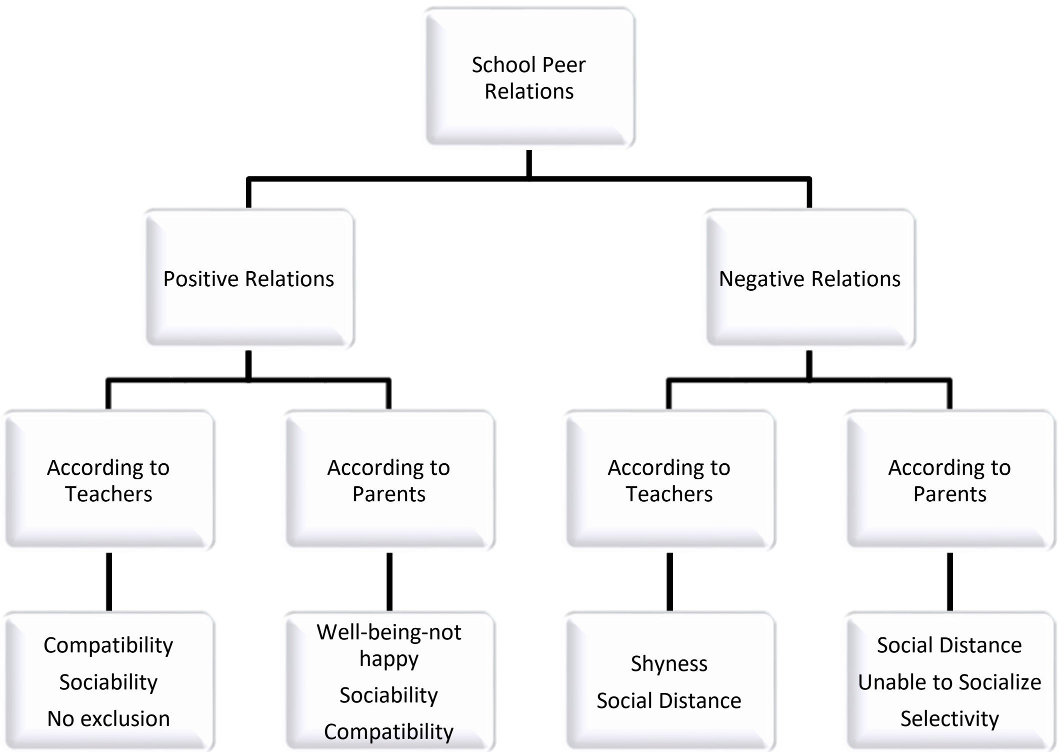
When the answers received from the parents are examined, it is among the findings that their children are faced with negative situations such as "not being able to socialize", "being confused", "not being able to make friends" during the transition to school. Sample comments on these findings are given below:

"In the past, they had good or bad communication during the transition to school, they learned a lot from each other's behavior. With the pandemic, they could not experience this process. I think that this reflected negatively on the behavior of the children (T.4)"

"Since he could not have a full-time education process, he could not have an efficient and sufficient process of making friends (P.1)"

The findings regarding the views of parents and teachers on peer relations in the school process are given in Figure 4.

Figure 4. *Views of Parents and Teachers on Peer Relations in the School Process*



POSITIVE SCHOOL PEER RELATIONSHIPS

According to the answers received from the teachers, it is among the findings that the students maintain positive relationships in the direction of "adaptation", "sociality" and "no exclusion" during the school process.

When the answers received from the parents are examined, it is among the findings that their children observed positive relationships in the direction of "well-being-happiness", "sociability" and "adaptation" during the school process.

Sample opinions on this subject are given below.

"In general, all the children were in harmony. The children provided support and trust in each other in their peer relationships. This increased the sense of belonging. Children who are aware that they are loved and accepted by their peers are happier and more willing (T.2).

"He was very happy when he started school. He learned the names of many of his friends from the first day and played games with most of them. He loved being at school and was very happy to be with his friends and teacher (P.8)."

NEGATIVE SCHOOL-PEER RELATIONS

According to the answers received from the teachers, it is among the findings that students have negative relationships in the direction of "shyness" and "social distance" during the school process.

When the answers received from the parents are examined, it is among the findings that their children are faced with negative situations such as "social distance", "not being able to socialize", "selectivity" during the school process.

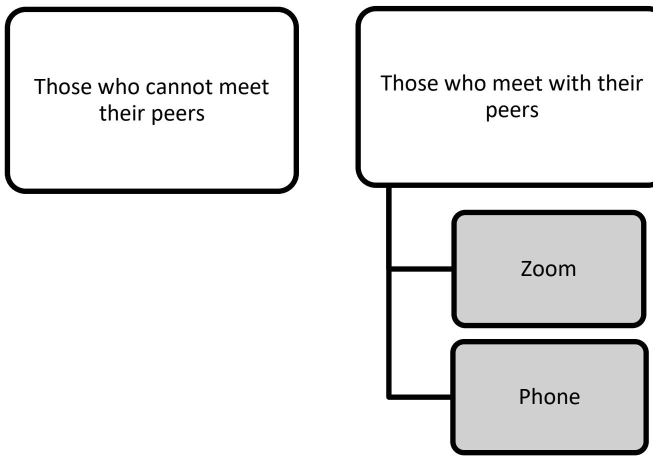
Sample comments on these findings are given below:

"My student had problems with integration in the first weeks. Because he was a bit shy, he waited for his other friends to take a step to socialize (T.3)"

"Since he spent a short time in face-to-face training, he did not have the opportunity to mingle with his classmates much. He could not establish close friendships because he had to keep a distance with his friends in class and during breaks (P.1).

The views of parents and teachers regarding peer relations during the transition to online education are given in Figure 5.

Figure 5. *Views of Parents and Teachers Regarding Peer Relations During the Transition to Online Education*



CHILDREN WHO DO NOT MEET WITH THEIR PEERS

When Figure 5 is examined, it has been determined that the majority of children who cannot meet with their peers during the transition process of children to online education are in parental views. Examples of opinions on this subject are given below:

"Unfortunately, we do not make arrivals and departures due to the pandemic. Therefore, we did not have the opportunity to meet face-to-face (P.5)."

"During the online education process, my child could not meet with his friends except for the live lesson. He could only meet in class if there was a live lesson. There was no meeting other than that, unfortunately, this affects our children negatively (P.11)."

CHILDREN MEETING WITH THEIR PEERS

When the answers received from the parents were examined, it was determined that the children who were able to meet with their peers used telephone and zoom applications as interview channels. Examples of opinions on this subject are given below:

"Only our neighbor has two children and he sees them occasionally. Apart from that, he is video chatting with his cousins. They paint each other, tell stories, ask riddles to each other (P.8)."

DISCUSSION, CONCLUSION AND IMPLICATIONS

Peer relationships play a major role in the child's personality development. Because personality development starts in the transition to preschool and primary school, together with peer relationships (Erol & Erol, 2020). Transition is a natural process that we encounter in education programs and levels (Altın, 2014). The child who has just met the school environment needs peer relations and social skills in the transition process (Erten, 2012). This study aims to examine the peer relations encountered during the transition from preschool to primary school, with the introduction of distance education into our lives due to the pandemic. The findings are discussed, interpreted, and presented below within the research and interview questions framework in this part of the study.

It was seen that 4 of the 6 teachers who participated in the study interpreted the question as "the age of the children" to the question "What comes to mind when you think of peer relations?", while 9 of the parents defined it as "the age of the children with each other". . It was concluded that most of the teachers and parents understood "the age status of the children" from their peer relations.

In addition to being the same age, it was concluded that 4 of the parents emphasized the concept of "social relations". Erten (2012) also stated in his thesis study that while expressing peer relations, it is "the process that starts with the interaction of the child with other children of the same age or maturity". Erten's definition of peer relations in his thesis study is similar to the definition made by parents and teachers in our study.

When asked to the parents, "Can you tell us about your child's peer relationships before the pandemic?", most of the parents (7 of them) stated that their children were much more social and active before the pandemic, and that they used to play more games with their friends. Along with the pandemic, a parent expressed that children are more fond of communication tools such as phones and tablets, with the following words: "The pandemic process has made my child more accustomed to the phone and tablet (E.10)" It is concluded that they are social and active, and they play more games with their peers. Bozkurt and Duran (2021), in their study, concluded that the pandemic process had a negative impact on peer relations, in which children had to stay away from their friends in order to maintain social distance. This result is similar to our study.

Asked to the teachers, "Can you tell us about the peer relations in your class when you started the first semester of education? When the answers given to the question "Is there any exclusion, is everyone in harmony, are there children with introverted or externalized problems?", Three of the teachers stated that there is no exclusion, that the children are compatible and that they are more social. They also stated that there are introverted and shy children in their classrooms. In their study, Gülay Ogelman and Erten (2013) concluded that children's level of adaptation to school in transition shows changes during the academic year. It is normal for each child to show different behaviours in this process based on individual characteristics.

When asked to the parents, "How was your child's relationship with his/her peers (friends) in the classroom before the online education?", most of the parents (6 of them) stated that they were happy to attend school and that they had the opportunity to communicate easily with their peers in a social sense, while two parents stated that They stated that their children could not establish close relationships with their peers in the classroom and during recess due to the distance. In his study, Karataş (2020) concluded that individuals increased their personal hygiene measures with the pandemic and avoided environments with close contact. The result reached by Karataş is similar to our study.

Asked to parents, "Did your child meet with friends during the online education process? What channels did they interview? What did they do?'', most of the parents (6 of them) stated that they could not meet with their peers at all outside the live class hours due to the pandemic, which affected the children socially badly and that the children were very bored at home. On the other hand, 4 parents stated that their children met with their peers, played games through the zoom program, and that they could only meet in digital environments because they learned that face-to-face meeting is risky for children's health. As a result of the opinions received from the parents, although the students wanted to communicate face-to-face, they continued to communicate with each other through telephone or online games in this process. In their research, Akça and Akgün (2020) concluded that although there is no problem in bilateral meetings between students or with their teachers, students want to come together as a group and physically. This result is similar to our study. Asked to the teachers, "How do you think the online education process changes peer relations? In the transition to online education, what kind of activities did you do to integrate the whole class?" All of the teachers who participated in the research stated that their peer relations were negatively affected with the transition to online education. It is concluded that children cannot play games, make contact, spend time together and have limited communication. These reasons create feelings such as screen addiction, aggressive behaviour and longing for school in children. According to the opinions received from parents and teachers during the pandemic process, the boredom and psychological depression experienced by some children when they are away from school cause them to miss their teachers and friends, and as a result, feel bad. In her study, İnci Kuzu (2020) concluded that the distance education process negatively affects the psychological state of children, that they are aggressive and stressed in this process, and that this process is psychologically distressing for children because they are addicted to screens. Most of the teachers who participated in the research (4 of them) stated that they gave them the opportunity to chat with each other in order to integrate children during the transition to online education, while 1 teacher stated that he did not do any activity. When this result is examined, it is concluded that the teachers faltered in the transition to the distance education process and they had difficulties in inclusion activities.

Asked to the teachers, "Can you tell us about the peer relationships of the children in your class after school starts? When the answers given to the question "Can you make a comparison with the past?" were examined, it was concluded that most of the teachers stated that the children were very happy because they started face-to-face education, that they played games and missed, and that this situation also had a positive effect on peer learning. Development is a whole, social development will also positively affect academic development. Aral and Durualp (2010) concluded in their research that it is beneficial to use the game, a natural learning environment for children, by integrating it with activities to develop social skills. The fact that the two teachers who participated in our research stated that children learn to do activities with their peers at school and learn something from each other's behavior is similar to the result of this research.

When the answers given to the question "How did you observe the changes in your child's peer relations compared to the past," which was asked to the parents, were examined, it was concluded that some children faltered during the transition to face-to-face education, kept their distance from their friends due to the pandemic, and had difficulties in making friends in this process. On the contrary, it was concluded that some children spent time in harmony with their friends in this process, learned to share, discuss and talk, and played games with their peers. When these results are examined, it is concluded that the pandemic's levels of children are different. It is concluded that after the pandemic, there are changes in children's peer relations, some children are more distant towards their friends and at the same time have difficulties in communication. When the study of Demir and Kale (2020) is examined, the positive and negative aspects of the distance education process were examined and similar results were obtained.

SUGGESTIONS

A quantitative study can be conducted to examine peer relations during the transition to primary school by taking the opinions of parents and teachers.

Studies on peer relations can be carried out with older age groups in the pandemic.

Studies on peer relations can be carried out during the transition to primary school.

Semi-structured in-depth interviews can be conducted.

ACKNOWLEDGEMENT

All procedures performed in studies involving human participants were conducted in accordance with the ethical standards of the institutional and/or national research committee, and also with the 1964 Helsinki Declaration and its subsequent amendments or comparable ethical standards. In addition, decision number 2021/296 was obtained from the Social and Humanities Ethics Committee of XXX University, Turkey, to conduct the current study.

AUTHOR CONTRIBUTION

The authors contributed equally to the current research with both data collection and data analysis. All authors have read and approved the published final version of the article.

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The Predictive Power of the Problem-Solving and Emotional Intelligence Levels of Prospective Teachers on Their Self-Directed Learning Skills

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Abstract

This study aims to determine the predictive power of the problem-solving and emotional intelligence levels of prospective teachers on their self-directed learning skills. This is a descriptive study with a relational screening model. The sample of the study consisted of 476 prospective teachers studying at the Faculty of Education and Sports Sciences at Yozgat Bozok University. "Self-Directed Learning Skills Scale" developed by Aşkın (2015), "the Problem-Solving Inventory" developed by Heppner and Peterson (1982) and adapted into Turkish by Şahin, Şahin, and Heppner (1993), and the "Schutte Emotional Intelligence Scale" prepared by Schutte, et al. (1998), revised by Austin, Saklofske, Huang and McKenney (2004), and adapted into Turkish by Tatar, Tok, and Saltukoğlu (2011) were used to answer research questions. In data analysis, descriptive statistics, Pearson's correlation coefficient, and multiple regression analysis were used according to the normality test results. It was found that the self-directed learning skill levels of the participants was high, there was a significant relationship between their levels of self-directed learning and their emotional intelligence and problem-solving levels, and problem-solving and emotional intelligence together explained 25% of the total variance in self-directed learning skills. Based on these findings, recommendations were offered, especially in educational environments, to carry out activities that support problem-solving skills and emotional intelligence, thus supporting self-directed learning.

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INTRODUCTION

Self-directed learning, namely autodidacticism (Brookfield, 2009) or autonomous learning (Holec, 1980), is a learning style in which the design, implementation, and evaluation processes of learning are managed by the learner, and the learner themselves makes decisions about what content, how, and when to learn (Brookfield, 2009). Hiemstra (1994) asserted that self-directed learning takes place at the initiative of the student, and the individual has the primary responsibility for planning the effort and path to learn, implementing the plan, and evaluating the learning level. Self-directed learning is an effort made by the individual to meet their learning needs without the help of others, access information by making the necessary arrangements for themselves, acquire the necessary skills, and exhibit performance (Din, Haron, & Rashid, 2016; Herlo, 2017). Knowles (1975) stated that an individual with self-learning skills takes initiative, determines their learning needs and resources, creates learning goals, applies appropriate learning strategies, and teachers should be facilitators in the individual's acquisition of these skills. Clardy (2000) defined self-directed learning as the process of the learner to determine what they need to learn, know where they can find information, and evaluate their status of reaching their learning goals. Based on these arguments, self-learning means that the individual organizes the learning process, plans what they have to do to achieve their learning goals, implements the plan, and evaluates the result of the implementation.

Students who plan their learning, make changes in their learning routines to implement their plans and organize their study environment should take more responsibility for learning than students who do not have these qualifications, focus on the content they will learn, evaluate their acquisition of the content, and implement what they need to do according to the results of this evaluation. In other words, self-directed learners should complete their learning processes on their own without the guidance or supervision of another individual. Organizing the learning process by oneself first requires the individual to know themselves, as well as knowing what content and how the individual learns, being aware of what distracts them in the learning process, and identifying the elements that motivate them to facilitate the management of learning.

Having self-directed learning skills in higher education enables students to improve themselves, have high motivation for learning, have a desire to learn, analyze their emotions correctly and direct them positively in this process, believe that they can solve the problems they face, and in short, become lifelong learners. Especially since the knowledge and skills acquired in the four-year undergraduate education at education faculties are not sufficient in an average of 25 years of professional life, prospective teachers need to recognize their learning styles, make positive use of their emotions, and solve problems in this process.

Various researchers have reported the knowledge, skills, and attitudes of self-directed learners. Hiemstra (1994) stated that the learning capacity of individuals with self-directed learning skills increases, they learn from their experiences, respect themselves, have a curiosity-learning and desire to succeed, and their intrinsic motivation is high. Taylor (1995) suggested that these learners perceive problems as challenges to overcome, they want to change, they enjoy learning, they are persistent, independent, self-disciplined, self-confident, and goal-oriented, while Garrison (1997) underlined that self-directed learners have a high level of responsibility for making learning meaningful and monitoring themselves. Toit-Brits and Zyl (2017) stated that self-directed learners gain control in learning, determine their learning destiny, are assertive, and know their abilities and personality traits. Guglielmino and Guglielmino (2003) expressed that self-directed learners are self-confident, take responsibility in learning, do not shy away from problems, on the contrary, they see problems as challenges to overcome, are creative and independent in learning, can easily ask for help when needed, and use the available tools in learning, and they added that these learners create new learning tools when the available tools are insufficient, act in accordance with the time/work plan and believe that their learning is invaluable, and the authors likened such teachers and self-directed learners to a lone wolf struggling to learn. These listed qualities question the relationship between self-directed learning skills and the concepts of emotional intelligence and problem-solving skills.

SELF-DIRECTED LEARNING AND EMOTIONAL INTELLIGENCE

Individuals with self-directed learning skills regulate their learning, are aware of the variables that affect the learning process, motivate themselves, are especially conscious of their emotions, and manage their emotions, and these qualities are all related to the concept of emotional intelligence (Zhoc, Chungb, & King, 2018). Emotional intelligence was defined by Law, Wong, and Song (2004) as an individual's ability to express their emotions, understand the emotions of others, use the information obtained in this process in their thoughts and behaviors, and know the effect of their emotions on different situations. According to Wolff (2005), emotional intelligence is the capacity to recognize our emotions and those of others, motivate ourselves, and effectively manage our emotions. Emotional intelligence makes it easier for the individual to accurately describe their emotions and control their reactions so that they gain the flexibility necessary to adapt to changing situations and can direct themselves correctly. In different definitions of emotional intelligence, understanding emotions, knowing the effects of emotions, using emotions in regulating behavior and thoughts, and using emotions for motivation are related to the concept of self-efficacy/self-regulation. Studies have also revealed that there is a strong relationship between self-directed learning and emotional intelligence, and having positive emotions towards learning and managing changing emotions in the learning process positively supports academic performance and self-management (Bansal, 2021; Buvoltz et al., 2008; McCombs & Whisler, 2010; Muller, 2008; Roger, 2009; Zhoc, Chung & King, 2018; Zull, 2006).

Determining the effects of managing emotions and self-directed learning is more important in higher education than other educational levels. In this respect, starting and maintaining personal development, which is one of the main goals of higher education, and taking responsibility for learning requires having self-directed learning skills and regulating and managing emotions to facilitate learning in this process. Individuals in higher education are expected to both organize their lives and make decisions about the future and take part in life as active citizens. The self-directed learning skills of prospective teachers and their management of emotions both support them to be lifelong learners and enable them to be a model for their students in these matters.

Studies on the self-directed learning skills of prospective teachers in Turkey have been aimed at determining their readiness for self-directed learning (Karataş, 2017; Kırılmazkaya, 2018) and their opinions about self-directed learning skills (Aşkın Tekkol & Demirel, 2016). Studies on emotional intelligence are mainly related to determining the emotional intelligence levels of students at departments of physical education and sports (Dorak, Vurgun, Uludağ Uyanıker & Çakır, 2012; Eraslan, 2015). Nevertheless, no previous study was found to determine the relationship between self-directed learning skills and emotional intelligence. Therefore, it is thought that this study could be beneficial for prospective teachers in motivating and directing their learning.

SELF-DIRECTED LEARNING AND PROBLEM-SOLVING SKILLS

The skill of problem-solving we encounter in many situations, from deciding which dress to buy while shopping to solving the most complex mathematics-physics problems, is the ability of the individual who has to solve the problem to produce a new solution by synthesizing the information they have for reasoning, being emotionally strong, not giving up on solving problems, and self-synthesizing. It requires motivation to solve problems. Woods et al. (2013) asserted that individuals with problem-solving skills could read, understand, gather information, understand the problem and develop tactics for solving the problem, think about problem-solving processes, do the right thing without haste, be organized and flexible, think systematically, and take risks, not to be afraid of uncertainty situations, and open to managing stress. In the problem-solving process, the individual should make a series of efforts to eliminate difficulties encountered in the process of reaching their goal, reduce obstacles, think creatively, and combine intelligence-emotion-will and self-confidence (Oğuzkan, 1985).

Self-directed individuals are expected to take responsibility for their learning, so they look for causes of failure within themselves, not other individuals, determine what they need to do according to the results of their evaluation, think about alternative ways, see the problems they encounter as difficulties to overcome, and be goal-oriented. These listed qualities coincide with the qualities of individuals with problem-solving skills. Hence, it is thought that having self-directed learning skills could be related to problem-solving skills, as well as emotional intelligence. Previous studies have also reported the relationship between self-directed learning and problem-solving skills (Choi, Lindquiste & Song, 2014; Eunyoung, Ruth, & Yeoungsuk, 2014; Hwang & Oh, 2021; Loyens, Magda & Rikers, 2008).

Among studies on the problem-solving skills of prospective teachers in Turkey, it is seen that Aslan and Uluçınar Sağır (2012) aimed to determine the problem-solving skills of prospective science and technology teachers, Yiğitcan Nayir and Tekmen (2017) studied the contribution of learning environments to problem-solving skills from the perspective of prospective teachers, and Kiremitçi (2011) examined the relationship between the metacognitive awareness and problem-solving skills of prospective physical education teachers. However, there is no study investigating the relationship between problem-solving and self-directed learning. Besides, no study that investigated the effects of problem-solving skills and emotional intelligence on self-directed learning was found. In a study conducted by Kreber (2006), a significant relationship was seen between self-directed learning and critical thinking, and it was suggested that arrangements should be made to improve students' intuition and logical reasoning skills in higher education. It is thought that a similar relationship exists between self-directed learning and emotional intelligence.

Determining the relationship between the self-directed learning skills of prospective teachers and their emotional intelligence and problem-solving skills could guide those concerned in the organization of programs at faculties of education, help prospective teachers in directing their learning processes, improve their learning skills, and encourage instructors to include activities for the development of emotional intelligence and problem-solving skills while planning the course process.

In the COVID-19 pandemic period, several studies have been carried out about the advantages provided by the self-directed learning skills of students (Mahlaba, 2020; Morris, 2021; Grande, et al., 2022), and the importance of self-directed learning has been emphasized. Similarly, with the influence of the constructivist approach and active learning, the emotions of learners have also become one of the topics that are prioritized. Affective readiness, namely learner emotions, that was introduced into the literature with the mastery learning model has shown its effect in a broad area with the concept of emotional intelligence. The skill of problem-solving is also one of the basic capacities that individuals should have at different levels of education and in informal education processes. It is believed that determining the relationship between self-directed learning skills, which are some of the most important skills that prospective teachers should have to become lifelong learners, and emotional intelligence and problem-solving skills that affect learning will contribute to studies in this field.

Moreover, the review of studies published on the dissertation directory of the Turkish Council of Higher Education at Ulakbim Tr-Dizin did not reveal any study that was conducted with prospective teachers and aimed to determine the relationship between self-directed learning and the concepts of emotional intelligence and problem-solving skills. Accordingly, this study is considered important. In this context, this study aims to examine the opinions of prospective teachers on self-directed learning skills based on different variables and reveal the predictive power of their problem-solving skills and emotional intelligence on their self-directed learning skills. For this purpose, the study seeks answers to the following research questions:

1- What are the self-directed learning skill levels of prospective teachers?

2- Is there a significant relationship between the self-directed learning skills of prospective teachers and their problem-solving skills and emotional intelligence?

3- To what extent and in what priority do the problem-solving skills and emotional intelligence of prospective teachers explain their self-directed learning skill levels?

METHOD

RESEARCH DESIGN

This is a quantitative study aiming to determine the self-directed learning skill levels of prospective teachers and reveal the predictive power of their problem-solving skills and emotional intelligence on their self-directed learning skills. Relational screening, a descriptive method, was used in this study. A survey was conducted to answer the first research question, and correlational research was carried out to answer the second and third questions.

DATA COLLECTION

The sample of the study consisted of 476 prospective teachers who were studying at the Faculty of Education and Sports Sciences of a university in the Central Anatolia Region of Turkey that trains teachers on a voluntary basis. No sample selection method was used to include the participants.

The distributions of the demographic characteristics of the participants are presented in Table 1.

Table 1. *Demographic Characteristics of the Participants*

		f	%
Departments	Preschool education	45	24
	English language education	26	14
	Turkish language education	34	18
	Social studies education	10	5
	Form teaching	19	10
	Primary-secondary school mathematics education	10	5
	Science education	11	6
	Physical education	28	15
	Psychological counseling and guidance	5	3
Gender	Female	141	75
	Male	47	25
Class Year	First year	86	46
	Second year	74	40
	Third year	16	8
	Fourth year	11	6

As seen in Table 1, 24% of the participants were prospective preschool teachers, 75% were women, and 46% were first-year students.

DATA COLLECTION PROCEDURES AND TOOLS

This study aimed to measure the predictive power of the problem-solving skills and emotional intelligence levels of prospective teachers on their self-directed learning skills. For this purpose, the “Self-Directed Learning Skills Scale” developed by Aşkın (2015), “the Problem-Solving Inventory” developed by Heppner and Peterson (1982) and adapted into Turkish by Şahin, Şahin and Heppner (1993), and the “Schutte Emotional Intelligence Scale” prepared by Schutte, Malouff, Hall, Haggerty, Cooper, Golden, and Dornheim (1998), revised by Austin, Saklofske, Huang and McKenney (2004), and adapted into Turkish by Tatar, Tok, and Saltukoğlu (2011) were used to collect data. Due to the COVID-19 pandemic, the scales were prepared in Google Forms, and students were asked to fill them in by sending a link to their classroom WhatsApp groups. Students who filled in the data collection forms with their official university e-mail addresses were first requested to fill in the personal information form, and with this form, their class years and departments were determined. The requirement of entry with their e-mail addresses prevented them from filling out the questionnaire more than once.

The "Self-Directed Learning Skills Scale" was developed by Aşkın (2015) to determine self-directed learning skill levels of university students. The 21-item five-point Likert-type scale consists of four dimensions (motivation, self-monitoring, self-control, and self-confidence). The values of the intervals in the scale are calculated according to the sequence width/number of groups (n-1/n) as (5-1)/5=0.80: "1.00- 1.80 Never," "1.81- 2.60 Rarely," "2.61- 3.40 Sometimes," "3.41- 4.20 Usually," and "4.21- 5.00 Always." The Cronbach's Alpha internal consistency coefficient of the scale was reported as 0.895 by Aşkın (2015). As a result of the exploratory factor analysis they conducted, Aşkın (2015) identified 4 factors with eigenvalues higher than 1 (motivation, self-monitoring, self-control, and self-confidence). These factors were determined to collectively explain 52.906% of the total variance in scale scores. The numbers of items in the dimensions of the scale were determined as 7, 5, 5, and 4 items for the respective dimensions stated above. The RMSEA value of the scale was reported as 0.069, which showed "acceptable fit" as a value below 0.08. The Cronbach's Alpha internal consistency coefficient calculated with the data obtained within the scope of this study was .906. In the confirmatory factor analysis that was carried out with the data of this study, the Keiser-Meyer-Olkin (KMO) statistic of the scale was determined as 0.851.

The Problem-Solving Inventory was developed by Heppner and Petersen in 1982 and adapted into Turkish by Şahin, Şahin, and Heppner (1993) by administering it to university students. The scale consists of 35 items (among which items 9, 22 and 29 are not included in scoring) and three factors (problem-solving confidence, approach-avoidance style, and personal control) (Şahin, Şahin and Heppner, 1993). It is a six-point Likert-type scale where higher scores indicate the respondent's self-perception of inadequacy about problem-solving. Taylan (1990) reported the test-retest reliability of the dimensions of the scale between .77 and .81. With the data collected in this study, the Cronbach's Alpha internal consistency coefficient of the scale was calculated as 0.836, whereas its KMO statistic was found as 0.806 in the confirmatory factor analysis.

The Schutte Emotional Intelligence Scale was designed by Schutte, Malouff, Hall, Haggerty, Cooper, Golden, and Dornheim (1998), revised by Austin, Saklofske, Huang, and McKenney (2004), and adapted into Turkish by Tatar, Tok, and Saltukoğlu (2011). The scale consists of 41 items and three factors (optimism/mood regulation, utilization of emotions, and appraisal of emotions). It is a five-point Likert-type scale. The Cronbach's Alpha internal consistency coefficient of the Turkish version of the scale was reported as 0.82. The internal consistency coefficients of the factors of the scale were reported as 0.75 for optimism/mood regulation, 0.39 for utilization of emotions, and 0.76 for appraisal of emotions. With the data collected in this study, the Cronbach's Alpha internal consistency coefficient of the scale was determined as 0.874, while its KMO value was 0.859.

DATA ANALYSIS

Depending on the normality test results in the data analysis, descriptive statistics, Pearson's correlation coefficient, and multiple regression analysis were used. The self-directed learning skill levels of the participants were determined by calculating frequencies and percentages as descriptive statistics. These levels were interpreted based on the interval value put forward by Aşkın (2015). Correlation coefficients were calculated to determine the relationships between self-directed learning and the variables of problem-solving and emotional intelligence. Before the multiple regression analysis, it was revealed that the data showed normal distribution, the relationships between self-directed learning skills and the variables of emotional intelligence and problem-solving levels were linear, and the relationship between emotional intelligence and problem-solving levels was weak ($r= 0.139$, $p<0.001$). The regression analysis defined self-directed learning skills as the dependent variable and problem-solving and emotional intelligence as the independent variables.

FINDINGS

The frequency and percentage values of the Self-Directed Learning Skills Scale scores of the participants are presented in Table 2:

Table 2. Descriptive Statistics on Self-Directed Learning Skills

	Always	Often	Sometimes	Rarely	Never	Mean
	f %	f %	f %	f %	f %	f %
1. When I encounter a problem, I identify what I need to learn to solve that problem.	179 37.6	264 55.5	30 6.3	2 0.4	1 0.2	4.31
2. A new situation encountered is an opportunity for learning.	260 54.6	180 37.8	35 7.4	-	1 0.2	4.47
3. I clearly state my learning purpose.	179 37.6	229 48.1	63 13.2	4 0.8	1 0.2	4.23
4. I am open to learning.	298 62.6	151 31.7	26 5.5	-	1 0.2	4.57
5. The important thing is not that others see me as sufficient but that I find myself sufficient.	285 59.9	138 29.0	47 9.9	5 1.1	1 0.2	4.48
6. I believe that time spent on learning is not wasted.	314 66.0	139 29.2	20 4.2	2 0.4	1 0.2	4.61
7. At the end of the learning process, I check my level of achievement of my goals.	157 33.0	250 52.5	58 12.2	10 2.1	1 0.2	4.17
8. I think learning is a need.	330 69.3	133 27.9	12 2.5	-	1 0.2	4.67
9. I review my learning process regularly.	6 20.2	211 44.3	155 32.6	13 2.7	1 0.2	3.82
10. I evaluate my learning performance.	131 27.5	216 45.4	118 24.8	10 2.1	1 0.2	3.99
11. It is my responsibility to identify my learning deficiencies.	255 53.6	192 40.3	28 5.9	-	1 0.2	4.48
12. I complete my learning process in a planned way.	99 20.8	220 46.2	129 27.1	25 5.3	2 0.4	3.82
13. Learning something new is exciting.	282 59.2	161 33.8	29 6.1	3 0.6	1 0.2	4.52
14. I systematically monitor my learning process.	81 17.0	210 44.1	147 30.9	34 7.1	3 0.6	3.70
15. Self-criticism helps me learn better.	257 54.0	166 34.9	37 7.8	13 2.7	2 0.4	4.40
16. I benefit from different learning strategies (methods).	150 31.5	204 42.2	113 23.7	11 2.3	1 0.2	4.03
17. I want my learning process to continue throughout my life.	318 66.8	111 23.3	36 7.6	8 1.7	2 0.4	4.55
18. I identify my learning needs.	194 40.8	222 46.6	55 11.6	4 0.8	1 0.2	4.28
19. I am responsible for my learning decisions.	299 62.8	148 31.1	27 5.7	1 0.2	1 0.2	4.57
20. I manage my learning process effectively.	116 24.4	250 52.5	103 21.6	6 1.3	1 0.2	4.00
21. I enjoy learning.	265 55.7	189 39.7	21 4.4	-	1 0.2	4.51
MEAN			4.29			

The mean Self-Directed Learning Skills Scale score of the participants was 4.29 out of 5. This value was in the "Always" range. In other words, the self-directed learning skill levels of the participants were high.

The highest mean scores of the participants was in the item "I think learning is a need" as 4.67, followed by the item "I believe that the time spent on learning is not wasted" with a mean value of 4.61 and the items "I am open to learning" and "I am responsible for my learning decisions" with a mean value of 4.57.

Of all items, the participants had the lowest mean score in the item "I systematically monitor my learning process" as 3.70, followed by the item "I evaluate my learning performance" with a mean value of 3.99, and the items "I regularly review my learning process" and "I complete my learning process in a planned way" with a mean value of 3.82.

The means scores of the participants in the dimensions of the scale are presented in Table 3.:

Table 3. *Descriptive Statistics Regarding the Dimensions of the "Self-Directed Learning Skills Scale"*

Dimensions	Mean	Standard deviation
Motivation	4.557	0.174
Self-Monitoring	4.196	0.6984
Self-Control	3.874	0.797
Self-Confidence	4.482	0.678

The participants had the highest mean score in the "motivation" dimension of the Self-Directed Learning Skills Scale (4.557), while they had the lowest mean score in the "self-control" dimension (3.874).

An answer to the second research question, "Is there a significant relationship between the self-directed learning skills of prospective teachers and their problem-solving skills and emotional intelligence?" was sought. Tables 4 and 5 present the results showing the relationships of self-directed learning skills with problem-solving skills and emotional intelligence.

Table 4. *Correlation between Self-Directed Learning Skills and Problem-Solving Skills*

		Self-directed learning	Problem solving
Self-directed learning	Pearson's Correlation	1	.334**
	Sig. (2-tailed)		.000
	N	476	476
Problem solving	Pearson's correlation	.334**	1
	Sig. (2-tailed)	.000	
	N	476	476
** p<.01			

As seen in Table 4, there was a positive and significant relationship between self-directed learning skills and problem-solving skills ($r=0.334$, $p<0.01$).

Table 5. *Correlation between Self-Directed Learning Skills and Emotional Intelligence*

		Self-directed learning	Emotional intelligence
Self-directed learning	Pearson's correlation	1	0.414**
	Sig. (2-tailed)		0.000
	N	476	476
Emotional intelligence	Pearson's correlation	0.414**	1
	Sig. (2-tailed)	0.000	
	N	476	476
**p<.01			

Table 5 shows that there was a positive and significant relationship between self-directed learning skills and emotional intelligence (r=0.414, p<0.01).

An answer was sought to the third research question, "To what extent and in what priority do the problem-solving skills and emotional intelligence of prospective teachers explain their self-directed learning skill levels?"

Table 6. *Multiple Regression Analysis Results for Self-Directed Learning Skills*

Model Summary				
Model	R	R-Squared	Adjusted R-Squared	Std. Error of the Estimate
1	0.499[a]	0.249	0.246	0.31619
a. Predictors: (Constant), problem-solving mean, emotional intelligence mean				

In Table 6, it is seen that problem-solving and emotional intelligence together explained 25% of the total variance in self-directed learning skills (R=0.499, R^2 =0.249) ($F_{(2\text{-}473)}$=78.573, p<0.01). The rest of the change occurred for other reasons.

Table 7. *Multiple Regression Analysis Results for Self-Directed Learning Skills*

Coefficients[a]											
		Unstandardized coefficients		Standardized coefficients			Correlations			Collinearity statistics	
Model		B	Std. error	Beta	t	Sig.	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	0.883	0.281		3.145	0.002					
	emotional intelligence mean	0.781	0.084	0.375	9.317	0.000	0.414	0.394	0.371	0.981	1.020
	problem-solving mean	0.304	0.043	0.282	7.005	0.000	0.334	0.307	0.279	0.981	1.020
a. Dependent Variable: self-directed learning skills mean											

According to the standardized regression coefficients, the order of significance of the predictor variables for self-directed learning was emotional intelligence (β=0.375) and problem-solving (β=0.282). Considering the significance tests of the regression coefficients, emotional intelligence and problem-solving skills were significant predictors of self-directed learning skills. Additionally, according to the results of the regression analysis, the regression equation predicting self-directed learning skills was as follows:

Self-directed learning level= (0.781×Emotional intelligence score) + (0.304×Problem solving score) + 0.883.

DISCUSSION, CONCLUSION AND IMPLICATIONS

This study aimed to determine the self-directed learning skill levels of prospective teachers, the relationships between their self-directed learning levels and their problem-solving and emotional intelligence levels, and to what extent and in what priority their problem-solving skills and emotional intelligence explained their self-directed learning skill levels. The results suggested that the participants had high self-directed learning skill levels. In the Self-Directed Learning Skills Scale, the participants had the highest mean score in the motivation dimension, followed by the self-confidence, self-monitoring, and self-control dimensions, while the relationships of self-directed learning skills with emotional intelligence and problem-solving skills were strong. Problem-solving skill levels and emotional intelligence levels together explained 25% of the total variance in self-directed learning skill levels, and according to the standardized regression coefficients, emotional intelligence was more effective on self-directed learning skills than problem-solving skills were.

The self-directed learning skill levels of the participants of this study were found high. In other words, the participants thought that they had high levels of self-directed learning skills. In various studies conducted in Turkey (Aşkın Tekkol & Demirel, 2016; Aydar, 2021; Çırak, 2021; Recepoğlu, 2021; Yılmazsoy & Kahraman, 2019), it has been seen that prospective teachers think their self-directed learning skill levels are high.

It was observed that the participants obtained the highest mean score in the Self-Directed Learning Skills Scale in the motivation dimension, followed by the self-confidence, self-monitoring, and self-control dimensions, respectively. This ranking has been reported the same in studies examining the self-directed learning skills of prospective music teachers (Çırak, 2021), prospective social studies teachers (Recepoğlu, 2021), and prospective early childhood teachers (Aydar, 2021). Aşkın Tekkol & Demirel (2016) also determined that prospective teachers displayed the desired behaviors in self-management in the dimensions of motivation, persistence (insistence in learning), and taking responsibility for learning. These findings may be interpreted as that prospective teachers are willing to take action towards their goal and reach the goal, but they are weaker in self-control, which can be defined as controlling behavior and emotions in learning.

In this study, it was observed that the participants had the highest mean score in the item "I think learning is a need." This finding coincided with the item in which prospective teachers had the highest mean score in the study conducted by Aydar (2021). The findings of studies conducted with prospective teachers in four universities in Turkey (Çukurova, Kocaeli, Fırat, and Kırıkkale Universities) also revealed that prospective teachers think that learning is a need.

Among the scores of the participants in this study in the Self-Directed Learning Skills Scale, the lowest mean scores were obtained in the items "I systematically monitor my learning process," "I evaluate my learning performance," "I regularly review my learning process," and "I complete my learning process in a planned way." Aşkın (2015) also observed that the item that university students gave the lowest score on the same scale was "I systematically monitor my learning process," followed by the item "I regularly review my learning process." As a result of the study conducted by Kılıç and Sökmen (2012), in which they examined the self-directed learning skills of prospective teachers, it was concluded that the dimension in which the prospective teachers had the lowest mean score was the dimension of "self-control."

In this study, positive significant relationships were identified between self-directed learning skills and the variables of emotional intelligence and problem-solving skills. Hwang and Oh (2021) and Kim and Shim (2018) also reported significant relationships between self-directed learning and problem-solving skills in nurses. Zhoc, Chung, and King (2018) stated that emotional intelligence is effective in self-directed learning because it can regulate one's own emotions and produce positive emotions. The relevant research results showed that emotional intelligence has a strong effect on self-directed learning, and students who are more emotionally intelligent are more self-directed. The findings obtained Kayıhan (2017) also indicated a positive and significant relationship between the self-directed learning skills of university students and their emotional intelligence levels.

In this study, it was observed that problem-solving skill levels and emotional intelligence levels together explained a part of the total variation in self-directed learning skill levels. In other words, the majority of the variation in self-directed learning skills was found to be caused by other factors. It will be beneficial to conduct studies that will reveal what these other factors are. For instance, Edmondson, Boyer, and Artis (2012) concluded that students with high self-directed learning skill levels are more creative, curious, show higher performance in the classroom, and are hopeful for the future. By making use of this finding, other factors affecting self-directed learning can be analyzed.

Based on these results, in higher education, it could be beneficial to organize activities that enable students to study by monitoring and controlling their learning and organize the course teaching process in a way that supports self-monitoring and self-control.

The scores of the participants of this study in the Self-Directed Learning Skills scale were found to be high, but it could be beneficial for prospective teachers to receive training on what self-directed learning is and how it is used more scientifically. It could be ensured that prospective teachers receive training on learning contracts, samples, and individual study methods and techniques to enable them to use these elements when they become teachers and be a model for their learners.

In higher education, activities and case studies should be used to develop problem-solving skills and emotional intelligence in the course process.

To determine the factors that are effective on self-directed learning skills, it will be useful to conduct new studies covering state and private universities (or non-profit foundation universities in Turkey) in higher education, as well as the demographic characteristics of the families of prospective teachers. Studies that will also employ qualitative research methods and help us understand the topic in more depth may also be carried out. This study was performed with prospective teachers who voluntarily agreed to participate and in a small sample. More qualified studies to be conducted with broader samples will be beneficial.

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The Effect of Social-Emotional Learning Program on Social-Emotional Skills, Academic Achievement and Classroom Climate

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Abstract

This research aimed to examine the effects of “You Can Do It! Education” and “Emotional and Social Development” which are social-emotional learning programs, on fourth-grade students’ development of social-emotional skills, academic achievement, and perceptions of the classroom climate in Turkey. A mixed methods research design was used to investigate the effectiveness of the programs. Fourth-grade students were randomly assigned to the groups. Two classes in YCDI! Education and ESDP are taught each week. Thus, each program was applied for 8 weeks in the experimental groups. Besides, elementary teachers conducted their regular Turkish lessons for the control and experimental groups. Reflective diaries were kept and observations were made by the researcher during the experiment to explain the findings in detail. The results indicate that You Can Do It! Education program had a positive effect on students’ social-emotional skills, academic achievement, and classroom climate perceptions in contrast to the Emotional and Social Development Program. Findings will contribute to the development of elementary students' social-emotional learning in national and international contexts.

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INTRODUCTION

Social-emotional skills are an important aspect of human life because such skills facilitate not only relationships with others but also our ability to manage our own emotions (Lopes, Salovey, & Straus, 2003). Social-emotional learning refers to the development of social-emotional skills that enable children to learn effectively (Weissberg, Resnik, Payton, & O'Brien, 2003). The Collaborative for Academic, Social, and Emotional Learning (CASEL, 2013) defined the SEL concept as self-awareness, self-management, social awareness, relationship skills, and responsible decision making. Research has shown that social-emotional learning programs effectively reduce problematic behaviors, increase active participation and academic achievement at all education levels, from preschool through high school (Diekstra, 2008; Greenberg et al., 2003; Weissberg, Kumpfer, & Seligman, 2003; Zins Bloodworth, Weissberg and Walberg, 2004). Such programs help students curb unfavorable behaviors while improving their social-emotional skills and enabling academic achievement (Adelman & Taylor, 2000; Greenberg et al., 2003; Payton et al., 2008). These findings demonstrate that social-emotional skills are of great importance in the learning-teaching process (Illinois Early Learning and Development Standards, 2013; Senemoğlu, 2011). Although the development of social-emotional skills is considered important in the preschool period as well as in other educational stages, many children seem to enter into elementary schools without having acquired these skills (McClelland, Morrison, & Holmes, 2000; Peth-Pierce, 2000; Raver & Knitzer, 2002). They have difficulty in expressing themselves, controlling their emotions (e.g. anger), listening, sharing their belongings, and cooperating (Türnüklü, 2004). This leads to a decrease in their academic and social achievements and an increase in violence and negative habits, conflicts between individuals as well as behavioral disorders (Baydan, 2010; Türnüklü, 2004). Research in Turkey has revealed the presence of undesirable behaviors that frequently occur in schools, such as communication problems between students, conflict, physical violence tendencies, verbal violence, vandalism, psychological violence, social nonconformity, alcohol and substance abuse, and disinterest in classes (Eken, 2014; Mutluoğlu & Bulut–Serin, 2010; Öğülmüş, 2006; Türnüklü, 2004; Uğurlu, Doğan, Şofortakımcı, Ay, & Zorlu, 2013). These problems stem in part from schools' lack of focus on a program that addresses social-emotional skills in a systematic manner (Cohen, 1999; Türnüklü, 2004). Today, there are many social-emotional learning programs aimed at improving children's social-emotional skills and making them happy and successful individuals, such as You Can Do It! Education (Bernard, 2008, 2013; Vernon & Bernard, 2019; Yamamoto, Matsumoto & Bernard, 2017), Responsive Classroom (Rimm-Kaufman et al., 2004), I Can Problem-Solve (Shure, 2001), Head Start (Hambidge et al., 1976) and Strong Start (Berry-Krazmien and Torres-Fernández, 2007). An examination of relevant literature indicated that research in Turkey mostly focuses on the cognitive levels of students while overlooking their social-emotional development and well-being. There are a limited number of studies on the social-emotional development of elementary school students in Turkey (Baydan, 2010; Diken et al., 2011; Küçükkaragöz & Erdoğan, 2017), which indicates that researchers have not adequately investigated students' social-emotional development (Türnüklü, 2004). You Can Do It! Education (YCDI!) program has a focus on teaching social-emotional skills (confidence, persistence, organization, getting along, resilience) that contribute to student wellbeing and achievement in language acquisition. In various countries, YCDI! Education has proved to be an effective program that focuses on students' social-emotional capacities, motivations, and academic achievement in language acquisition, science, history, and math (Ashdown & Bernard, 2012; Bernard, 2006; Bernard & Walton, 2011; Brown, 1999; Pina, 1996). Due to an awareness of the importance of individual life and the widespread use of social-emotional learning programs in schools in other countries, Turkey began to recognize social-emotional learning. Thus, the Emotional and Social Development Program (ESDP) is incorporated into elementary and secondary schools in Turkey as a selective course (Board of Education, 2012). This program is of great importance since it is the first social-emotional learning program incorporated into schools by the Board of Education. This curriculum has been developed previously for gifted students and its effectiveness has not been evaluated for regular students. Accordingly, implementing this curriculum for regular students will provide us with information about the effectiveness of the curriculum for the first time. Besides, this study also examines the influence of the YCDI! Education program (Bernard, 2008) and ESDP on elementary students. YCDI! Education can contribute to the development of academic skills (Bernard, 2017) as well as social-emotional learning wellbeing (Bernard & Walton, 2011). This feature of the program differs from other social-emotional learning programs. In this study, the effects of the development of social-emotional skills on academic achievement for reading comprehension skills are analyzed. Many studies have indicated the relationship between social-emotional skills and language skills (Bracket, Rivers, Reyes and Salovey, 2012; Doyle ve Bramwell, 2006; Foster, Lambert, Abbott-Shim, McCarty ve Franze, 2005; Jones, Brown ve Hoglund, 2010; Jones, Brown ve Aber, 2011; Lonigan, Bloomfield, Anthony, Bacon, Phillips ve Samwel, 1999; Rivers ve Brackett, 2011; Wilson, 2015). Examining closely, these studies revealed that social-emotional learning programs are effective on language development. Based on this research, investigating the influence of social-emotional learning programs on students' reading achievement is of great importance.

Researchers also indicated that social-emotional learning programs provide a positive classroom climate (Aviles, Anderson, & Davila, 2006; Battistich, Schaps, Watson, & Solomon, 1996; Cohen, 1999; Collie, Shapka & Perry, 2012; Denham, 2006; Greenberg et al. 2003; Klein, 2002; Linares et al. 2005; Lopes & Salovey, 2004; Wang, Haertel & Walberg, 1993). Accordingly, this study also examined the effects of social-emotional learning programs on students' perceptions of classroom climate. In this research YCDI!Education was adapted into to Turkish language and culture for the first time and its effectiveness was investigated. Also, the effectiveness of ESDP was evaluated for regular students. Besides, this research examines the relationship between social-emotional skills and classroom climate for the first time in Turkey. Based on these explanations, the aims of this research were determined as follows:

AIMS OF THE STUDY

1. To explore whether YCDI! Education and ESDP effect fourth-grade students' social-emotional skills
2. To explore whether YCDI! Education and ESDP effect fourth-grade students' academic achievement
3. To explore whether YCDI! Education and ESDP effect fourth-grade students' perceptions of classroom climate

METHOD

RESEARCH DESIGN

For this study, the data collection process involved a mixed-methods approach consisting of both qualitative and quantitative research data collection techniques (Creswell, 2014; Creswell & Clark, 2011; Tashakkori & Teddlie, 1998). The research was designed in a nested mixed method. The nested mixed-method design involves more than one type of data (Creswell & Clark, 2011). It allows researchers to test the interventions or programs applied (Creswell, 2014). Regarding the research aims, a nested mixed method design is considered appropriate for this research. An experimental research design was applied in this study. Besides, reflective diaries were also administered to understand the implementation of the programs in depth. The experimental phase and the observation process are further described in the procedure.

PROCEDURE

A pretest-posttest control group design was used in this study. This experimental design is frequently used in education and psychology. It consists of at least two groups, one for the experimental and one for the control group (Büyüköztürk et al. 2009; Büyüköztürk, 2011; Howitt and

Cramer, 2010; Karasar, 2006). This design provides statistically strong findings to the researchers in testing the effect of the experiment on the dependent variable. It is a powerful design that allows interpreting the findings in the context of cause and effect (Büyüköztürk, 2011). For this reason, this design was administered in this research. Accordingly, the research was carried out in three different fourth grade classes of a school in Çanakkale, Turkey. After selecting the school, students were assigned to one of the three groups: YCDI! Education, ESDP, and a control group. In experimental studies to ensure internal validity, the sample should be selected randomly (Fraenkel and Wallen, 2006). However, in this study non-random sampling was used. Since students were previously assigned to the classes by the school administration, these classes were assigned as experimental and control groups. But, before identifying the groups, the information about students' achievements, abilities, and attitudes was obtained through meetings with the school principal and teachers. Thus, three classrooms that are similar in terms of students' achievements, abilities, and attitudes were identified as Experimental Group I (EG I), Experimental Group II (EG II), and control groups. Accordingly, the differences in groups were reduced. The researchers applied a pre-and post-test group design in this study to examine the effects of YCDI! Education and the ESDP on students' social-emotional skills, academic achievement, and classroom climate perceptions. Two classes in YCDI! and ESDP are taught each week. The duration of each class was 40 minutes. Thus, each program was applied for 8 weeks (16 lessons) in the experimental groups. However, for the control group, teachers conducted their regular Turkish lessons. Detailed information about the experimental procedure can be seen in Table 1.

Table 1. *Experimental Procedure*

	EG I	EG II	Control Group
SEL Program	YCDI! Education	EDSP	None
Implementer	Researcher	Researcher	-
Duration	8 weeks	8 weeks	-
Turkish lessons implementer	Elementary Teacher	Elementary Teacher	Elementary Teacher
Observation weeks of Turkish lessons	2nd, 5^{th,} and 8th	2nd, 5^{th,} and 8th	2nd, 5^{th,} and 8th

Experimental Group I (EG-I) consisted of 12 female students and 15 male students, Experimental Group II (EG-II) consisted of 14 female students and 14 male students and the Control Group consisted of 10 female students and 15 male students. Elementary teachers instructed Turkish language classes, and one of the researchers taught the social-emotional learning programs. To prevent teachers from applying different practices in the Turkish classroom, the same daily plan was implemented. The teachers and researchers planned the Turkish lessons together. To determine students' social-emotional learning levels, the Social-Emotional Learning Skills Scale, the What Is Happening in This Class? scale and the Turkish Course Achievement Test were applied in all of the groups before and after the experimental phase.

During the experimental procedure, the researchers carried out three observations of the Turkish lessons for each experimental and control group during the second, fifth, and eighth week of the experimental process. Thus, the experimental and control groups were monitored to determine whether the teachers were teaching the same subjects using the same teaching methods for the Turkish lessons. The researchers observed the teachers' and students' activities and behaviors as non-participating observers. To prevent teachers and students from being affected by the researchers during non-participating observations, the researchers met with them several times before the experimental phase. The researchers explained to the participants that their names would not be identified and that the information the researchers gathered through the observations would only be used for research purposes. The first part of the observation form was structured to monitor the co-ordination among the experimental groups, the events realized during the lessons, the time spent on the activities, and the role of the students. The second part involved the contents presented in the social-emotional learning lessons that were reflected in the Turkish lesson.

SAMPLE

The participants constituted fourth-grade elementary students in Çanakkale/Turkey during the fall semester of the 2015- 2016 academic year. One school participated in the research. The experimental and control groups were randomly assigned.

DATA COLLECTION

READING ACHIEVEMENT TEST

To investigate and gain a better understanding of the comprehension skills of fourth-grade students, the researchers used an achievement test developed by the author. The achievement test included 21 items with four options. The item analysis method was applied to ensure the success of the test. The internal consistency coefficient of KR-20 for 21 items was calculated as 0.880. This finding indicated that the instrument was reliable (Fraenkel & Wallen, 2005).

SOCIAL-EMOTIONAL LEARNING SKILLS SCALE

In this study, the researchers used the Social-Emotional Learning Skills Scale, developed by the authors, to determine the social-emotional skills of third and fourth graders. Exploratory and confirmatory factor analysis results revealed a valid and reliable 27-item scale. The sub-factors are relationships among friends, success, self-management, perceptions of friendship, impulse control, self-confidence, and persistence. Goodness of fit indices of the scale are $x^2 = 501.49$, df = 303, RMSEA= 0.038, NFI = 0.92, NNFI = 0.96, CFI = 0.97, GFI = 0.92 and AGFI = 0.90. These indices revealed that the scale showed a good and excellent level of fit. The Cronbach's alpha reliability coefficient of the Social-Emotional Learning Skills Scale is .856 for the entire scale.

WHAT IS HAPPENING IN THIS CLASS? SCALE

This scale, which was developed by Fraser, Fisher, and McRobbie (1996) and adapted by authors to apply to Turkish language and culture, aims to determine how students perceive the classroom climate in a learning environment. Based on the results of the confirmatory factor analysis, the scale's goodness of fit indices are $x^2 = 2883.90$, RMSEA= 0.05, NFI = 0.92, NNFI = 0.96, CFI = 0.96, GFI = 0.81 and AGFI = 0.79. These indices revealed that the scale showed a good and excellent level of fit. Cronbach's alpha coefficient was applied for the reliability of the scale. The Cronbach's alpha was calculated as being between .75 and .93.

REFLECTIVE DIARIES

A reflective diary is a means to record a researcher's experience during an experimental process. The elementary purpose of reflective diaries is to assess one's teaching practices, and diary entries typically focus on a researcher's individual experiences and subjective judgments. Reflective elements that are important for social-emotional learning have been identified based on the purpose of the research. Accordingly, data collected through the reflective diaries were used to explain the data derived from the experiment in depth.

OBSERVATION FORM

Based on the purpose of this research, simultaneous processing of the same subjects in the Turkish program in the experimental and control groups participating in the research was important in terms of controlling for the experimental application. In addition, the researchers examined the Turkish program in terms of applying the lesson plans of the classroom teachers and the role of the teacher and the students in the classroom. Specifically, the researchers observed the similarities and differences between the groups. Their application of observation served as a two-dimensional structure that dealt with the technical and content properties of the program. The first part of the observation form was structured to monitor the co-ordination among the experimental groups, the activities carried out in the lessons, the time taken for the activities, and the role of the students. In the second part, the contents presented in the social-emotional learning lessons were reflected in the Turkish program, and the student's reactions to the social-emotional items were discussed.

DATA ANALYSIS

The researchers examined the normality of the data set to determine whether statistical tests could be used. Therefore, the skewness and kurtosis coefficients of the data obtained from the pre-test and post-test were calculated, histogram and Q-Q graphs were examined and the Kolmogorov-Smirnov test was applied to the data. As a result of the analyses performed, the researchers found that a normal distribution of the data set existed. Thus, parametric tests were also used in this research. What Is Happening in This Class Scale, the Social-emotional Learning Skills Scale, and the Turkish Course Achievement Test were used as pre-tests to determine the levels of the groups before beginning the experimental phase. A variance analysis was applied to the data to determine whether the groups had similar pre-test scores. The findings showed that there was no significant difference between the pre-test scores of the groups. Dependent two-sample t-tests were applied to compare the pre-test and post-test scores of the groups.

The researchers applied deductive content analysis to examine the data obtained from the reflective diaries and observations. This type of analysis implies that researchers should examine the concepts they want to see in the available data (Patton, 2002). The findings obtained from the experimental phase are supported by reflective diaries. Regarding the observation data, elementary codes and categories were developed according to the purpose of the research. In the first part, observations were compared to determine if the texts they worked on in the Turkish program in the experimental and control groups were the same. In addition, the groups were compared, taking into account the extent to which the classroom teachers supported participation in the class and the interest of the students in the classroom. In the second part of the analysis, the data obtained from the observations were interpreted in consideration of how the social-emotional skills are applied in a Turkish lesson in terms of the teacher and students.

FINDINGS/RESULTS

FINDINGS RELATED TO SOCIAL-EMOTIONAL LEARNING SKILLS

A dependent two-sample t-test was conducted to determine whether there was a significant difference between the pre-test and post-test groups' Social–Emotional Learning Skills Scale scores (Table 2).

Table 2. *Dependent Two Sample t-Test Results for Social-Emotional Learning Skills Scale*

		YCDI!						EDSP						Control					
		N	X	Sd.	df	t	p	N	X	Sd.	df	t	p	N	X	Sd.	df	t	p
Relationship	Pre-test	27	2.28	.37	26	-.447	.658	28	2.93	.11	27	3.091	.005*	25	2.66	.18	24	4.766	.000*
	Post-test	27	2.32	.26				28	2.46	.80				25	2.34	.28			
Success	Pre-test	27	2.39	.46	26	3.999	.000*	28	2.96	.10	27	3.999	.002*	25	2.77	.18	24	1.141	.265
	Post-test	27	2.86	.23				28	2.70	.38				25	2.69	.33			
Self-management	Pre-test	27	2.15	.31	26	5.514	.000*	28	2.85	.20	27	4.585	.000*	25	2.68	.26	24	-.102	.920
	Post-test	27	2.64	.28				28	2.52	.36				25	2.69	.39			
Perception of Friendship	Pre-test	27	2.20	.53	26	3.651	.001*	28	2.89	.15	27	3.116	.004*	25	2.58	.32	24	.935	.359
	Post-test	27	2.61	.32				28	2.65	.36				25	2.47	.43			
Impulse Control	Pre-test	27	2.15	.55	26	3.066	.005*	28	2.83	.33	27	2.837	.009*	25	2.67	.31	24	.747	.462
	Post-test	27	2.62	.49				28	2.50	.48				25	2.56	.59			
Self-confidence	Pre-test	27	1.91	.36	26	2.651	.013*	28	2.53	.36	27	2.485	.019*	25	2.15	.39	24	-.503	.619
	Post-test	27	2.24	.43				28	2.25	.44				25	2.21	.345			
Persistence	Pre-test	27	2.10	.51	26	3.750	.001*	28	2.83	.21	27	3.622	.001*	25	2.57	.28	24	.000	.999
	Post-test	27	2.56	.34				28	2.45	.48				25	2.57	.22			
Social-Emotional Learning Skills Scale	Pre-test	27	2.19	.25	26	-3.962	.001*	28	2.85	.08	27	.748	.461	25	2.60	.06	24	.765	.452
	Post-test	27	2.40	.19				28	2.81	.28				25	2.56	.23			

As exhibited in Table 2, a significant difference was observed between the means of the pre-test scores and the post-test scores of YCDI! [t(26)= -3.962, p<05]. The findings from the t-test based on the responses of YCDI! to the sub-factors of the Social-emotional Learning Skills Scale are as follows: success, [t (26) = -3.999, p <0,05] self-management [t (26) = -5.514, p <0.05] perception of friendship [t (26) = -3.651 p < 0.05] and impulse control [t (26) = -3.066, p < 0.05]. These findings also show a significant difference. However, a close examination of the findings revealed that the difference is found in favor of the pre-test. Self-confidence shows that there is a significant difference between the pre-test and post-test scores based on the result of [t (26) = -2.651, p <0.05] as well as persistence [t (26) = -3.750, p <0.05]. Regarding the reflective diaries, it is noteworthy that the students in YCDI! had problems with impulse control during the first week. Findings from the reflective diaries also showed that while the students in YCDI! noted that they did not have the right to speak in the first weeks and they did not want to be criticized, they showed signs of being angry and also cried. However, in the following weeks, this behavior considerably lessened. In addition to these findings, when the findings obtained by the researcher from the reflective diaries are evaluated, it is noteworthy that the students in the Experimental I group had problems with impulse control in the first weeks. For example, it was observed that students resorted to verbal violence and mocked each other when another student intervened while a student was speaking. However, in the following weeks, verbal violence or mockery was rarely encountered, as they became conscious of respecting different opinions. This finding seems to support the finding that the impulse control skill obtained as a result of the experimental application increased. This indicated that findings support the results of the self-management skill, which expresses that the individual controls the emotions, thoughts, and behaviors among the sub-factors of the Social-Emotional Learning Skills Scale of YCDI!. Overall, YCDI! Education contributes to the development of the social-emotional skills of the students in EG-I in many dimensions. There is no significant difference found between the pre-test post-test of experimental group II regarding the Social-Emotional Learning Skills Scale [t(27)=.748, p<05]. This shows that the ESDP did not affect school students' development of social-emotional skills. Findings from the reflective diaries also supported the problem of verbal violence, ridicule, and annoyance in the classroom. For example, during the programs of the experimental groups, the findings demonstrated that the students were impatient and intolerant towards each other. Accordingly, when the findings of the Social-Emotional Learning Skills Scale of ESDP were examined based on the sub-factors of impulse control and relationship among friends, it became apparent that these skills were not sufficiently developed because of the experiment. When reviewing the findings, no significant difference was found between the mean of the pre-test scores of the control group and the mean of the post-test scores for the control group (t(24)=.765, p<05). The observation data revealed that YCDI! had a significant increase in-class participation and in self-expression behaviors when compared to the other groups. Besides, although during the first two observations, a student in different friend groups did not welcome students from other friend groups, their behavior changed in the following weeks in YCDI! Also, students in the YCDI! group started to use more positive language during communication with friends and the teacher.

FINDINGS RELATED TO ACADEMIC ACHIEVEMENT

Findings obtained as a means to answer the third research question are presented in this part of the research. A dependent two-sample t-test was applied to the scale to determine whether a significant difference existed between the pre-test and post-test scores obtained from the Reading Achievement Test of YCDI!, ESDP, and the control group (Table 3).

Table 3. *Dependent Two-Sample t-Test Results for Reading Achievement Test*

	YCDI!						ESDP						Control					
	N	X	Sd.	df	t	p	N	X	Sd.	df	t	p	N	X	Sd.	df	t	p
Pre-test	27	10.77	4.40	26	-2.41	.003*	28	15.25	3.60	27	-.485	.632	25	12.72	3.28	24	-.986	.334
Post-test	27	12.85	4.27				28	15.50	3.31				25	13.64	4.04			

The findings demonstrated a significant difference between the pre-test and post-test scores of YCDI! [t(26) = -2.410, p <0.05]. This indicated the reading achievements of the students in YCDI! significantly increased. As the data in Table 3 illustrated, the researchers did not find a significant difference between the pre-test and post-test scores of ESDP [t(27) -.485, p <0.05] and the control group [t(24) = -.986, p <0.05]. Based on the observations, the programs in YCDI!, ESDP, and the control group were very similar to each other in terms of the practice of the program. In this respect, it was determined that the practice of the program plan did not affect the data obtained from the experimental groups concerning academic achievement because of the experiment.

FINDINGS RELATED TO CLASSROOM CLIMATE PERCEPTIONS

The researchers performed a dependent two-sample t-test to determine whether a significant difference existed between the pre-test and post-test scores obtained from YCDI!, ESDP, and the control group for the What Is Happening in This Class? scale (as shown in Table 4).

When examining the findings, the researchers observed a significant difference between the pre-test and post-test scores of the students in YCDI! [t (26) = - 3.122, p <0,05]. In addition, the findings regarding the subscales of the What Is Happening in This Class Scale indicated that there were no significant differences between the teachers' support [t(26) = 1.141, p <0.05] and participation [t(26) = -.102, p <0.05]. However, a significant difference was evident in student cohesiveness [t (26)=-2.551, p<0.05]; investigation (t(26)=.-3.116, p<0.05); task orientation (t(26)=2.701, p<0.05); cooperation [t(26)=-3.523, p<0.05]; and equity [t(26)=-2.393, p<0.05]. In addition to these findings obtained from the experiment, when the findings in the reflective diaries were examined, the researchers assessed the demands of the students in YCDI! to participate in classes and activities had increased significantly since the first weeks. Reflective diaries revealed that students are willing to participate in lessons actively in the experimental group I. However, as Table 4 illustrates, no significant difference existed between the pre-test and post-test scores of ESDP [t(27) = -1.499, p <0.05]. Similarly, there was no significant difference between the pre-test and post-test scores of the control group [t(24) = - 2.644, p <0.05]. This finding indicated that the classroom climate perceptions of the students in ESDP and the control group did not change. Moreover, when reviewing the reflective diaries, the researchers found that the students in ESDP did not express a willingness to participate in the activities, did not participate in the activities, and did not cooperate with the majority of the other students participating in the activities.

Table 4. *Dependent Two Sample t-Test Results for What is Happening in This Class? Scale*

		YCDI!						ESDP						Control					
		N	X	Ss.	Sd.	t	p	N	X	Ss.	Sd.	t	p	N	X	Ss.	Sd.	t	p
Student Cohesiveness	Prestest	27	2.37	.39	26	2.551	.017*	28	2.65	.31	27	1.765	.089	25	2.61	.34	24	1.236	.228
	Posttest	27	2.58	.41				28	2.58	.35				25	2.51	.36			
Teacher Support	Prestest	27	2.77	.18	24	1.141	.265	28	2.37	.39	27	1.384	.178	25	2.48	.36	24	.745	.463
	Posttest	27	2.69	.33				28	2.44	.34				25	2.43	.37			
Participation	Prestest	27	2.68	.26	24	-.102	.920	28	2.09	.44	27	4.349	.000*	25	2.37	.38	24	.954	.349
	Posttest	27	2.69	.39				28	2.35	.31				25	2.28	.38			
Investigation	Prestest	27	2.30	.48	26	3.116	.004*	28	2.30	.48	27	3.116	.004*	25	2.64	.40	24	1.787	.087
	Posttest	27	2.79	.87				28	2.79	.87				25	2.46	.38			
Task Orientation	Prestest	27	2.73	.24	26	2.701	.012*	28	2.59	.38	27	1.965	.060	25	2.70	.37	24	1.205	.240
	Posttest	27	2.83	.23				28	2.71	.23				25	2.59	.40			
Cooperation	Prestest	27	2.34	.51	26	3.523	.002*	28	2.26	.45	27	2.797	.009*	25	2.37	.52	24	.145	.886
	Posttest	27	2.66	.32				28	2.45	.42				25	2.35	.46			
Equity	Prestest	27	2.62	.33	26	2.393	.024*	28	2.48	.42	27	2.154	.040*	25	2.61	.38	24	.653	.520
	Posttest	27	2.79	.29				28	2.64	.30				25	2.54	.46			
What Is Happening in This Class	Prestest	27	2.15	.26	26	3.122	.004*	28	2.65	.20	27	1.499	.145	25	2.43	.26	24	2.644	.054
	Posttest	27	2.38	.35				28	2.71	.194				25	2.59	.33			

DISCUSSION, CONCLUSION, AND IMPLICATIONS

The findings indicated that there was a significant difference between the averages of the pre-test and post-test scores in EG-I for the Social-Emotional Learning Skills Scale, the What Is Happening in This Class? scale and the Reading Achievement Test associated with YCDI! Education. Notably, the researchers determined that YCDI! Education has a positive effect on students' social-emotional learning skills, academic achievements, and classroom climate perceptions. This supports the findings of previous research on YCDI! Education (Ashdown & Bernard, 2012; Bernard, 2004, 2006, 2008; Bernard & Walton, 2011). This study also demonstrated that YCDI! Education contributes to fourth-graders' development of achievement, self-management, perception of friendship, impulse control, self-confidence, and persistence. On the other hand, it did not increase the students' skill of developing friendships in this research. Establishing healthy relationships with a child is a part of social development (Beyazkürk, Anlıak, and Dinçer, 2007). Meriç (1999) described *friendship relations* as a means of social reinforcement. Thus, the dimension of relationships among friends has an important contribution to social-emotional development (Zins, Bloodworth, Weissberg, and Walberg, 2004). In particular, it is evident that friendship relations have changed positively due to a decrease in aggressive and timid behavior at the school level (Balkıs, Duru, & Buluş, 2005; Uşaklı, 2006). Parental attitudes and cultural characteristics also affect children's ability to develop friendships (Bayhan & Işıtan, 2010). Researchers have presented various classifications regarding the influence of parent attitudes on children, including hot-caressing, democratic, authoritarian and repressive family attitudes (Baumrind, 1991; Büyükşahin & Çelikkaleli, 2010). The most common parental attitudes in Turkey are mutual commitment, emotional dependence, interventionism, comparison with others, and excessive protection (Kağıtçıbaşı, 2005). Spera (2005) stated that children who are educated with democratic and balanced family attitudes are better able to develop friendships than children who experience other family attitudes. For instance, Çeçen (2008) stated that children who are raised in authoritarian, inconsistent, and protective families feel lonelier. In this respect, it is possible that this finding obtained from the relationships among friends dimension differs from the results of other research on the program because of the cultural structure and family attitudes in Turkey. As a result, relationships among friends are seen as a part of social acceptance; during adolescence, in particular, children aged 12-14 want to make friends of the same sex (Akın & Ceyhan, 2005; Bayhan & Işıtan, 2010; Demir & Kaya, 2008). The researchers recognised that this was the case for the students who participated in this study. For this reason, they are considered to have regarded friendship from a somewhat limited point of view. Therefore, considering their age group and developmental characteristics, no significant difference existed due to parents 'approach to their friends' relations with their children and their different interpretations of friendship.

According to international research, YCDI! Education has a positive effect on the academic achievement of students (Ashdown & Bernard, 2012; Bernard, 2017; Bernard & Walton, 2011; Yamamoto, Matsumoto & Bernard, 2017). For example, persistence, organization, and the ability to get along with others influence students' academic achievement and homework performance. Moreover, students' success in school increases when their self-confidence increases. In studies focusing on the relationship between social-emotional learning and academic achievement, the relationship between literacy and social-emotional development has been noteworthy (Ashdown & Bernard, 2011; Pollek, 2010). A language is an important tool for communication, self-expression, and information access (Board of Education, 2015). Therefore, in terms of social-emotional development, the success of the language lesson is thought to be in the foreground compared to the other lessons. The findings obtained from this research indicate that YCDI! Education contributes to students' reading achievement. Research conducted in recent years has emphasized that focusing on cognitive development alone is not sufficient to achieve success (Zins, Bloodworth, Weissberg and Walberg, 2004). This study will contribute to the increased academic achievement of the widespread implementation of social-emotional learning programs so that students feel happier in school, love school and their friends, and perform well in their lessons.

Based on a detailed examination of the findings, YCDI! Education has positive effects on the classroom climate perceptions of school students in terms of the student cohesiveness, research, task orientation, equality, and cooperation dimensions. Moreover, it is understood that there is no significant difference in the teacher support and participation dimensions. Teachers are expected to support learning in terms of students' academic, social, emotional, and behavioral development (Christenson, 2004). It is also known that the children who receive support from their teacher are more willing to participate in class (Özdemir & Sezgin, 2011). Thus, it can be assumed that the lack of significant differences in the dimensions of teacher support and participation in this study is related to teachers' inadequate support of children's participation (Fredrick, Blumenhfeld, & Paris, 2004). Classroom climate has an important role in the learning-teaching process because it is based on the relationship between teachers and students (Norris, 2003). The findings showed that YCDI! Education effectively leads to positive classroom climate perceptions. Previous research on different social-emotional learning programs revealed that social-emotional learning skills cause students to have a more positive perception of the classroom climate. Thus, it is easier for the teachers of these students to provide effective classroom management and develop the students' social-emotional learning skills (Littell et al., 2005; Norris, 2003).

The findings also revealed that there are no significant differences between the pre-test and post-test score averages for the Social-Emotional Learning Skills Scale, the What Is Happening in This Class? scale and the Turkish Achievement Test wherein the ESDP is applied. This indicates that the ESDP does not affect students' social-emotional learning skills, academic achievements, and classroom climate perceptions. A close examination of the ESDP curriculum showed that the preparation phase of the curriculum considered gifted and talented students. However, the Board of Education (2012) stated that the curriculum is also applicable for all students. Yet, previous studies have not investigated the effects of ESDP on students who are regularly developing. Thus, the findings revealed that ESDP does not contribute to the development of social-emotional learning skills, academic achievements, and the classroom climate perceptions of students with normal mental potential. This indicated that ESDP has been developed primarily for gifted and talented students; therefore, a significant difference was not discovered for students who have normal mental potential. Literature has shown that gifted and talented students need to be supported more socially and emotionally because they are different from students with normal mental potential (Moon, 2004). This reveals that students of average mental potential have different social and emotional needs compared to students who are gifted and talented. Moreover, the preparation of the curriculum requires specialists of curriculum development, measurement, and evaluation, knowledge of the subject area, a subject-area teacher as well as other aspects (Demirel, 2011). However, the analysis of ESDP showed that the preparation phase of the curriculum involved experts on gifted and talented students, but it did not involve the school teachers (Board of Education, 2012). In that regard, it is important for school teachers who have knowledge about and experience with the developmental characteristics of school students, who know their interests and needs, and who can identify their social-emotional problems to take part in the working group. Therefore, the activities prepared within the scope of the program do not come across as suitable for students of average mental potential.

LIMITATIONS

This research was carried out with 4th-grade primary students. Studies with other grade levels of primary school may yield more comprehensive results. In addition, the experimental intervention of this study was carried out for 8 weeks to keep the maturation effect under control. Experimenting in longer periods will contribute to the examination of the long-term effects of the social-emotional learning programs.

IMPLICATIONS

Based on the findings of this study, the researchers have the following suggestions:

- The ESDP should be reorganized so that students with regular mental potential can excel in the development of social-emotional skills.
- Investigating the effectiveness of the ESDP in different age groups with regular mental potential will support the findings from this research.
- Implementing YCDI! Education to students from different age groups from preschool to high school education in Turkey will give us detailed information about the program's effectiveness
- Research that focuses on the relationship between YCDI! Education and other courses such as mathematics, science, and social studies will also contribute to the field in terms of examining the relationship between social-emotional development and cognitive development in more detail.

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AUTHOR CONTRIBUTION

- The first author has made substantial contributions to the conception and design, acquisition of data as well as the analysis and interpretation of the data,
- The second author has made substantial contributions to the conception and design as well as the analysis and interpretation of the data.

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Teacher Education in Turkey in the Covid-19 Pandemic: Experiences of the Pre-Service Teachers about the Online Teaching Practice

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Abstract

The aim of the study is to analyse the experience of the pre-service teachers about teaching practice courses delivered through distance education during the Covid-19 process. The study is designed as an interpretive research. The participants of the study were selected through the convenience sampling technique. The participants are 72 pre-service teachers attending the pedagogical formation program at Afyon Kocatepe University during the academic year 2020-2021. The data of the study were collected using a questionnaired with seven open-ended items which was developed by the authors. The data collected were examined through the descriptive analysis. The findings of the study indicate that pre-service teachers define distance education educationally and spatially as the teaching practice course given through distance education. They stated that they improved themselves in terms of professional and technological environment and that they liked the feature of screen sharing in the process. They also added that they mostly used the question-answer method in the course. In addition, it is found that teachers should include further methods to ensure active participation of students during the online courses. The participants reported some problems mostly caused by the students, and they offered various suggestions for the solution of these problems.

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INTRODUCTION

The Covid-19 virus, which emerged in Wuhan, China at the end of December 2019 and at the beginning of January 2020, has affected the whole world. In order to reduce deaths and reduce the rate of progression of the virus, countries have taken some measures. In line with these measures, face-to-face education could not be carried out in educational institutions and distance education systems became widespread. The concept of distance education refers to the efforts that enable individuals who are geographically far away to reach education (Moore, Dickson-Deane & Galyen, 2011). However, it is a concept that develops as the technology used develops, in other words, that technology plays a decisive role (Bozkurt, 2017). Distance education does not require the teacher and learner to come together and eliminates the time and transportation fees spent to come together in the same place and time, as well as preventing health problems as in the Covid-19 global pandemic (Davis, Gought & Taylor, 2019). Therefore distance education activities have started to be implemented at all levels of education in Turkey as well as in many countries. With the transition to distance education in universities, university students have started to take both theoretical and applied courses using online methods. In addition to the distance education at the education faculties, the teaching practice courses that are carried out in cooperation with the Ministry of National Education and the Council of Higher Education have also been conducted through the distance education systems. Therefore, the pre-service teachers participated in the online lecturing processes via the communication network programs of the Ministry of National Education within the framework of the teaching practice courses. This course is planned for 12 weeks. They joined the observation of the teaching process for three weeks. Then as stated in the Directive Regarding the Teaching Practice to be performed by the Pre-service Teachers in Education Institutions affiliated to the Ministry of National Education, they carried out the teaching processes in a way to cover all the duties and responsibilities required by the teaching profession. Teaching practice courses are carried out in the schools affiliated to the Ministry of National Education with a focus on practice and aim to provide pre-service teachers with knowledge, skills and attitudes about the teaching profession. For this reason, these courses are extremely important in terms of teacher training. The teaching practice courses are the most remarkable experience for a trainee in a teacher preparation program (Krause, Douglas, Lynch & Kesselring, 2018). Research suggests that these courses play a decisive role in the early professional development of the pre-service teachers (Caires, Almeida & Vieira, 2012). The importance of teaching practice at schools in pre-service teacher training programs is widely recognized. Throughout Europe, there is a trend towards the remodeling of the Initial Teacher Education to enable pre-service teachers to learn in school settings, to be able to deliver courses, to spend more time at schools and to receive much stronger support in courses (Kidd & Murray, 2020).

There are some studies on the effects of the COVID-19 pandemic on the education. These studies mostly deal with the views of the pre-service and in-service teachers, parents and students about the distance education activities and the problems they come across in the process (Assante, & Candel, 2020; İmamoğlu & İmamoğlu, 2020; Karakuş, Ucuzsatar, Karacaoğlu, Esendemir, & Bayraktar, 2020; Kaynar, Kurnaz, Doğrukök, & Barışık, 2020). However, the experience of the pre-service teachers in the online courses on teaching practice has not been much studied. As stated above, these courses are very crucial for all pre-service teachers. The starting point of the study is to reveal the potentially changing experience of the pre-service teachers as a result of the distance education concerning the teaching practice courses. The aim of this study is to examine the experiences of pre-service teachers regarding teaching practice courses conducted through distance education in the Covid-19 pandemic.

METHOD

RESEARCH DESIGN

This study is designed using the basic interpretative research design, which examines how people interpret their experiences and the meanings they attach to their experiences (Merriam, 2002), and the aim of the study is to uncover the opinions of pre-service teachers about their experiences concerning the teaching practice course which was delivered through distance education during Covid-19.

PARTICIPANTS

The participants of the study are 72 pre-service teachers attending pedagogical formation courses at Afyon Kocatepe University during the academic year of 2020-2021. Of them 45 were female and 27 male. They were chosen using the convenience sampling which is one of the non-random sampling techniques. When using the convenience sampling technique, the potential participants are asked whether they are eligible to participate for the study or a sample of individuals who are easy to access is formed (Christensen, Johnson & Turner, 2015).

DATA COLLECTION TOOLS

In the study, a questionnaire form consisting of seven open-ended items was employed in order to understand the experiences of the pre-service teachers about the teaching practice courses which was delivered through the distance education process. During the development of the questionnaire, the relevant studies were reviewed to find suitable items. The draft questionnaire form was examined by two specialists in order to ensure internal validity. Based on the feedback the necessary corrections were made, and the questionnaire was finalized.

DATA ANALYSIS

The data collected were examined using the descriptive analysis. The goal of the descriptive analysis is to present the interpretations of the findings (Yıldırım & Şimşek, 2008). The questionnaire forms administered were coded and each response was read. In order to establish the reliability of the study the data were analysed separately by the authors and mutually agreed and disagreed points were discussed. Additionally based on the answers, the themes were organized, and an interview coding key was developed. An expert reviewed the interview texts and interview coding key. The markings made by the authors and the expert on the interview coding key were compared. The reliability coefficient was found using the formula developed by Miles and Huberman (1994) and it was found to be 90.2%.

Based on the responses of the participants themes and subthemes were developed for each item. In the discussion of these themes and subthemes direct quotations from the reports of the participants are given with the codes assigned to the participants.

FINDINGS/RESULTS

The findings indicate that the views of the pre-service teachers about the teaching practice course that they took through distance education are grouped under seven themes which contain some subthemes. It is seen that there are five themes about the teaching practice course during the distance education. Table 1 shows the views of the participants about the distance education.

Table 1. *Views of the Participants about the Distance Education*

Distance education	Frequency
Educational dimension	91
Student-centered	32
Continuation of teaching and learning process	23
Not productive courses	10
Equal opportunity	7
Equal provision of education	5
Supporting the life-long learning	5
Using varied teaching materials	3
Increased student responsibility	3
Being an interesting teaching medium	3
Spatial dimension	80
Being independent of time and space	39
Easy access	27
Addressing higher number of students	14
Technological dimension	45
Courses based on technology	29
Being a virtual setting	12
Improving the ability to employ technology	4
Economical dimension	18
Being economical	16
Time saving	2
Affective dimension	7
Lack of communication	4
Less interactional	2
Not being able to reflect the emotions	1

As can be seen in Table 1 the views of the participants about the distance education produce five themes, namely educational dimension, spatial dimension, technological dimension, economical dimension and affective dimension. However, the most frequently emphasized dimension is that of educational in which the participants stressed the points of distance education such as being student-centered, continuation of teaching and learning process, Not productive courses, equal opportunity and the support for life-long education. For instance, some participants emphasized the student-centered dimension of the distance education as follows: *"Distance education is student-centered. The students have an opportunity to follow the lessons later whenever they want. Because they may have not been available during class time, or there can be problems with Internet access."* (P8); "*The main feature of this process is that education is provided in a student-centered manner. The system has achieved its aim both in terms of continuing education and with the feature of providing the students with an opportunity to watch the lessons again."* (P44). Some other participants emphasized the continuation of education through this medium as follows: "*It is possible to say that distance education is important in terms of not stopping education."* (P7). *"Individuals continue their education through distance education."* (P9).

There are some participants who stated that courses through distance education are not productive: "*I think it is more effective to deliver courses in a face to face manner and to interact in education."* (P21); "*I think distance education is not as effective as face-to-face education.…*" (P63). One of the participants stated that teaching practice courses given through distance education are not useful for them: "*Although distance education is a good system, it cannot replace face-to-face communication. This complicates the experience that we as pre-service teachers will get*." (P59).

It is seen that the pre-service teachers also emphasized the spatial dimension of distance education in terms of being independent from time and place, being easily accessible and providing access to a wider audience. One of these participants stated "*Students can study in any environment* *where the internet is provided, regardless of time and place*." (P72). Another participant reported both being independent of time and space as well as being easily accessible as follows: "*Distance education, which does not require teachers and students to come to another place from where they are, is a method that provides interactive communication through information technologies."* (P17).

In addition, it is also found that the pre-service teachers defined distance education as a lesson conducted in a virtual environment by using technological tools and emphasized the technological aspect of this type of education in terms of developing the ability of individuals to use technology effectively. Some of the related reports by the participants are as follows: "*distance education is a method that provides interactive communication through information technologies."* (P17); "*It allows the teacher to deliver the lessons a little more technologically."* (P42).

The pre-service teachers tried to define the distance education in terms of affective outcomes by stating that there is little communication and interaction with students and that emotions are not reflected in distance education courses. The related statements of the participants are given as follows: "*Distance education is actually a one-sided form of communication where emotions are not reflected in the lessons. Communication is incomplete and broken*." (P16) and "*Students have problems in understanding the topics because they cannot be in constant communication with us. This is the disadvantage of distance education."* (P72).

Table 2 presents the views of the participants about the contributions of the teaching practice course delivered through distance education.

Table 2. *Contributions of the Teaching Practice Course Delivered through Distance Education to the Pre-Service Teachers*

Contributions of the teaching practice course to the pre-service teachers	f
Improvement of teaching profession	66
Communicative skills of students	25
Active participation by the students	10
Improvement of lecturing style	15
Improvement of teaching style	7
Improvement of material development	5
Developing different ideas	4
Using technology	61
Improvement of technology use	35
Learning about distance education	18
Having experience on distance education	5
Recognition of the necessity of updating information on technology	3
Improvement of self-confidence	57
Being able to deliver courses easily	33
Establishment of self confidence	24

As can be seen in Table 2 the of the participants about the contributions of the teaching practice course delivered through distance education are grouped under three categories: professional development, the use of technology and self-confidence.

The pre-service teachers stated that the teaching practice course through distance education contributed their professional skills. They argued that even their effective communication skills with students improved, that they carried out activities to ensure active participation of the students in the lessons, that their lecturing skills were improved and learned about the effective learning and teaching process. They also added that their material development skills increased. Concerning communication skills one of the participants stated *"I learned how to communicate with our students."* (P56). In regard to the improvement of lecturing style one participant argued "*While lecturing, I made statements in such a way that the students were not bored as much as possible and for this purpose, I ensure that the* *students participate in the lesson through the using examples from daily life.*" (P64) and "*It contributed to me on how to ensure the tone of voice and active participation during the lecture*." (P6). Reporting various contributions of the course one participant, P48, stated "*First of all, I think this course has contributed a lot to me professionally. I can say that I learned about many things such as what to do and what not to do during a lecture, proper attitude towards the student, well-adjusted tone of voice and the ways to keep students active in the lesson.*"

The participants reported that the teaching practice course delivered through the distance education contributed their use of technology. The majority of them stated that the courses through the distance education improved their skills to use technology. Some of the related direct quotations are as follows: "*On this occasion, we learned more quickly the necessary process we need to use while lecturing through distance education."* (P56) and "*Through the distance education system, I learned to control many things at the same time while lecturing. Compared to a regular classroom environment, distance lecturing has greatly contributed to my learning how to motivate students in distance education lessons, both by controlling the participation of students, controlling the duration of classes and creating virtual classes for class participation*." (P64).

Some of them also stated that the distance education courses contributed to their teaching skills. They stated that thanks to the teaching practice lesson, they were able to lecture more comfortably over time, and their self-confidence in lecturing improved. The related direct quotations are given as follows: "*..I started teaching more comfortably and really started to feel myself like a real teacher. It has been a great experience for me."* (P32) and *"Over time, my excitement diminished with my experience and I gradually gained experience. Over time, my self-confidence also increased and I started lecturing more comfortably."* (P57).

Table 3 presents the views of the participants about the positive dimension concerning the teaching practice courses through distance education.

Table 3. *Views of the participants about the positive dimension concerning the teaching practice courses through distance education*

Positive dimensions	f
System /Technology	51
Screen sharing	17
Efficient use of technology	10
Using audio visual materials in the courses	10
Presentations with visuals	6
Being easy	6
Time management	2
Affective	35
Less exciting	14
More comfortable lecture environment	9
As serious as face-to-face courses	5
Comfortable for students	4
Not liking online courses	3
Teaching and learning process	15
Easier classroom management	4
Answering the questions one by one	4
Using activities to improve student participation	4
Reaccessing the course materials	3

Table 3 shows that for the participants there are three majot groups of positive dimensions of the online courses: system/technology, affective and teaching-learning process.

The participants mostly liked system-related characteristics of the distance education such as screen sharing, the efficient use of technology, the use of the audio-visual materials in the courses and supporting the presentations with visuals. The related reports of the participants are as follows: *"I liked the screen sharing feature the most. Thanks to this feature, I was able to easily reflect my presentation about the topics to my students during my courses and have them watch videos."* (P17). The other related direct quotations are as follows: *"While lecturing, we had the opportunity to benefit from photographs, pictures and images.*" (P64) and "*I think the lesson is actually delivered more efficiently due to the more active use of different visuals, activities and animations, thanks to distance education."* (P66).

They also praised the affective dimensions of the distance education. They stated that they were less excited during the courses, lectured more comfortably, the education was serious as face-to-face education, and the students were more comfortable during the distance education process. The related reports are given as follows: "*When we are going to teach in face-to-face education, maybe too much excitement, stress, etc. I could have experienced situations, but I experienced these feelings in a reduced form in distance education.*" (P4) and "*It enabled me to create a more stress-free and self-confident environment during the lessons as I taught during the internship in distance education. I can say that the stress and difficulties I would have in face-to-face education decreased a little during this process."* (P4). The reports of the participants stressing that these courses were also serious as face-to-face courses are as follows: *"I liked the teaching practice course via distance education as it provides an effective lesson just like in the classroom thanks to the zoom program."* (P48) and *"I can say that distance education provides a more serious educational environment by creating the feeling of being at a school with distance education."* (P57).

The participants also emphasized that the classroom management is much easier in the learning and teaching process in distance education, that students answer each of the questions and can easily access course documents and that they can develop different activities. The related direct quotations are as follows: "*Some of the negative situations experienced in classrooms spontaneously disappeared in the distance education. For example, the students did not joke or fight with each other during the lessons. Thus, classroom management became easy."* (P70).

Table 4 shows the activities used by the participants in the teaching practice course given through the distance education.

Table 4. Activities used by the Participants in the Teaching Practice Course Given through the Distance Education

Activities by the pre-service teachers	f
Teaching and learning process	*106*
Question-answer sessions	44
Watching videos	19
Presentations with visuals	16
Examples from daily life	8
Listening to poems	7
Using various materials	6
Digital activities	4
Listening to music	2
Communication skills	15
Fun lessons	6
Motivation	3
Cheerfulness	3
Effective use of voice tone	3
Assessment	3
Using conventional student assessment methods	3

As can be seen in Table 4 the activities used by the participants in the distance teaching practice course are grouped into three themes: teaching and learning processes, communication skills and assessment. It is found that the participants mostly used question-answer sessions. It is also found that they had students watch videos, used presentations supported by visuals and developed a connection between mathematics and daily life. Some of the participants reported that they developed materials and employed digital activities. In addition, poem performances and music were also used as teaching activities. The related reports by the participants are given as follows: "*In my lectures, I first used materials suitable for the learning process in order to attract the students' attention to the lesson."* (P5)*;* "*I designed different materials regarding the learning outcomes using colored cardboard. I attempt to attract the students' attention using the visual materials."* (P21); "*I take care to prepare interesting slides. I add cartoons or images to the slides."* (P12); "*I wanted my students to read poems. I also read poems at the beginning of the courses or added poems to my presentations to attract their attention."* (P22); *"..With the animated quiz contest covering the content of the lesson, I prevented students from leaving the lesson and refreshed their knowledge in an entertaining manner*." (P57).

Concerning the communication skills the participants argued that they delivered the courses in an interesting way not to make the courses boring, motivated the students, were cheerful and used their voice tone in an effective way. The related direct quotation is given as follows: "*While lecturing, our diction, speaking style, tone of voice and way of addressing rather than gestures and gestures attract more attention when we consider the situation we are in. I think that the lessons in the form of cheerful and mutual conversation are more attractive and useful for both parties."* (P14).

Very few participants reported that thy used the conventional student assessment methods. The reports of the participants in this regard are as follows: "*I enable students to answer the items by organizing activities such as tests and matching exercises."* (P18) and *"At the end of the lesson, I prepared many activities in the form of puzzles, fill in the blanks exercises, multiple choice items and question-answer sessions."* (P20).

Table 5 presents the tasks of the pre-service teachers in the teaching practice course delivered via distance education. As can be seen in Table 5 the tasks of the pre-service teachers in the teaching practice course delivered via distance education are grouped into three themes: roles related to the teaching and learning process, the use of materials and communication skills.

The participants particularly mentioned various roles of teachers in regard to the learning and teaching process. The necessary steps to ensure the active participation of students in the lessons are seen as the most important task. In order to ensure the participation of the student in the lesson, the most expressed points are that the teachers should deliver the lessons to attract the attention of the students, constantly ask questions during the lessons, provide clear and entertaining lectures and do activities. The related direct quotations are as follows: "*The teachers' tone of voice and active expression are very important for an effective teaching ... Another task is to activate the students. An effective teaching environment can be created by giving every student a voice or using auxiliary materials that may be of their interest.*" (P6) and "*I think we should deliver the lessons by asking questions to the students and making them active participants of the courses."* (P10). In addition, the participants also stated that teachers should evaluate student progress, give them homework, and be able to manage time efficiently.

Table 5. *Tasks of the pre-Service Teachers in the Teaching Practice Course Delivered via Distance Education*

Tasks	f
Roles related to the teaching-learning process	112
Active participation of the students	27
attracting the attention of the students	22
Asking questions and discussion	14
Clear lecturing	11
Fun lecturing	8
Activities	8
Assessments	6
Assignments	6
Time management	4
Using correct voice tone	2
Giving feedback	2
Less assignments	2
Use of materials	60
Use of digital and rich materials	18
Completing the preparation before the courses	15
Using interesting materials	14
Having knowledge on technology	13
Communication skills	51
Continuous communication	17
Being interested in students (friendly / warm / understanding)	16
Motivating students	11
Empathy	4
Being aware of the individual differences	3

Concerning the material use they stated that the tasks included the use of digital, interesting and rich materials, completion of the preparation before the course and having information on technology. The related reports are as follows: "*In order to attract student attention different materials should be employed."* (P58) and "*We should use different materials such as animation and activities that will increase student' interest in the lesson."* (P66). The other direct quotation in this regard is as follows: *"The teacher needs to be prepared very well and make preparations in the distance education system before the lesson. The material needs to be abundant because the student may be bored and become uninterested in the course."* (P51).

In regard to the theme of communication skills, the participants stated characteristics such as teachers' effective communication with students, being interested and understanding, motivating them, empathizing with them, and paying attention to individual differences. For instance, one participant, P7, reported the following: "*The teachers should not just teach. They should understand the students. Because this difficult process is not easy, so the information given to the students should be simple and understandable as well as motivating speeches should be made..."*

Table 6 show the frequency of the views of the participants concerning the problems they experienced in the teaching practice courses delivered via distance education. Table 6 shows that the problems expressed by the participants experienced during the teaching practice courses are grouped into four categories: problems related to students and themselves, system and home environment.

Table 6. *Problems the Participants Experienced in the Teaching Practice Courses Delivered via Distance Education*

Problems	f
Student-related problems	*71*
Not active participation	28
Closing videos and microphones	11
Not attending classes	10
Student apathy and unwillingness	7
Not having microphones	5
Students' not coming to class on time	4
Not doing homework	3
Lack of Internet connection	3
Problems related to pre-service teachers	33
Internet connection	14
Lack of computer	6
Lack of eye contact	6
Difficulty related to Covid 19	2
Not seeing all students	2
Lack of microphone	2
Insufficient knowledge on technology	1
System-related problems	31
Voice interruptions	17
Not being competent concerning the program (zoom)	5
Use of foreign language in the program	3
Problems in logging into the program	3
Not using the program in an efficient way (due to teachers' occupation with course)	2
Time constraints in the program	1
Problems related to home environment	5
Noise	5

As can be seen in Table 6 the most frequently expressed problems are related to the students: students' not actively participation in the class, having their cameras turned off, not coming to the class / not being able to come to the class and student indifference / reluctance. In addition, the other problems are as follows: some students do not have microphones, do not enter the class on time, do not do homework and internet connections. The related reports are given as follows: "*In contrast to the regular classrooms and school environment, students have more excuses and avoidance of lessons in distance education. The student we asked questions is leaving the lesson for fear of not being able to answer the question."* (P7); *"Sometimes I had to teach only one student and sometimes to ourselves."* (P29) and *"Most of the students either wake up or sleep during class time or they are tired because of working in the field. Some students, on the other hand, had the internet problem, unfortunately, and therefore, they cannot answer the questions we asked to them; we had problems on the internet due to the infrastructure and the places they were in."* (P64).

The pre-service teachers also stated that they had problems with the internet connection; they did not have computers and microphones and remarked that they had the problems caused by the system. The other problems are stated as the lack of eye contact with students and experiencing hard Covid 19 illness. For instance, one participant, P38, reported "*When I was going to start my full lecture process, I got the Covid-19 and it was a bit heavy, I do not think it was not very efficient because I could not fully recover."*

Among the system-related problems mentioned include the interruption of the voices of both students and pre-service teachers during the lesson, not understanding the distance education program used, having problems in entering into the problem and not being able to use the program effectively and insufficient time provided by the program. One participant, P25, stated "*I had a voice problem originating from my computer while lecturing. I could not do that lesson and had to postpone it.*"

A few participants also stated that they experienced the problem due to the home environment being noisy during the lesson. The views of the participant P69 are as follows: "*The home environment was not appropriate for lecturing.*"

The suggestions of the participants are given in Table 7 concerning the teaching practice course delivered via the distance education.

Table 7. *Suggestions of the Participants about the Teaching Practice Course Delivered via the Distance Education*

Suggestions	Frequency
Technology	109
Widespread Internet connection	20
Technological devices	19
Free Internet service	17
Faster Internet connection	16
System capacity	14
Information about technology	9
Open videos	7
Reaccessing the courses missed	5
Free use of videos and microphones	2

The participants offered suggestions addressing the technological dimensions. Those who had limited access to technological resources in the distance education process mostly made suggestions on this issue. Their suggestions include the expansion of the internet network, increase of its speed and making it free, provision of the technological equipment support, and having higher capacity distance education system. Some of the related reports by the participants are as follows: "*No student has the same condition in distance education. There should be no internet connection problems, and free internet service should be provided. Students and teachers in need should be provided with equipment such as computers and tablets, and the internet infrastructure should be improved*." (P49) and "*Providing adequate infrastructure as a priority will eliminate technological problems.*" (P50).

Some participants, on the other hand, argued that students should not be forced to turn on their videos during the online courses. The related direct quotations are given as follows:

" ..*Students whose environment is suitable should be asked to turn on their cameras. Thus, lessons can be given as in face-to-face education, and teaching may become more efficient.*" (P65) and "*Since the family environment is not the same for everyone while listening to the lesson. Therefore, teachers should not oblige students to turn on their videos.*" (P16).

DISCUSSION, CONCLUSION AND IMPLICATIONS

In this study, it is aimed to reveal the experiences of the pre-service teachers regarding the teaching practice courses conducted through distance education during the Covid-19 pandemic process based on their views. This study is significant in that it systematically evaluates the effectiveness of this course and helps to develop contingency plans for similar situations in the future. Dyment and Downing (2020) point out that there are many studies on online teacher training (pre-service) before the pandemic as a result of their systematic review of the studies carried out between 2012 and 2017 on online pre-service teacher education.

However, they recommend conducting more research on the effectiveness of online teacher training using a more strategic, consistent and collaborative approach. Velle, Newman, Montgomery and Hyatt (2020) provided examples showing that distance education practices are beneficial in the training of future teachers and make a serious assessment of how theory and new forms of practice can be combined more successfully in the future.

The findings of the study indicate that the participants correctly define distance education with conceptually different dimensions. In addition, it is seen that they have positive opinions about the distance education stating that it is the most appropriate education during the pandemic period. They expressed the educational, spatial, technological, economic and emotional dimensions of distance education. They mostly emphasized the educational aspect of distance education, and stated that distance education is student-centered, enabling the education to continue, providing equal opportunities and supporting lifelong learning. The previous findings also show that pre-service teachers generally offer correct concepts about the distance education (Kırtak Ad, 2020), and they reported that although there are some problems, distance education is the most appropriate choice during the pandemic period (Mohalik & Sahoo, 2020; Halitoğlu, 2021). There are participants who also explain distance education with its spatial dimension in terms of being independent from time and place, being easily accessible and providing access to a wider audience. By removing the space and time limitations, distance education has ensured that education is carried out from anywhere with Internet access (Djalilova, 2020) and the lessons are recorded which can be followed by students later at an available time, and the students are in a position to manage themselves (Mukhtar, Javed, Arooj & Sethi 2020). In addition, the pre-service teachers discussed the technological dimension of distance education in terms of improving their ability to use technology effectively. Few of the participants tried to define distance education with its emotional dimension, stating that there was little communication and interaction with students and that emotions were not reflected in online courses. In some studies, the communication and interaction aspects of distance education have been emphasized. For example, Altun Ekiz (2020) found that university students are not satisfied with limited interaction in distance education processes. Demirbilek (2021) concluded that university students complained about communication issues during the distance education process.

According to the views of the participants, the teaching practice course given through distance education contributed to them mostly in terms of professional skills, technological skills and self-confidence. It is found that the participants improved in establishing effective communication with students, creating an effective learning-teaching process and developing materials. In addition, almost all of them emphasized that their skills and self-confidence improved in distance education programs over time. As a positive result of the pandemic process, the pre-service teachers learned how to teach in an online teaching setting which is a valuable and needed skill in today's world. The pre-service teachers cooperated with the counselors in this regard. Although teaching is done through video and audio conferencing, it has a significant impact on the development of the pre-service teachers' professional skills. As many participants stated in the online course evaluation questionnaires, their identity as teachers and their self-efficacy as future teachers have improved (Donitsa-Schmidt & Ramot, 2020). In the study conducted by Altuntaş, Başaran, Özeke & Yılmaz (2020), the undergraduate students stated that they found distance education useful during the pandemic process as it technically improved their skills. During this extraordinary period, many pre-service teachers wanted to learn something from their counselors. There are a number of options such as choosing to learn / develop first-hand skills that they were not expected to use in the previous teaching practice lessons. These include: communicating with and encouraging and supporting students virtually; developing relationships with students in a virtual environment and learning new online digital platforms (Nuland, Mandzuk, Petrick & Cooper, 2020). However, in some studies, it is also reported that distance education processes cause pre-service teachers to improve themselves and therefore, they feel themselves inadequate in the fields of professional development (Eti & Karaduman, 2020; Lema, García, Martín & Calvo, 2020).

In regard to the distance education teaching practice lesson, the pre-service teachers stated that they liked features such as screen sharing, using technology effectively, using audio-visual elements in the learning teaching process, and supporting the presentations with visuals. They stated that they were less excited in the teaching practice lesson in distance education that they lectured more comfortably, that the education was serious as it is face-to-face, and that the students were also more comfortable. In the research by Koç (2020), pre-service teachers stated that students felt more comfortable in distance education lessons and expressed themselves better in asking and answering questions.

Concerning the activities of the participants in the teaching practice courses delivered via distance education, it is found that the pre-service teachers mostly used the question-answer method in the teaching and learning processes, employed videos related to the subject matter, included visual elements in their presentations, and provided examples about the topics by establishing connections between topics and daily life. In addition, some pre-service teachers stated that they developed materials and included digital applications in the lessons. In the study conducted by Koç (2020) the pre-service teachers mostly used visual and technology-based content such as slides, videos, short films and animation in the teaching practice course. It is found that the participants focus on the materials that they would use to teach the course content regardless of the distance education processes in the distance education activities employed in the emergencies. However, they might have employed the distance education processes in such cases. The lack of necessary technical and professional knowledge can be cited as the reason for it. Rapanta, Botturi, Goodyear, Guardia and Koole (2020) stress the necessity of the studies related to infrastructure aimed at improving the learner-teacher interaction in distance education processes. Jackson and Jones (2019) emphasize that distance education is significantly different from face-to-face education practice and therefore, requires different types of teacher training. They recommend that in teacher training programs there should be more content related to distance education and learning. These may include the management of the online classrooms, converting teaching environment into an online environment, motivating students, and online teaching designs.

The participants considered their basic teaching roles in the distance education process as material usage, communication skills, personal characteristics and the knowledge of subject matter. The participants particularly stated that teachers have many roles in learning and teaching processes of the distance education. For them the most important task is to ensure that students participate actively in the lesson, especially during the live lessons. In order to ensure student participation in the courses, the teachers should teach the courses in a way that attracts the attention of the students, constantly asking questions during the lessons, making a clear, understandable and entertaining narration and activities. The participants reported the tasks of teachers in the process such as using the most digital / rich, interesting materials in the lessons, logging in before the lesson and completing the preparations, and having the technology knowledge. Toprakçı and Ersoy (2008) also argue that in regard to the distance learning, the role of the teacher concerning the material development has changed, and material development has become a joint task of both the teachers and the content developers.

The pre-service teachers stated that they experienced problems arising from the students, themselves, the system and the course environment in the teaching practice course which was delivered through the distance education. It is found that the most common problem in distance education for them is the problems caused by students as follows: students do not actively participate in the classes, the videos of the students are turned off, the students do not attend the classes, and they are indifferent and unwilling to take part in the courses. Distance education significantly limits the communication between students and teachers (Başaran, Doğan, Karaoğlu & Şahin, 2020; Demirbilek, 2021; Djalilova, 2020; Ünal & Bulunuz, 2020). It is reported that student attendance to the courses in distance education is at lower levels (Arora & Srinivasan, 2020; Flores & Gago, 2020; Genç, 2020). Moorhouse (2020) states that a small number of students attend classes which are delivered through the distance education and that unlike face-to-face class sessions, students rarely speak and prefer the text chat function instead.

In addition, the participants also reported other system-related problems such as students' lack of microphones, not attending the class on time, not doing homework and disconnection of internet. They stated that they had problems with the internet connection, that they did not have computers and microphones, which they considered as the problems caused by the system. The finding of the present study that one of the major problems is related to the Internet problems has also been reported in previous studies (Arora & Srinivasan, 2020; Flores & Gago, 2020; Hebebci, Bertiz & Alan, 2020; Karakuş et. al. 2020; Koç, 2020; Mohalik & Sahoo, 2020; Ünal & Bulunuz, 2020).

Participants offered several suggestions such as expanding the Internet network, increasing the speed of the Internet and making the Internet free, providing technological tools and equipment support, and increasing the capacity of the distance education system used. The finding that distance education should be much more influential and high-quality is consistent with the previous findings (Gewin, 2020; Koç, 2020). In this study, the experiences of pre-service teachers regarding the teaching practice courses, which has an important place in teacher training, through distance education are uncovered. The findings obtained from the study show that distance education has many contributions to pre-service teachers' gaining experience on teaching. However, given that the pre-service teachers employed the teaching methods and techniques that have been used in regular courses, they should be given on which teaching methods and techniques can be used for effective use of distance education and how to use these methods and techniques in the teacher training programs.

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AUTHOR CONTRIBUTION

Both the first and second authors contributed equally to all processes such as data collection, analysis, interpretation, discussion and revision.

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The Mediating Role of Loneliness in the Relationship Between Maladaptive Thinking Styles and Emotional Expressivity[1]

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Abstract

This study investigated the mediating role of loneliness in the relationship between maladaptive thinking styles and emotional expressivity. Participants were 1042 [776 (%74.5) female and 266 (%25.5) male, range age = 17–28, M age = 20.02, SD age = 1.69] young adults enrolled at university. “Berkeley Expressivity Scale” to determine their emotional expressivity, “Maladaptive Thinking Styles Scale” to determine the maladaptive thinking styles, and “UCLA Loneliness Scale (ULS-8)” to determine their loneliness levels were used. In the study, the data were analyzed with the structural equation model. Also, the bootstrapping method was used to test the significance of the indirect effect. As a result of the structural equation model, loneliness has been found to play a partial mediating role in the relationship between maladaptive thinking styles and emotional expressivity. In other words, maladaptive thinking styles predict emotional expressivity both directly and through loneliness. Also, the result of the bootstrapping method has shown that this indirect effect is significant. The findings discussed in the context of the relevant literature and recommendations for future research given.

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INTRODUCTION

Emotions are of great importance in human life. Emotions are one of our most basic mechanisms that both reveal inner states and make sense of behavior. Emotions contribute to our socialization by helping us understand other people (Gala, 2017). The fact that individuals feel any emotion does not mean that they will express it. While some emotions are suppressed and not reflected, some of them can be easily expressed (Gross & John, 1997). Reflection of felt emotions on behavior is called expressivity (Gross & John, 1998). Individual differences can be observed in expressivity. While some individuals can express their emotions very easily, others suppress their emotions (Trierweiler, Eid, & Lischetzke, 2002). Many emotions expressed benefit both physical and psychological health (Akın, 2011; Nyklíček, Temoshok, & Vingerhoets, 2004; Sayed Ismail & Dhaidan Al-Dhaidan, 2020). Suppression of emotions can cause individuals to experience psychological problems such as depression (McClain, Younginer & Elledge, 2020; Nezlek & Kuppens, 2008), anxiety (Hayes et al., 2004), and borderline personality disorder (Herpertz et al., 2001). It is important to reveal and evaluate the emotions that are suppressed and harm the individual (Hackney & Cormier, 2008). For this evaluation, it is necessary to focus on the thoughts that can affect emotional expression. Many researchers have stated that thinking styles are effective on an individual's emotions and behaviors (Beck & Alford, 2009; Dryden, 2012; Ellis, 1962; Lazarus, 1991).

Thinking styles can contribute to the quality of life of the individual but also be the source of his problems. Thinking styles affect individuals' interpretation of events either correctly or incorrectly. Individuals who can interpret events correctly; they can choose flexibly, be anti-catastrophic and show high tolerance to frustration (Dryden & Neenan, 2014). Misinterpretation of events is associated with individuals experiencing problems such as depression (Beck, 2011), anger and aggression (Askari, 2019), stress (Muran & Motta, 1993), panic attacks (Hedley, Hoffart, Damme, Ekeberg, & Friis, 2000). Faulty thinking styles have been dealt with under different names in counseling theories. These thinking styles have been termed, cognitive distortions by cognitive therapy (Beck, 1976), as irrational beliefs by rational emotional behavioral therapy (Ellis, 1958). Cognitive analytical therapy stated emotions and behaviors as rituals and evaluated faulty thinking as target problems to be solved (Ryle, 1991). Target problems are grouped dilemmas, traps, and snags (Ryle, 1979a). These thinking structures are named as "maladaptive thinking styles" because they disrupt the life adaptation of individuals. Individuals who have dilemma-style thinking believe that they must choose one of two alternative ways. Individuals with this thought feel that they cannot be happy in either situation (Ryle, 1979b). Individuals with trap-style thinking constantly make negative inferences in their relationships. Individuals have the belief that what they do will either do not change the negative result or makes it worse (Ryle, 1995). The individual's thinking that he or she cannot achieve his goals or desired roles is called snags. Sometimes it can be the opposition of others and sometimes the individual's own personal evaluation. Because of the snags, individuals think that they cannot set goals regarding their lives (Ryle, 1985).

Similar faulty thoughts negatively affect the intimate relationships of individuals (Hamamcı, 2005). Intimate relationships are one of the basic needs of human beings (Maslow, 1954). People basically need the presence of people who value themselves, can communicate, plan and work together, live together, and take care of their offspring (Cacioppo & Patrick, 2008). Intimate relationships are very important in young adulthood (Masten & Coatsworth, 1998). Young adults expand their networks by getting closer to their friends and romantic partners (Collins, Gleason, & Sesma, 1997; Erikson, 1968). Also to the importance of friends and romantic relationships, acceptance and support by the family is very important in young adulthood (Paradis et al., 2011). Individuals who have trouble forming close relationships in young adulthood often suppress their emotions. Because mutual feelings in intimate relationships can be easily expressed (Hamarta, 2004). Because of not being able to build intimate relationships, individuals experience a feeling of loneliness (Peplau & Perlman, 1982). Loneliness can be seen quite commonly; it affects every individual regardless of characteristics such as race, gender, age, or cultural history (Rokach & Bacanlı, 2001). In large-sample studies of loneliness, approximately 10-16% of people stated that they feel loneliness at any time in their lives (Beutel et al., 2017; Lasgaard, Friis, & Shevlin, 2016; Stickley et al., 2015). Among university students, most of whom are in their young adulthood, this rate is 43% (Karaoğlu, Avşaroğlu, & Deniz, 2009). Loneliness negatively affects the lives of individuals (Arslantaş et al., 2015). Studies have shown that loneliness; depression (Cacioppo et al., 2010), stress (Kearns, Whitley, Tannahill, & Ellaway, 2015), suicidal thoughts (Rudatsikira, Muula, Siziya, & Twa-Twa, 2007), sleep problems (Pressman et al., 2005). revealed that it is associated with adverse conditions such as memory impairment (Wilson et al., 2007), more rapid illness (Kiecolt-Glaser et al., 1984), and early death (Cacioppo, Capitanio, & Cacioppo, 2014).

Expressing emotions help process emotional experiences (Slanbekova et al., 2019). There may be many reasons why the individual's tendency to express his emotions is less. However, individuals with maladaptive thinking cannot always be expected to have less emotional expressions. Similarly, individuals with high emotional expressions cannot always be expected to have less maladaptive thinking. Different researchers have stated that such emotions are mediated by the thought-behavior relationship (Beck, 1976; Ellis, 1958; Ryle, 1991). Therefore, the difference between individuals with maladaptive thinking showing less or more emotional expression maybe because of loneliness. Cognitive processes determine the severity of loneliness (Peplau & Perlman, 1982). Especially the maladaptive thinking of individuals cause intense loneliness (Young, 1982). Individuals with maladaptive thinking can be expected to have a low level of emotional expression because they experience a sense of loneliness. In this context, we think that maladaptive thinking styles may be related to emotional expression and that the feeling of loneliness plays may be a mediating role in this relationship.

In this study, we aimed to test the following questions in the light of the above theoretical information.

1. Do maladaptive thinking styles significantly predict emotional expressivity?

2. Do maladaptive thinking styles significantly predict loneliness?

3. Does loneliness significantly predict emotional expressivity?

4. Does mediating loneliness role of in the relationship between maladaptive thinking styles and emotional expressivity?

METHOD

RESEARCH DESIGN

This study is a relational study that tests whether loneliness can play a mediating role in the relationship between young adults' maladaptive thinking and emotional expressivity. The main purpose of relational research is to determine whether two or more variables change together. If a relationship is found, determining the direction and degree of it is also within the scope of relational research (Akbay, 2019).

SAMPLE

Our participants consisted of 1042 Turkish-speaking college students. The distribution of participants was as follows: 285 (27.4 %) were first-year students, 257 (24.7 %) were second-year students, 277 (26.6 %) were third-year students, and 223 (21.4 %) were fourth-year students. 776

(74.5%) of the participants are female and 266 (25.5%) of them are male. The ages of the participants ranged from 17 to 28, with a mean age of 20.02 and a standard deviation of 1.69.

DATA COLLECTION

In the study, the "Maladaptive Thinking Styles Scale" was used to determine the maladaptive thinking styles of the participants, the "Berkeley Expressivity Scale" to determine the emotional expression levels and the " Short Form UCLA Loneliness Scale" to determine the levels of loneliness. Comprehensive information about the measurement tools used in the study is presented below.

MALADAPTIVE THINKING STYLES SCALE

This scale was used to measure the maladaptive thinking styles of the participants. The scale was developed by Koç and Arslan (2021). The Maladaptive Thinking Styles Scale consists of three sub-dimensions. These; dilemmas, traps, snags. The scale consists of 10 items (e.g. “I will not be able to do what I want to do because of people close to me.”, and “I will either try controlling everything and get overwhelmed or I will give up control and panic.”). Individuals are asked to answer the scale as a 5-point Likert type (1 = None and 5 = Always). The authors found that the items explained 57.8% of the total variance and had acceptable internal consistency (Cronbach alpha = 0.81).

BERKELEY EXPRESSIVITY SCALE

It was developed to measure behavioral (eg facial, vocal, postural) changes in emotional experiences. The scale was developed by Gross & John (1995). The Berkeley Expressivity Scale consists of three sub-dimensions. These; positive expressivity, negative expressivity, impulse strength. The scale consists of 16 items (e.g. “I experience my feelings very intensely” and “I laugh when someone tells me a joke that sounds funny”). Individuals are asked to answer the scale as a 7-point Likert type (1 = None and 5 = Always). The Turkish adaptation of this scale was made by Akın (2011). In the Turkish version of the scale, the authors found that the items explained 58% of the total variance and had acceptable internal consistency (Cronbach alpha = .74-.84). The Cronbach Alpha reliability coefficient obtained in this study is .82.

UCLA LONELINESS SCALE (ULS-8)

It was developed to measure the feeling of loneliness. The scale was developed by hay and DiMatteo (1987). UCLA Loneliness Scale consists of unidimensional. The scale consists of 8 items (e.g. there is no one I can refer to. I feel excluded). Individuals are asked to answer the scale as a 4-point Likert type (1 = Not at all suitable and 4 = Fully suitable). The Turkish adaptation of this scale was made by Doğan, Akıncı-Çötok, Göçet-Tekin (2011). As a result of the explanatory factor analysis, a single dimension compatible with the original form, which explains 36.69% of the total variance, was determined. Internal consistency reliability coefficient was reported as 0.72 in the Turkish version of UCLA Loneliness Scale (ULS-8). The Cronbach Alpha reliability coefficient obtained in this study is .82.

DATA ANALYSIS

The relationships among maladaptive thinking styles, loneliness, and emotional expressivity of young adults were analyzed with the structural equation model (SEM). This study was conducted in two stages as suggested by Kline (2019). In two-stage structural equation models, the structural model is tested after the measurement model is tested. In this study, parceling was carried out with the balancing approach to obtain the latent variables of loneliness. In the balancing approach, items are ranked according to item-total correlations. Then, the items with the lowest correlation value and the highest correlation value are assigned to the first parcel, the following items to the second parcel, and the following items to the third parcel. This type of parceling yields better results than a one-dimensional structure (Little et al., 2002). The frequency, mean, standard deviation, skewness, kurtosis, correlation and reliability analysis in the study was conducted with the IBM SPSS Statistic 21 program. Structural equation modeling and bootstrapping were performed using AMOS Graphics program.

FINDINGS

DESCRIPTIVE STATISTICS AND CORRELATIONS OF VARIABLES

As shown in Table 1, all variables are statistically significant, except for some of the maladaptive thinking style subscales of impulse intensity and their meaningless relationships with some of the loneliness parcels. Impulse intensity and maladaptive thinking styles are completely meaningless with their sub-dimensions. The impulse intensity is meaningless with parcel 2 and parcel 3 from loneliness plots.

Maladaptive thinking styles with positive expression (r = -. 28, r = -. 23, r = -. 23) and loneliness (r = -. 43, r = -. 36, r = -. 37, respectively) are in the negative direction. has a meaningful relationship. Also, maladaptive thinking styles with negative expression (r = -. 19, r = -. 16, r = -. 12) and loneliness (respectively r = -. 22, r = -. 25, r = -. 18) are negative. It has a meaningful relationship in the direction. However, the impulse intensity has a significant negative relationship with parcel1 (r = -. 18) from loneliness parcels.

Table 1. *Descriptive statistics and correlations (N = 1042)*

	1	2	3	4	5	6	7	8	9
1. positive expressivity	-								
2. negative expressivity	.39**	-							
3. impulse strength	.33**	27**	-						
4. dilemmas	-.28**	-.19**	.01	-					
5. traps	-.23**	-.16**	-.06	.41**	-				
6. snags	-.23**	-.12**	-.01	.44**	.30**	-			
7. lon. pars1	-.43**	-.22**	-.18**	.30**	.17**	.20**	-		
8. lon.pars2	-.36**	-.25**	-.05	.40**	.21**	.30**	.55**	-	
9. lon.pars3	-.37**	-.18**	-.06	.37**	.17**	.31**	.52**	.63**	-
Mean	21.68	24.88	31.89	7.19	8.74	7.79	4.99	4.83	3.11
SD	3.99	5.91	5.88	2.71	2.82	2.61	1.47	1.91	1.23
Minimum	6	6	11	3	4	3	3	3	2
Maximum	28	42	42	15	20	15	12	12	8

Note. SD= Standard deviation; Lon.Par= parcels of Lonelines

As shown in Table 6, the dilemmas are positively relationship with the parcels of loneliness (respectively r = .30, r = .40, r = .37); the traps are positively relationship with parcels of loneliness (respectively r= .17, r=.21, r=.17); the snags are positively relationship with parcels of loneliness (respectively r= .20, r=.30, r=.31).

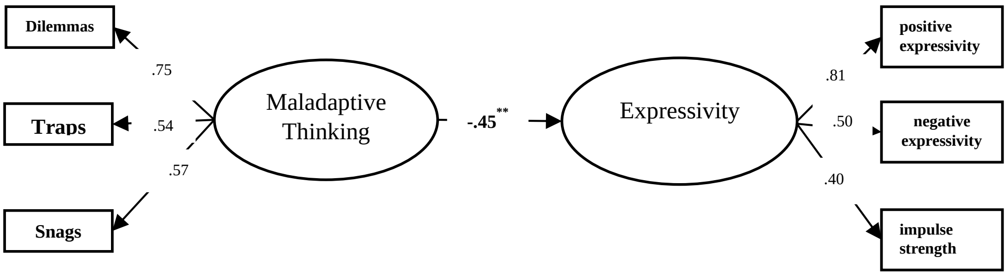
TESTING THE MEASUREMENT MODEL

The measurement model of the relationships between emotional expressivity, maladaptive thinking styles and loneliness was tested. Standardized regression coefficients ranged from .38 to .86 (p <.01). In the measurement model, the data have acceptable goodness-of-fit indices ($\chi2$ (24, N = 1042) =133,757, p <.001; GFI = 0.97; CFI = 0.95; NFI = 0.94; TLI = 0.93; SRMR = 0.05; RMSEA = 0.07). According to Kline (2019), in the measurement models, all path coefficients should be significant, goodness-of-fit values should be within acceptable limits, and the paths between variables should be less than 85. Additionally, for the normal distribution of the results obtained from the variables, the skewness and kurtosis values should be between –2 and +2 (Bachman, 2004). In this study, the paths between the variables varied between-.56 and .59, and the skewness and kurtosis values ranged between -.69 and 1.20.

TESTING THE STRUCTURAL MODEL

To test the mediating variable effect of loneliness on the relationship between maladaptive thinking styles and emotional expressivity, a three-step regression analysis proposed by Baron and Kenny (1986) was conducted. Baron and Kenny state that to mention a mediating effect, there must be three situations: (1) The independent variable (maladaptive thinking styles) must affect the mediator variable (loneliness). (2) The independent variable (maladaptive thinking styles) should affect the dependent variable (emotional expressivity). (3) When the mediator variable (loneliness) is included in the regression analysis in the second step, the effect of the independent variable (maladaptive thinking styles) on the dependent variable (emotional expressivity) should decrease, while the intermediate variable (loneliness) should have a significant effect on the dependent variable (emotional expressivity). Two different models were tested to investigate the mentioned effects. The effect of the independent variable on the dependent variable is presented in Model 1. Path analysis results with latent variables in Model 1 are presented in Figure 1.

Figure 1. *Model Structural Equation Model Test Results Between Maladaptive Thinking Styles and Expressivity.*

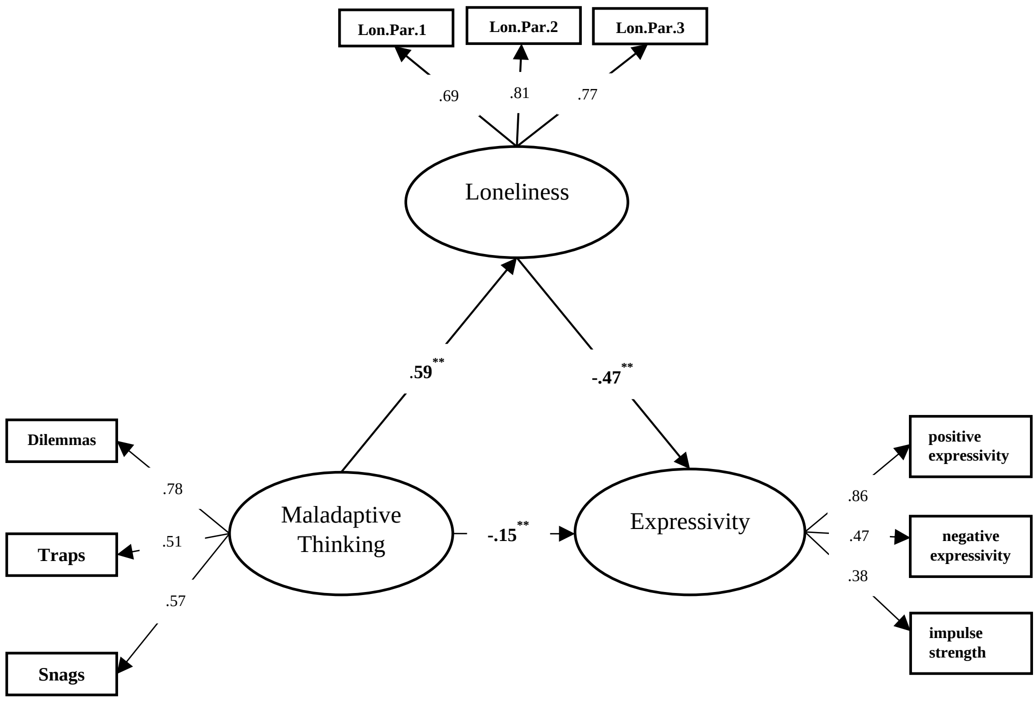


Note. N = 1042; ***p <0.01*

It is seen that the path coefficients in the structural equation model that affect the emotional expressivity of maladaptive thinking styles of young adults presented in Figure 1 are significant. Considering the effects obtained as a result of SEM, maladaptive thinking styles negatively predicted emotional expressivity (β = -. 45, p <.01). Considering the goodness of fit indices of Model 1, all goodness of fit indices are at acceptable levels. Model 1's goodness of fit indexes is as follows; 2 (8, N = 1042) = 43.716, p <.001; GFI = 0.99; CFI = 0.96; NFI = 0.92; TLI = 0.92; SRMR = 0.04; RMSEA = 0.06. As a result of Model 1, the condition that the independent variable put forward by Baron and Keny for mediation affects the dependent variable is provided.

Model 2 was investigated to test two effects. First, this model was determined the effect of the independent variable on the mediator variable. Second, when the mediator variable was included in the regression analysis, it was tried to determine whether the effect of the independent variable on the dependent variable decreased or not and the effect of the intermediate variable on the dependent variable.

Figure 2. *Structural Equation Model Test Results Among Maladaptive Thinking Styles, Expressivity, and Loneliness*



Note. N = 1042; ***p <0.01.*

As shown in Figure 2, loneliness is partially mediated in the relationship between maladaptive thinking styles and emotional expressivity, and it is seen that all path coefficients are significant. According to Model 2, maladaptive thinking styles predicted loneliness positively (β = .59, p <.01), loneliness negatively predicted emotional expressivity (β =-.47, p <.01), maladaptive thinking styles predicted emotional expressivity negatively (β =-.15, p <.01). When the indirect effect is examined, the standardized indirect effect coefficient in which maladaptive thinking styles affect emotional expressivity mediating of loneliness is-.28.

Considering the goodness of fit indices of Model 2, all goodness of fit indices are at an acceptable level. The goodness of fit indices of Model 2 are as follows; $\chi 2$ (24, N = 1042) = 133.757, p <.001; GFI = 0.95; CFI = 0.95; NFI = 0.94; TLI = 0.93; SRMR = 0.045; RMSEA = 0.066. As a result of Model 2, the condition that the independent variable put forward by Baron and Keny has a significant effect on the mediating variable was provided for mediation. Additionally, when the mediator variable was included in the regression analysis in the second step, the effect of the independent variable on the dependent variable decreased, while the condition that the mediating variable had a significant effect on the dependent variable was provided. In conclusion, considering the above-mentioned values, loneliness shows a partial mediation between maladaptive thinking styles and emotional expressivity. At this point, it can be stated that maladaptive thinking styles in young adults can directly reduce emotional expressivity, as well as weaken the emotional expressivity by increasing loneliness. To provide additional evidence on whether the direct and indirect effects of this model are significant or not, the bootstrapping coefficient and the lower and upper limits of the 95% confidence intervals (C.I.) as a result of the bootstrapping process performed through 10,000 resampling are presented in Table 2.

Table 2. *Bootstrapping Results of the Model*

Model Paths	Coefficient	95% C.I.	
		Lower Limit	Upper Limit
Direct effect			
Maladaptive Thinking Styles → Loneliness	.59	.52	.66
Maladaptive Thinking Styles → Expressivity	-.15	-.27	-.05
Loneliness→ Expressivity	-.47	-.58	-.36
Indirect effect			
Maladaptive Thinking Styles → Loneliness → Expressivity	-.28	-.36	-.21

It is stated that the effect examined is significant when the confidence intervals do not include zero in the bootstrapping process (Preacher & Hayes, 2008). As seen in Table 2, it can be concluded that all the effects in the model are significant. The bootstrapping confidence intervals of both direct and indirect effects exclude zero lower and upper bounds. Therefore, it can be stated that the bootstrapping process supports the conclusion that the maladaptive thinking styles of young adults affect emotional expressivity through loneliness. In this study, first, direct effects and then indirect effects were discussed in line with the findings obtained from the model established on the basis of the theoretical infrastructure.

DISCUSSION AND CONCLUSION

In line with the expectation of the study, it was seen that maladaptive thinking styles had a direct effect on emotional expressivity. As the level of maladaptive thinking style increases, the level of expression of emotion decreases. The interaction of emotions and thoughts occurs in both emotion theories (Frijda, 1993; Izard, 1993; Lazarus, 1991) and counselling theories (Beck, 1976, Dryden, 2012; Ellis, 1962; Ryle & Kerr, 2002). According to cognitive theory, if the thought structures of individuals can be determined, it can predict both how individuals emotionally react to stressful events and inferences during these events (Dryden, Ferguson, & Clarck, 1989). Cognitive theories focus on changing negative thoughts by creating awareness of thoughts that negatively affect individuals' emotions and behaviours (Beck, 1976, Dryden, 2012; Ellis, 1962; Ryle & Kerr, 2002). Repetitive maladaptive patterns of interpersonal behaviour and emotions result from individuals' cognitive distortions (Beck, Davis, & Freeman, 2015). Faulty thoughts are incompatible thoughts that disrupt the functionality of the individual. Individuals with faulty thinking styles tend to view life negatively. Negative perspectives on life and the emotions they create cause psychological problems in the individual (Ellis, Harper, & Powers, 1975). Negative emotions experienced can easily be expressed by some individuals and not by others. Emotions that cannot be expressed create a residual experience in individuals (Akkoyun, 2001). Expressing emotions provides an opportunity for insight by creating a cognitive structure on the life of the individual (Pennebaker, 1989; Saad & Kamel, 2020). Types of therapy such as psychoanalytic theory (Freud, 1957), individual-cantered therapy (Rogers, 1961), Gestalt therapy (Voltan-Acar, 2019), and emotion-focused therapy (Greenberg, 2018) from psychological counseling theories state that expressing emotions contributes to the psychological health of the individual. Therefore, it can be expected that there is a negative relationship between maladaptive thoughts that can cause psychological problems and emotional expressivity that contribute to psychological health.

The finding of the study is consistent with the findings in the literature that cognitive distortions positively predict suppression of emotions (Chung, Jalal, & Khan, 2014) and that there is a positive relationship between depressive symptoms caused by cognitive distortions and suppression of emotions (Yıldız, 2017). Both cognitive distortions and suppression of emotions are factors that negatively affect the psychological health of the individual. Therefore, it is thought that there is a positive relationship between the two variables. Since the suppression of emotions can be considered as the opposite of emotional expression, the results of these studies support the findings of the study. Additionally, studies on the expression of anger, which is one of the basic emotions, have also reported findings similar to the results of the study. Additionally, the positive relationship between the inability to express anger healthily and cognitive distortions (Azoulay, 2000; DiGiuseppe and Froh, 2002) and irrational beliefs (Martin and Dahlen, 2004; Hazaleus and Deffenbacher 1985) also support the findings of the study. Cognitive distortions and irrational beliefs are similar to maladaptive thinking styles because they cause the individual to perceive events differently than they are. Although these concepts are classified with different names by various theorists there is a deterioration in the functionality of life arising from the thoughts of the individual.

Another finding obtained as a result of the study is that maladaptive thinking styles directly affect loneliness. In this effect, a positive and significant relationship was found between maladaptive thinking styles and loneliness, and it was revealed that maladaptive thinking styles predicted loneliness significantly. This effect is the strongest in the model. According to cognitive therapy approaches, the cause of loneliness is the dysfunctional and unrealistic thoughts that individuals have (Burns, 1985). Young (1982) stated that it has clinical value to address negative automatic thoughts through cognitive-behavioural therapy to reduce the feelings of loneliness of people with a diagnosis of depression. Theeke et al. (2016) reduced the feeling of loneliness by restructuring maladaptive thoughts. Cognitive therapies are an effective method for understanding the development of loneliness and reducing feelings of loneliness (Hyland et al., 2019). Meta-analytical findings also concluded that addressing maladaptive cognitive processes can be an effective way to treat loneliness (Masi, Chen, Hawkley, & Cacioppo, 2011). As a result of all these results, a strong positive relationship can be expected between maladaptive thinking styles and loneliness.

Both studies conducted on university students and studies conducted on different groups show a parallel with the findings of the study. It has been revealed a relationship between university students' positive or negative evaluation of events and less loneliness or more loneliness (Anderson, Horowitz, & French, 1983). In another study conducted with university students, it was stated that cognitive distortions, especially cognitive distortions related to avoidance of intimacy, were effective on loneliness (Hamamcı & Duy, 2007). A finding similar to this finding was reported by Hoglund and Collison (1989) in a study on university students, which reported a significant and positive relationship between irrational thoughts and the level of loneliness. Additionally, in another study conducted on university students, the result that irrational beliefs in rational emotional behavioural therapy (obligations, catastrophizing, self-deprecation) explained 36% of the variance in loneliness was obtained using the structural equation model (Hyland et al., 2019). Finally, in a five-year longitudinal study conducted on older adults, it was reported that there was a positive correlation between depressive symptoms caused by cognitive distortions and loneliness (Cacioppo, Hawkley, & Thisted, 2010). Considering these findings in the literature the inconsistency in the mentality of individuals is related to the feeling of loneliness. Additionally, maladaptive thoughts can be considered a factor that cause the individual to feel lonely. Therefore, the stated findings support the study findings.

Another finding obtained as a result of the study is that loneliness directly affects emotional expressivity. In this effect, a significant negative relationship was found between loneliness and emotional expressivity, and it was revealed that loneliness significantly predicted emotional expressivity. Most emotional experiences are expressed in social environments (Averil, 1982; Kemper, 1991). People state that they are happier when they are with their friends than when they are alone (Csikszentmihalyi & Hunter, 2003). Individuals who are not in a social context are more likely to feel joy, anger, and sadness than those in a social context (Babad & Wallbott, 1986). As social skills decrease, the level of loneliness increases (Hamarta, 2000). The individual who feels lonely may not express his feelings by thinking that others cannot understand him. For these reasons, a negative relationship can be expected between loneliness and emotional expressivity. Like the findings of the study between emotional expression and loneliness, studies conducted on university students (Akın, 2012; Burgin et al., 2012) concluded that there is a negative relationship between loneliness and emotional expression. Additionally, it is stated that loneliness reduces the expression of non-verbal emotion (Gerson & Perlman, 1979). These findings in the literature are consistent with the study findings. Only one study was found in which no significant relationship could be found between loneliness and emotional expression. This study was conducted by Kumar (2015) with 60 people over the age of 60, and it was reported that there was no significant relationship between emotional expression and loneliness at the end of the study. It is thought that the difference between the findings may be due to the age difference in the study groups or the number of people in the study group.

The indirect effect in this study is also significant. It has been understood that the effect of maladaptive thinking styles on emotional expressivity is both direct and indirect. It has been determined that loneliness mediates the relationship between maladaptive thinking styles and emotional expressivity in young adults. As maladaptive thoughts increase, the level of loneliness increases, and as loneliness increases, the level of emotional expressivity decreases. While maladaptive thoughts can directly reduce emotional expressivity; however, it can indirectly reduce emotional expressivity through loneliness. According to many theorists (Beck, 1976; Ellis, 1958; Ryle, 1991), emotions mediate the thought-behaviour relationship. From this viewpoint, the maladaptive thoughts of individuals can cause them to feel negative emotions. Individuals with maladaptive thoughts may make inferences that the events they encounter will result in negative outcomes or that an obstacle will appear in front of them while performing the behaviour. Some implications may be related to social relations. Information processing errors in social relations mediate the individual's feeling of loneliness (Cacioppo & Hawkley, 2009; Qualter et al., 2013). Loneliness is a feeling that harms the individual in both social and emotional dimensions (de Jong Gierveld et al., 2006). While negative and dysfunctional perceptions in social relations may cause the individual to withdraw socially, they may also have a negative effect on the individual's expression of emotions. Therefore, individuals without realistic thoughts about themselves and their environment may feel lonely by having problems in interpersonal relationships, and emotional expression behaviour may decrease due to this loneliness.

The current study has several limitations. First, the participants consist of students enrolled in two different universities. In the study, in which a convenient sampling method was used, this limitation was tried to be overcome with the bootstrapping method. Second, the number of female participants in the study is considerably higher than that of males. It is recommended to test the researched model with more balanced participants according to gender. Despite these limitations, this study has an important contribution to the literature as it reveals that maladaptive thinking reduce emotional expressivity and do this through the feeling of loneliness. During group counselling/psychoeducation activities aimed at reducing maladaptive thoughts, the feeling of loneliness can be reduced by focusing on purposes such as developing social skills, providing social support, and coping with loneliness. Thus, it can be contributed to increasing the emotional expressivity of individuals who have maladaptive thinking and feel loneliness.

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Motivations of Turkish Children Living Abroad to Use Turkish in terms of Self-Determination Theory[*]

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Abstract

The subject of this study, which is based on situations encountered in the education process, is to determine the sources of motivation for the use of Turkish-by-Turkish children living abroad. For this purpose, this study was designed with a case study. In accordance with the study design, 12 Turkish children aged 12 and18 living in Belgium, formed the study group of the research. A semi-structured interview form was used as a data collection tool. The data were analyzed by content analysis. Based on the data obtained, when all age groups are evaluated in general in terms of Self-Determination Theory, it is seen that the dimensions of autonomy, competence and relatedness in the theory and the answers received are related. When we look at the sources of motivation within these dimensions, it is seen that the extrinsic motivation is dominant in all age groups, depending on the extrinsic regulation (demand), introverted regulation (necessity, conditional self-confidence), determined regulation and unified regulation, but extrinsic motivation is directly proportional to the increase in age It has been concluded that the internal motivation elements change by changing within the internalization and integration process.

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INTRODUCTION

As a result of migration out of the country, it is seen that there are new generations born abroad. It can be said that certain problems are experienced during the transfer of teachings between generations and these problems increase with each new generation. In this respect, due to the deficiencies in learning the mother tongue of Turkish people living abroad in this half-century-long migration process, the Ministry of National Education tries to meet these needs by sending Turkish language teachers to teach Turkish language, cultural and religious values to children (Irmak, 2016).

It is seen that similar activities are carried out in most countries to meet these needs. At the beginning of the need for these activities to be carried out, the number of people speaking Turkish language as a mother tongue in today's Europe (approximately 5.5 million) is more than the population of some European countries (Kalenderoğlu and Zorluoğlu, 2018). Considering the number of Turkish people in the Belgian population, it is important to provide education opportunities to Turkish people and to transfer national values to the next generation.

In the process of realizing this important situation, it should not be ignored that the Turkish people are subject to compulsory education in Belgium and they are educated in general education; because it can be said that additional obligations may be imposed on individuals who are in the education process. Manço and Manço (2017) found that 90% of Turkish people living in Belgium received their high school degree; but 60% of those who have the ability to speak, read and write French or Dutch (as required by the degree) stated. For this reason, it can be said that Turkish people experience the biggest problem in the education system about language learning. When students of Turkish people do not make an effort to learn the official languages used in the Belgian education system and their lack of knowledge in Turkish language is added, it is reported that they are the subject of complaints in the schools they study (Sarıkaya, 2014).

As can be seen, it can be said that being in a country with three official languages, such as Belgium, will make the situation even more difficult for students. In the study conducted on this subject, it was determined that individuals of Turkish people mostly learned Turkish language in communication within the family and in Turkish TV programs, and that a small number of them learned as a result of taking Turkish language courses (Aydogu, Gundogdu and Ercanlar, 2020). As can be seen, it can be said that the fact that students do not receive or cannot receive education in Turkish both affects the language in which they are educated and makes it difficult for them to experience the sense of belonging. In order to be a solution to these problems, in line with the language and cultural influence agreements between Turkey and some regional administrations of Belgium, Turkish Language and Turkish Culture Course is offered outside school hours in some institutions, and with the participation of Turkish language teachers in some institutions under the name of Opening to Languages and Cultures Course. It is seen that it has started to be taught in French, and Turkish associations are trying to continue the same course with the support of the embassy (Solmaz, 2019). Despite these solution-oriented studies, it can be thought that some conditions will create obstacles for immigrants of Turkish people in learning Turkish language. In this context, Bekar (2018) states in his study that the Belgian government works on Turkish language, which it sees as an obstacle in the process of integrating citizens of Turkish people with various policies, and that the Turkish identity is in danger in Belgium for these reasons. It can be said that Turkish people reduce their belonging to Turkish language and Turkey if they use the language in which they were educated at school and in the social environment.

Kalenderoğlu and Zorluoğlu (2018) showed that one of the main problems experienced by Turkish people living abroad is that they do not have enough command of their own language and culture. Cemiloğlu and Şen (2012) in a study in which they discussed the attitude dimension, which is one of the situations that can cause this inadequacy, stated that the attitudes of Turkish children in Belgium towards their mother tongue (none, few, medium, high and full value ranges) are at a good level. In the study of Cemiloğlu and Şen (2012), this positive attitude towards mother tongue was revealed as more common problems in the research of Irmak (2016). In this study, Irmak (2016) examined the textbooks used by revealing the problems encountered in teaching Turkish language to Turkish children living in Belgium. In the study, the thought that the use of mother tongue will make it difficult to learn the official language, the lessons are given outside school hours in schools or on weekends in associations, the measurement and evaluation in the lessons cannot be done completely, the teaching environment is insufficient in terms of physical and educational technologies, the report cards cannot go beyond being symbolic and the curriculum is heavy. Moving on from the problems raised about the materials used in the education process, on the confusion of information created by the problematic progress in the education process, Şen (2016) in his study to determine what kind of mistakes Turkish children living in Belgium made in their written expressions in their mother tongue, spelled letters incorrectly; misuse of period, comma, apostrophe, not paying attention to vowel harmony; resulted in the wrong use of capital letters. In the study, which aims to reveal the situation created by the factors affecting the education process of Turkish children, Bekar (2018) has reached the conclusion that the Turkish identity is in danger in Belgium today, the participation in Turkish language lessons is decreasing with each passing year, and new generations are raised who have difficulties in speaking Turkish language.

In the light of the results obtained from the studies, it can be said that the problems experienced in the education process in Belgium continue. In the studies on revealing these problems, it is seen that teaching Turkish language to Turkish children in Belgium is handled from different perspectives, but the studies focus on the existing situations of children and families living in Belgium. Based on the aims of the studies, the basic problems and the psychological factors underlying these problems were not addressed by relating them to language skills. In this study, prepared in this context, the Turkish language learning status of Turkish children living in Belgium and their psychological basis were investigated through Self-Determination Theory and it was tried to reveal how the motivation sources of the students were. It is known that motivation is an important motivator in the development of listening, reading, speaking and writing skills. The reason why this study is based on Self-Determination Theory is to provide a more concrete presentation of motivation for basic language skills by basing it on a theoretical framework. In this respect, it is thought that the research will serve a deficiency in the literature. In addition, it can be said that the motivation sources determined for the use of Turkish language will guide the action plans to be made.

Based on the shortcoming that is tried to be revealed, the subject of this study is to determine the sources of motivation for Turkish children living abroad to use Turkish language. Motivational sources were examined in terms of Self-Determination Theory developed by Edward Deci and Richard Ryan. In Self-Determination Theory, there are three basic psychological needs called autonomy, competence and relatedness. In theory, it is accepted that basic psychological needs are universal (Ryan & Deci, 2020). According to the theory, the satisfaction of these needs is necessary for the well-being of individuals (Ryan & Deci, 2020). For this purpose, it has been tried to determine the opinions of Turkish children living in Belgium about feeling autonomous and competent in terms of using Turkish language and their use of Turkish language in their social relations.

For this purpose, it is to answer the following questions:

1. What are the views of 15-year-old children living in Belgium in terms of autonomy?
2. What are the views of 15-year-old children living in Belgium in terms of competence?
3. What are the views of 15-year-old children living in Belgium in terms of relatedness?

METHOD

RESEARCH DESIGN

It is known that scientific research is based on different perspectives and paradigms. Because paradigms have a functional role in making sense of reality (Peca, 2001) and bring scientific research processes under a certain discipline (Guba, 1990). It is known that in addition to the paradigm that forms the basis of a study, the method that carries that paradigm is also important. This research was designed with qualitative research as a method. The problem identified in the nature of qualitative research; questioning, interpreting and understanding (Klenke, 2016; Patton, 2014). The reason why the study was designed with the qualitative research method is that, as stated by Patton (2014), a certain event is tried to be understood in relation to the previous and subsequent processes of the phenomenon (Koç ve Korkmaz, 2020). The qualitative research method, which tries to explain certain events or phenomena in their natural environment by restricting them according to time and space, is called case study (Akyol, Ulutaş & Durdu, 2021, quoted from Chmiliar, 2010; Hancock & Algozzine, 2006). In this study, a case study was preferred since there is no study that concretely reveals the motivational sources that affect the Turkish language usage situations of Turkish children living in Belgium and the reflections of the Turkish language usage situations in real life. In addition, a controlled process was not designed while determining the Turkish language usage situations, and the event and phenomenon were tried to be revealed as they exist. The holistic single case design was used in this study, which is based on the examination of the motivations of Turkish children living in Belgium for the use of Turkish language in terms of Self-Determination Theory. The holistic single case design has generally been underappreciated in the literature and has been used to confirm or refute a theory (Yin, 2009). The reason why the holistic single case design was preferred in this study is to examine the motivational sources for the use of Turkish language based on Self-Determination Theory. In addition, no study has been found in the literature that previously associated the use of Turkish language with Self-Determination Theory.

SAMPLE

The participants of the study are Turkish children living in Belgium. While determining the participants, criterion sampling technique was used. In criterion sampling, the criteria are predetermined or determined by the researcher in line with the purpose of the research (Marshall & Rossman, 2014). Participating in Turkish language courses, living in Belgium as at least the second generation, being bilingual and volunteering were determined as criteria. According to the determined criteria, 6 participants were determined from 12, 13, 14, 15, 16, 17 and 18 age groups. Since this study is based on the data of the relevant master's thesis, the data of all 42 participants were not presented; because there is too much data. Instead, only the data of the 15-year-old group are presented. The reason for choosing the 15-year-old group is that it reflects the average age group of the participants. In addition, data reflecting all age groups were reached in this age group. For these reasons, the 15-year-old group generally reflects the generality of the study. For this purpose, a total of 6 students from the age group of 15 (3 females, 3 males) constitute the participants of the study. Ethics committee permission was obtained before the interviews with the participants, and since the participants were under the age of 18, a parent permission form was obtained from the families. While referring to the opinions of the participants in the findings section of the research, code participant expressions were determined. While determining these codes, firstly the age expression was written before a number, then the gender expression and the student information were stated as "KO" and "EO", and then each participant was stated in the findings section as follows: “15KO1, 15KO2, 15KO3, 15EO1, 15EO2, 15EO3”

DATA COLLECTION

In this study, an interview form was used as a data collection technique. The purpose of the interview as a data collection tool is a technique based on revealing the events and situations that are tried to be understood, questioned, and explained in relation to the experiences of the individual (Bengtsson, 2016). There are three types: unstructured, semi-structured and focus group interviews (Marshall, 1996). In this study, semi-structured interview form was preferred. Information on the development process of the semi-structured interview form is as follows:

Semi-Structured Interview Form: The purpose of the development of this form is to determine the opinions of Turkish children living in Belgium on the motivational sources for the use of Turkish language. While developing the interview form, the content of the research was taken as a basis (Merriam, 2013). In line with the aims of the research (Glesne, 2013), the questions were developed by scanning the literature. The developed questions were submitted to the opinion of 3 field experts working in the field of Turkish education to ensure cooperation and to be evaluated in terms of grammar, clarity, and content validity (Glesne, 2013). A pilot study was conducted with 6 Turkish children living in Belgium (Yıldırım & Şimşek, 2013) to understand whether the prepared form was well-prepared and whether it was comprehensible for the study group after receiving expert opinions. After the pilot application, the final form of the interview form was given. There are 19 questions in the developed semi-structured interview form. The questions follow an order from general to specific in line with the purposes of the research. The questions are as follows:

1. What have you done and continue to do to improve your Turkish language reading skills?
2. What do you think about the adequacy of your Turkish language reading skills?
3. How does your Turkish language reading skill affect your social relations?
4. What have you done and continue to do to improve your Turkish language listening skills?
5. What do you think about the adequacy of your Turkish language listening skills?
6. How does your Turkish language listening skill affect your social relations?
7. What have you done and continue to do to improve your Turkish language writing skills?
8. What do you think about the adequacy of your Turkish language writing skills?
9. How does your Turkish language writing skill affect your social relations?
10. What have you done and continue to do to improve your Turkish language speaking skills?
11. What do you think about the adequacy of your Turkish language speaking skills?
12. How does your Turkish language speaking skill affect your social relations?
13. Please, rank your listening, reading, speaking and writing skills according to your level of proficiency.
14. Please, rank your listening, reading, speaking and writing skills according to their level of importance to you.
15. What are the factors that support you while learning Turkish language and improving your Turkish language?
16. What are the factors that negatively affect you while learning Turkish language and improving your Turkish language?
17. Does being able to speak/read/write/listen Turkish make you a more important and valuable person in the eyes of people in Belgium? Why is that?
18. Is learning Turkish language important to you? Why is that?
19. Do you do anything to improve your Turkish language in your spare time?

DATA ANALYSIS

Content analysis technique was used in the analysis of the data. There is a deep analysis process in content analysis, the data and their relationship with each other are presented in detail (Yıldırım & Şimşek, 2013). In this study, the content analysis technique was preferred because it was desired to present the Turkish language use cases of Turkish children living in Belgium in depth. As a result of the content analysis, 72 codes were reached in the 15-age group.

The data of the research were shared with a field expert for the reliability of the research in relation to the codes. Likewise, the data was coded by the expert in that field. When the coding process of both experts was completed, they came together and talked about the codes. It is discussed why different codes are different. Reconciliation has been reached in disputes arising from the name difference. No changes were made in the codes that were different and did not reach consensus. At the end of the process, the coding consistency between the two field experts (Miles & Huberman, 1994: 64) was found to be 90%.

In order to increase the validity of the study, the following were done to ensure internal validity, external validity and construct validity (Yin, 2009):

INTERNAL VALIDITY

In order to increase the internal validity of the study, first of all, detailed information was given about the data collection process and the development process of the interview form, which is the data collection tool. In addition, the problem situation was tried to be clearly revealed and the reason why such a study should be done for the participants of the research and Turkish children living in Belgium was justified by relating it to the problem situation. In addition to these, while interpreting the findings, the explanations made with direct quotations were tried to be embodied.

EXTERNAL VALIDITY

Qualitative research methods do not have any concerns about generalization (Yıldırım & Şimşek, 2013). Therefore, it is not possible to talk about external validity in case studies as in quantitative methods; but it is possible to make an analytical generalization (Yin, 2009). The basis of this study is based on Self-Determination Theory. The whole process, from the development of the data collection tool to the discussion section, is based on this theory. Thus, an analytical generalization has been tried to be made thanks to this theory without worrying about generalization.

CONSTRUCT VALIDITY

In this study, the data collection process was recorded to ensure construct validity. Thus, the interview form was tried to be strengthened with video recording. In this way, it is aimed to prevent data loss. In addition, since the Turkish children constituting the participants were not competent in using Turkish language, the expressions that were not understood or that contained ambiguity were asked to the students, who were the data source, after the interview process was deciphered. Thus, what was meant to be said was verified and the analyzes were carried out. The comments were also tried to be made more accurately in line with these analyzes.

RESULTS

In this section, findings regarding the analysis of the data obtained in terms of Self-Determination Theory are given in line with the opinions of Turkish children aged 15 living abroad on the use of Turkish language. The findings were interpreted in line with the Self-Determination Theory. Table 1 presents data on the autonomy element of Self-Determination Theory.

Table 1. *Opinions of 15-Year-Old Children Living Abroad in Terms of Autonomy*

Theme	*Category*	*Code*	*f*
Autonomy	Reading	Reading books	6
		Turkish School	4
		Religious Sites	3
		Research	2
		Messaging with Family in Turkey	1
		Social media	1
	Speaking	Domestic communication	6
		Religious Sites	4
		Circle of friends	4
		Reading books	1
		Turkish School	1
		Social media	1
		Technology	1
		Speaking in Turkey	1
	Writing	Turkish School	3
		Messaging	3
		No need	1
		Correspondence	1
		Reading books	1
		Family support	1
		Religious Sites	1
		Research	1
	Listening	Movie-series-video	6
		Music	5
		Domestic communication	5
		Social environment	2
		Uneasiness	1
		Religious Sites	1
		Research	1

As can be seen from Table 1, 29 different codes have been reached in four basic language skill categories related to the element of autonomy. There are 6 different codes under the category of reading skill. Among these codes, the one with the highest frequency is "Reading books". The students' views on the book reading code are as follows:

"*I used to read Turkish language books.*" (15EO1).

"I have read the book several times. I can read, but sometimes I don't understand." (15EO2).

"*I haven't done much, but these days I want to read a book, in Turkish language. We haven't got it yet, but I want to buy a few, I want to start with them.*" (15KO3).

"*I read books and magazines in Turkish language. I subscribed to a 12-month magazine and I'm reading them. I am reading a Turkish language book.*" (15KO4).

As can be seen, reading Turkish language books is seen as an important tool for children to develop reading skills. The reason for this can be shown to be that children see it as the most easily accessible source to improve their Turkish language reading skills, or they may see books as more reliable sources for reading. It can be said that families also have an effect on this issue. Because families think that their children's Turkish language reading skills will be better thanks to books. In terms of frequency value, those that follow the code of "Reading Books" are the codes of "Turkish School" and "Religious Places". The data regarding the "Turkish School" code are as follows:

"*I was going to Turkish school when I was little, and I learned from there. I went to Turkish language lesson for 5 years.*" (15KO2).

"*I went to Turkish language lessons for about 2 years. Yes, I learned a little bit. I didn't continue because there is in kindergarten and then not*." (15KO3).

"*I went to Turkish school for six years. I learned writing, reading and speaking there.*" (15KO4).

The term "Turkish School" is generally used for Turkish language lessons offered by the Belgian Embassy of the Republic of Turkey. During the interviews, it is stated that in these courses, education is given on Turkish culture and history as well as Turkish language reading, writing, listening, speaking skills. For this reason, it can be said that one of the biggest influences on the development of children's Turkish language reading skills is Turkish language lessons. The data for the "Social Media" code, which is the lowest code in terms of frequency value, are as follows:

"*I connect on social media.*" (15KO1).

It can be said that the participants' following social media contributes to their Turkish language development. As seen in Table 1, another category that comes after reading skill is speaking. 10 different codes were reached under the speech category. The views on the " Domestic communication" code, which has the highest frequency of these codes, are as follows:

"*I am trying to speak Turkish language. I usually talk to my family.*" (15KO1).

"*I speak Turkish language with my family at home. They are developing.*" (15EO1).

"*I'm talking to my family.*" (15KO2).

"*I speak Turkish language in the family.*" (15EO2).

"*We try to speak more Turkish language at home. We try not to confuse it with Dutch. We try to pay attention, but it is difficult, we confuse. It is easier for me.*" (15KO3).

Turkish language is generally preferred at home. However, it can be said that this preference differs according to the level of Dutch or French language speaking. It can be said that the people who are contacted are generally spoken by making transitions between the two languages. It can be said that the fact that at least one of the parents comes from Turkey affects the communication within the family and for this reason, only Turkish language communication is compulsory. In order of frequency, the codes "Reading Books" "Turkish School" "Social Media" "Technology" and "Speaking in Turkey" have the same value. The views on the "Reading Books" code are as follows:

"*It contributes to reading books.*" (15KO4).

Considering the opinions of the participants, it can be said that it will make positive contributions to speaking skills when the effect of reading a book on vocabulary is considered. The views on the "Turkish School" code, which is the next code in order, are as follows:

"*We sang songs in Turkish language lesson. I served.*" (15KO1).

It can be said that the Turkish school played a major role in the development of speaking skills as a result of giving Turkish language lessons and following these lessons. The views on the "Social Media" code, which is the next code in order, are as follows:

"*I follow Turks on Instagram*." (15KO2).

It can be said that the participants' following social media contributes to their Turkish language development. The views on the "Technology" code, which is the next code in order, are as follows:

"*I use Turkish language on the internet.*" (15KO2).

Considering the opinions of the participants, it can be said that the technology that exists in everyone's life today contributes to learning Turkish language. Finally, the opinions on the "Speaking in Turkey" code are as follows:

"*I speak when I go to Turkey.*" (15KO1).

In the light of the interviews, it can be said that Turkish families living in Belgium come to Turkey every year during the holidays and visit their relatives. Thus, it can be said that these visits and interviews are of great importance in the display and development of speaking skills. As seen in Table 1, another category that comes after speaking skill is "writing". 8 different codes were reached under the category of writing. Among these codes, the ones with the highest frequency are "Turkish School" and "Messaging". The views on the "Turkish School" code are as follows:

"*Then when I went to Turkish school, I learned better from there. Writing in Turkish language is easy because you hear all the letters when you write. Easy for me.*" (15KO2).

"*I can write. I understand when written. I can use Turkish language letters perfectly, yes. I can do ğ, ö, ü, ı. I went to a Turkish school and learned there.*" (15KO4).

It can be said that Turkish language lessons have a great contribution in the development of writing skills. Most of the children who attend Turkish language lessons stated that the development in their writing skills is thanks to these lessons. Another code with the highest frequency value is "Messaging". Comments on the "Messaging" code are as follows:

"*I can write, but I can't use things like the thing above the ğ. I know where to use it, I write from time to time. It's a habit. So is everyone here. I pay a little attention when I correspond with people in Turkey.*" (15EO2).

"*I have one cousin and we correspond with him from time to time. Sometimes I do wrong. For example, I have difficulties with ğ, ç or c, sometimes.*" (15KO3).

As stated, most of the children indicated messaging for their writing skills. However, they stated that they mostly did not use the letters in the Turkish language alphabet during these messages. Finally, the opinions on the "Research" code are as follows:

"*I look online if I don't know.*" (15KO3).

It can be said that the participants contribute to their Turkish language writing skills with any exercises they do using of Turkish language.

As seen in Table 1, another category that comes after writing skill is listening. 7 different codes were reached under the listening category. The views on the "Movie-Series-Video" code with the highest frequency value among these codes are as follows:

"…or watching a movie. I watch YouTube videos." (15KO1).

"*I am watching a film.*" (15EO1).

"*I'm watching a movie*." (15EO2).

"*I mostly watch Turkish language TV series.*" (15KO4).

During the interviews, almost all of the Turkish families living in Belgium received Turkish language news, series, movies, etc. through television. It can be said that they follow the programs. In this way, considering that children are constantly exposed to Turkish language programs at home, it can be said that its contribution to listening skills is great. In addition, it can be said that children mostly follow Turkish language videos on social media or the internet and prefer this way to improve themselves.

In addition to these findings regarding the autonomy component of Self-Determination Theory, the result of the content analysis related to competence, which is another element, is shown in Table 2.

Table 2. *Opinions of 15-Year-Old Children Living Abroad in Terms of Competence*

Theme	*Category*	*Code*	*f*
Competence	Reading	Partially Sufficient	3
		Sufficient	2
		Deficiencies in local use	2
		Insufficient	1
	Speaking	Sufficient	4
		Partially Sufficient	1
		Insufficient	1
	Writing	Partially Sufficient	3
		Sufficient	3
	Listening	Sufficient	5
		Partially Sufficient	1

As can be seen from Table 2, 11 different codes have been reached in four basic language skill categories related to the proficiency element. It was determined that the students mostly saw themselves as "adequate" or "partially sufficient" in reading, speaking, writing and listening skills. It is seen that the participants only feel inadequate in their reading and speaking skills. Based on the data, the participants consider themselves more competent in verbal communication. On the other hand, they see themselves as more inadequate in writing and reading skills compared to speaking and listening skills. The reason for this situation can be shown as the low use of Turkish language in their daily lives.

The result of the content analysis for relatedness, which is the last element of Self-Determination Theory, is given in Table 3.

Table 3. *Opinions of 15-Year-Old Children Living Abroad on Relatedness*

Theme	Category	Code	*f*
Relatedness	Reading	Binary Correspondence	4
		Friend Relations	1
		Disregard	1
		Strain in Turkey	1
		No	1
	Speaking	Sufficient	2
		Insufficiency	1
		Feeling Inadequate	
		Strengthening the bonds of Friendship	1
		Speech Anxiety	1
		No Difficulty in Turkey	1
		Strengthening Family Ties	1
	Writing	Sufficient	3
		Disregard	2
		No Difficulty in Turkey	1
	Listening	Sufficient	5
		No Difficulty in Turkey	3
		Strain in Turkey	1
		Family Relations	1

As can be seen from Table 3, 18 different codes were reached in the four basic language skill categories related to the "Relationship" element. There are 6 different codes under the category of reading skill. Among these codes, "Binary Correspondence" has the highest frequency value. The students' views on the "Binary Correspondence" code are as follows:

"*I understand what you wrote.*" (15EO1).

"*I'm texting, yes, but I can't explain myself very well. When the message comes, yes, I understand.*" (15KO2).

"*I can write, I can read. It affects my social relations positively. I feel good.*" (15KO4).

Looking at the interviews, it is seen that the skills of writing using pen, paper and reading are very low among the participants. However, in this code, it can be said that a participant does not have difficulty in communicating through correspondence and can communicate due to his high proficiency in reading skills. According to the order of frequency value, "Friend Relations", "Disregard ", "Strain in Turkey " and "None" codes have the same value. Opinions on the "Friend Relations" code are as follows:

"*When I am with my Turkish friends, there is no problem. It would have been more difficult if I had not known. If I didn't understand, I wouldn't be able to answer.*" (15KO1).

When we look at the interviews, it can be said that the element of relatedness is mostly in the family as well as in the relations of friends, considering that communication is usually made by understanding and responding to what is read during messaging in the category of reading. When looking at the ranking, the views on the next code, "Disregard", are as follows:

"*I don't think so because I don't read, I talk more.*" (15KO2).

During the interviews, it can be said that most of the children were not exposed to enough writing in Turkish language, they only considered Turkish language as communicating, therefore listening and speaking were given more importance. When looking at the ranking, the views on the next code, "Strain in Turkey", are as follows:

"*In Turkey, it is different with an accent.*" (15EO2).

Considering the interviews, it can be said that the element that the participants stated as an accent is actually the differences in letters, words or sentence constructions, and therefore the problem in communication actually arises as a result of insufficient use of skills. When looking at the ranking, the views on the next code, "No", are as follows:

"*It doesn't affect much here*." (15EO2).

In the process of relatedness, it can be said that the ineffectiveness stated by the participant has not yet encountered the writing skill at the level of necessity.

As seen in Table 3, another category that comes after reading skill is "speaking". 6 different codes were reached under the speech category. Among these codes, the code with the highest frequency is "Sufficient". Comments on the "Sufficient" code are as follows:

"*I can say anything. They understand what I am saying.*" (15EO1).

"*I can talk to people I want enough for me*" (15KEO2).

Considering the interviews, the participants stated that they were able to communicate with their Turkish language speaking skills in the category of relatedness. It can be said that most of the children participating in the research use speaking and listening skills more than other skills in communicating. In addition, it can be said that the participants feel competent in their speaking skills, contribute positively to establishing relationships, and communicate easily by speaking when they are in Turkey. In addition, it can be said that the fact that most of the participants think that they can speak Turkish language adequately makes them feel good. According to the order of the frequency value, "Inadequate/Feeling Inadequate" "Strengthening Friendship Bonds" "Speech Anxiety" "Not Difficulty in Turkey" "Strengthening Family Ties" codes have the same values. When looking at the ranking, the views on the code of "Inadequate/Feeling Inadequate" are as follows:

"*I can't explain myself that well. I make a lot of mistakes. When you can't explain it, I say to myself that you should be better.*" (15KO2).

Looking at the interviews, it can be said that the participants differ in the skills they use most, depending on whether they are in Belgium or Turkey. It can be said that the environments in which the participants feel comfortable while communicating, as well as the environments in which they do not feel comfortable, are separate, and therefore they experience fear of doing wrong and anxiety when they do not feel comfortable. When looking at the ranking, the views on the "Strengthening Friendship Bonds" code are as follows:

"*It didn't affect me much when I was younger. As I got older, I had more friends in middle school, and I used it there. I don't have any difficulties when I talk.*" (15KO1).

Considering the interviews, it can be said that the proficiency of the participants in speaking skills affects their communication positively and thus the established bonds become stronger. Considering the interviews, it can be said that speaking Turkish language with people who can speak Turkish language is the preference of the participants and as a result of this preference, it is felt more comfortable in communication. When looking at the ranking, the opinions about the "Speech Anxiety" code are as follows:

"*In a positive way. I'm not very hard. Sometimes I stutter, but when we talk, we understand each other.*" (15KO4).

As stated in the code of feeling inadequate, it can be said that the participants experience emotional changes as the reason for their lack of skills or the reason they feel as if they are incomplete. It can be concluded that this situation causes anxiety over time. When looking at the ranking, the views on the code "not to be forced in Turkey" are as follows:

"*I can communicate when we go to Turkey.*" (15EO1).

Looking at the interviews, it can be said that some of the participants felt self-confident and stated that they could express themselves in any situation, and thus they could communicate comfortably. Finally, the views on the "Strengthening Family Ties" code are as follows:

"*It wouldn't be good if I couldn't talk. I could never have a relationship with my father, my grandmother, or anyone in Turkey. It's a very good thing, I think I don't know Turkish language. It affected me a lot.*" (15KO3).

Considering the interviews, it can be said that the proficiency in speaking skills of the participants affects their communication positively and thus the family ties established are stronger.

As seen in Table 3, another category that comes after speaking skill is "writing". Three different codes were found under the category of writing. Among these codes, the opinions on the "Sufficient" code with the highest frequency value are as follows:

"*They usually understand what I write.*" (15KO1).

"*I can write well. I cannot communicate comfortably, sometimes it is not fluent. I may make mistakes, but the other person understands me.*" (15KO2).

"*I can answer. In the same way as speaking and reading*." (15KO4).

Looking at the interviews, it can be said that the participants felt themselves competent in writing skills and thus they were able to communicate. Again, it can be said that the participants mostly use their writing skills in messaging, as in the reading skill, and thus they communicate. It can be said that they feel good and happy when they communicate in this way. The views on the " Disregard" code, which is the next code in order of frequency value, are as follows:

“*Writing is not very important to me. We go to Turkey once a year, I don't come across with writing very often. I feel bad if my writing is bad when I can't speak.*” (15EO1).

"*Good. I don't use typing much.*" (15EO2).

During the interviews, it can be said that most of the children do not write enough in Turkish language, they only consider Turkish language as communicating, therefore listening and speaking are more important.

As seen in Table 3, another category that comes after writing skill is "listening". 4 different codes were reached under the listening category. Among these codes, the views on the "Sufficient" code with the highest frequency value are as follows:

“*I think the most important thing is to understand Turkish language. If you do not understand, you cannot answer. I can understand when others say something in Turkish language. When I don't understand, I ask in Dutch language.*” (15KO1).

“*I understand everything. I can answer anything. When I can answer, I feel good.*” (15EO1).

“*Everyone is the same here. I am not forced.*” (15EO2).

"*Positive. I can, I can make sentences when I speak. I can establish a dialogue.*” (15KO4).

Looking at the interviews, it was stated that, as in the answers given by the participants in the "Sufficient" code, a participant could communicate with his Turkish language skill under the code "No Difficulty in Turkey" and that he could use this communication sufficiently if he was in Turkey. For this reason, it can be said that the sense of self-confidence has a relationship with the subject of communicating in Turkish language and it has positive effects on communication. Opinions on the code of "No Difficult in Turkey", which has a high frequency value, are as follows:

“*I understand my relatives in Turkey very well. I don't have a problem with communication, yes.*" (15KO2).

“*I have an uncle and a grandfather in Turkey. I don't have a hard time talking to them." (15EO2).*

“I am talking to my family in Turkey.” (15KO3).

Considering the interviews, it can be said that the participants feel good that they do not have difficulty using skills in certain environments. However, it can be said that this sense of efficacy stabilizes the learning process and reduces the desire to learn in certain age groups.

DISCUSSION, CONCLUSION AND IMPLICATIONS

This study was carried out to determine the motivational sources for the use of Turkish language by Turkish children living abroad. Motivational sources were examined in terms of Self-Determination Theory developed by Edward Deci and Richard Ryan. Self-Determination Theory is based on three basic psychological needs, namely autonomy, competence, and relatedness; In theory, it is accepted that basic psychological needs are universal (Ryan & Deci, 2020). For this purpose, it has been tried to determine the opinions of Turkish children living abroad about feeling autonomous and competent in terms of using Turkish language and their use of Turkish language in their social relations. Looking at the literature, it is seen that many studies have been conducted on Turkish children living abroad. The studies that have been done, the theoretical reference to the subject (Aydogu & Karasu, 2017; Ergenç, 1993; Gümüşel, 2013), the compilation of the studies done (Ortaköylü, Satmış & Bircan, 2020; Şen, 2010), the program evaluation (Demir, 2010; Deniz & Uysal , 2010), determining teachers' opinions (Belet Boyacı & Genç Ersoy, 2015; Kalenderoğlu & Zorluoğlu, 2018; Can & Can, 2009; Şaşmaz

& Arslan, 2016), evaluating textbooks (Yeşilyurt & Keskin, 2020). This study differs from other studies in the literature in terms of both its purpose and the examination of language skills. In this study, Turkish children living in Belgium were taken as the study group and the motivation sources for the use of Turkish language were examined. There is a study conducted by Şen (2016), which is similar to this research in terms of determining Turkish children living in Belgium as the study group. In the study, Turkish children's written expression errors were emphasized. Another study on Turkish children living in Belgium belongs to Cemiloğlu and Şen (2012). In the related study, only the attitude towards language skills was examined. This study differs from other studies in the literature as it is examined from a multiple perspective in terms of proficiency, skill and applicability to four basic language skills.

When we look at the findings of the 15-year-old Turkish children's views on autonomy, the opinions of most of the students are related to the autonomy dimension of the Self-Determination Theory. Because autonomy is related to the initiative and sense of ownership in one's actions (Ryan & Deci, 2020). In this respect, it is seen that the 15-year-old students apply their own preferences in terms of improving their Turkish language, they do research to improve their Turkish language based on the emotional states they explain with justification in the process, and they accept their feelings by making self-evaluations. In some students, it is seen that there are elements that prevent the autonomy dimension. At the beginning of these elements, the control element and the targets imposed according to the exposure and imperative code data can be shown.

Looking at the proficiency dimension in general, it was concluded that the students felt competent in all four basic skills and did not experience much difficulty in using language elements. According to Self-Determination Theory, the findings of the study led to important results in terms of competence. Most of the students' opinions are related to the efficacy dimension of Self-Determination Theory. Because competence is related to the feeling that one can be successful and develop (Ryan & Deci, 2020). In this respect, it has been determined that 15-year-old students face appropriate difficulties in their communication with their immediate environment and receive positive performance feedback. In some students, it is seen that there are factors that prevent the proficiency dimension. At the beginning of these elements, it was concluded that there are extreme difficulties and negative performance feedbacks due to difficulties in using Turkish language.

According to the Self-Determination Theory, the findings of the study have reached important results in terms of being related. Most of the students' views are related to the feeling of being related, belonging and connected (Ryan & Deci, 2020). In this respect, when we look at the elements that develop relatedness in the context of Self-Determination Theory, it has been determined that 15-year-old students experience feelings of respect, interest and feeling safe in their inclusive environment. It is seen that some students have elements that prevent the dimension of being related, and it has been concluded that there are elements of the feeling that they receive criticism and that they have to fulfill the customs at the beginning of these elements.

Based on the evaluations of 15-year-old students in the Self-Determination Theory, it is seen that they are generally affected by external regulation (demand), internal regulation (obligation, conditional self-confidence), determined regulation and extrinsic motivation depending on combined regulation. It was concluded that very few students made internal arrangements with the presence of elements such as pure interest and curiosity in addition to external motivation, and some students had a feeling of indifference. For this reason, it can be said that 15-year-old students are in the process of extrinsic motivation to some extent.

Based on the findings of the study, the following recommendations can be made:

In order to increase the motivation of students, it is recommended to carry out studies focusing on the elements that support intrinsic motivation, especially in the autonomy dimension, in line with the Self-Determination Theory.

In the proficiency dimension, it is recommended to carry out educational studies to ensure that students receive Turkish language education at a level that they can see themselves competent in every environment and situation.

In the dimension of being related, it is thought that it will be useful to carry out studies that will create communication channels so that students can carry their relationship status in Belgium outside of Belgium.

Based on the finding that students prefer Turkish language for their language usage situations, it is suggested that studies should be carried out to increase the environments specified under the heading of supporting elements.

Based on the student opinions regarding the insignificance of Turkish language in Belgium, it is suggested that studies should be carried out to increase the motivation status of the Turkish language self and to reduce the presence of an obstructive environment.

AUTHOR CONTRIBUTION

- First author have made substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data
-The second author have been involved in drafting the manuscript or revising it critically for important intellectual content and have given final approval of the version to be published

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Disaster Education in Primary School: A Qualitative Research Based on Teachers' Opinions

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Abstract

This study aims to reveal the opinions of classroom teachers on disaster education in primary school. The study was conducted within the scope of phenomenology, one of the qualitative research methods, with 22 classroom teachers working in different regions of Turkey in 2020-2021 academic year. The study data was collected with the semi-structured interview method, and the collected data was analysed through content analysis. As a result of the study, it was determined that classroom teachers have knowledge and awareness about the concept of disaster, that disaster education is an urgent necessity for Turkey, and that disaster education is indispensable for preparing for disasters. In addition, it was stated that disaster education should be given through doing-living experiences and that these should be applied and made permanent. It has been determined that technology-supported disaster education provided using different teaching methods-techniques should not be limited to classrooms and be benefited from other environments. As a result, it was demonstrated that it is necessary to benefit from the power of education on the way to "Turkey Ready for Disasters" and "Education Year for Disasters" and that disaster education in primary school should be operative, permanent, concrete, doing-living, outdoor and technology supported.

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INTRODUCTION

Disaster is defined as the consequence of the inability to reduce the possible negative effects of events and vulnerability to hazards (Dey & Singh, 2006). In a more comprehensive definition, a disaster is the whole of nature, technology or human-induced events that cause losses in many different aspects of society, stop, or disrupt life and human activities and that the society affected by is insufficient in coping with (Disaster and Emergency Management Authority [AFAD], 2014). An increasing number of people are being affected by the effects of disasters worldwide (Codreanu et al., 2014). Disasters, which are the reflections of natural or human-induced events that cause conflicts, material-life losses, physical destruction, and economic problems, are global events that undoubtedly concern every society and country (Royagan, 2019). Although the importance placed on natural or human-induced disasters varies depending on a country's economic and political circumstances, disaster preparedness has become critical for many countries (Kitagawa, 2015). Many countries educate their populations for disasters to contribute to national security and mitigate potential damage and loss of life, although they make these preparations differently (Adiyoso & Kanegae, 2012; Chadderton, 2015; How et al., 2020). The lack of awareness of disasters is the most effective factor in the inadequacy of today's conditions against disasters and numerous losses of lives and property (Şengün & Küçükşen, 2019). The individuals correctly educated against disasters can prevent the consequences that risk their lives and many others. Undoubtedly, disaster preparedness is a priority in all parts of the world. Therefore, education against disasters to increase awareness is of vital importance for people and countries (Tsai et al., 2020).

An increasing number of people are being affected by disasters worldwide (Codreanu et al., 2014), and interest in disaster education has recently increased (Mangione et al., 2013; Torani et al., 2019). The term disaster education is derived from school safety in the current multi-hazard framework. As can be understood from this, disaster preparedness also includes school safety, a very important matter (Kitawaga, 2015). Regardless of what it is named, the preparedness of society, especially the youth and even students against disasters, is important (Irawan et al., 2018). Disasters, which strike regardless of race, gender, age and location (Adiyoso & Kanegae, 2012), are increasing worldwide. Today, disaster education is accepted as the only effective way to prevent disasters or reduce their effects in acquiring knowledge and transforming this achievement into action with technological progress (Torani et al., 2019). Disaster education is an important educational process that helps people learn what to do before, during and after a disaster or emergency, it provides a prevention and recovery process against many disasters (Duffy, 2018). Minimising the losses that occur in disasters is only possible with the awareness and education of society about disasters (Sever & Değirmenci, 2019). Undoubtedly, disaster education is gaining importance due to the increasing variety and visibility of disasters on both local and global scales.

Today, countries and international organisations emphasise the importance of disaster education (How et al., 2020). In line with this importance, many international studies have been carried out on disaster education (Mızrak, 2018). Although disaster education is a new branch of research in education (Preston, 2012), studies on disaster education have diversified and increased in recent years (Koç, Şeker, Evci & Doğan, 2020). The examination of the literature has revealed that there have been studies on the concept of Disaster (Cin, 2010; Değirmenci, 2019; Dikmenli & Gafa, 2017; Mönter & Otto, 2018) and types of Disaster (Rosidin & Suyatna, 2017), Disaster education theory (Fuhrmann et al., 2008; Koca, 2020; Mangione et al., 2013; Mızrak, 2018; Şengün & Küçükşen, 2019), Literature Reviews (Johnson et al., 2014; Sözcü, 2020; Torani et al., 2019), Disaster literacy (Sözcü & Aydınözü, 2019), school-based disaster education (Buitink, 2009; Sakurai et al., 2020; Shiwaku, 2011; Thi & Shaw, 2016), society based disaster education (Parajuli, 2020), disaster awareness (Pınar, 2017; Rogayan & Dollete, 2020; Sapsağlam, 2019), disaster experiences (Aksoy, 2013; Tuswadi & Hayashi, 2014; Yeon et al., 2020), education of disaster-related subjects (Gampell et al., 2020; Karataş, 2011; Tsai et al., 2015;

Tsai et al., 2015; Tuswadi & Hayashi, 2014; Yamori, 2009; Zavar & Nelan, 2020), textbook reviews (Tian et al., 2018), attitudes on Disasters and disaster education (Nakano et al., 2020), new approaches (Duffy, 2018; Rivera & Miller, 2008), country-wide disaster education and program reviews (Boon & Pagliano, 2015; Chadderton, 2015; Gwee, Takeuchi, Jet-chau & Shaw, 2011; Kitagawa, 2015; Sharpe & Kelman, 2011; Shiwaku,et al., 2007; Shoji et al., 2020; Tanaka, 2012; Zhu & Zhang, 2020), student perceptions on disasters (Coveleski, 2014), on the effects of disasters on children (Adebäck et al., 2018; Adiyoso & Kanegae, 2012; How et al., 2020; Mudavanhu, 2014; Peek et al., 2017), prospective teacher perspectives (Öcal, 2007) and teacher perspectives (Yusoff, et al., 2019) and teacher opinions (Çelik, 2020; Kırıkkaya & İmalı, 2013; Kırıkkaya, Oğuz-Ünver & Çakın, 2011; Maya & Sarı, 2018; Sarı, 2016; Taş, 2003; Turan & Kartal, 2011).

When the studies on disaster education were evaluated, it was determined that they were focused on students' awareness and knowledge levels on disasters, disaster education programs in schools, how this issue is portrayed in the media, attitudes and perspectives on disasters, education on disasters, planning and intervention for disasters, and student and teacher opinions on disaster education (Koç et al., 2020) and that the number of studies on the importance of disaster education in primary school is limited. As demonstrated by the review of the literature, the studies on disaster education practices in Turkey are quite inadequate. Communication with teachers is a critical factor in our education system, and disaster education needs to achieve its goals and be implemented without problems (Maya & Sarı, 2018). In this context, this study is important in evaluating the current situation in line with the views and experiences of classroom teachers and revealing the deficiencies in a multidimensional way.

It is believed that the disaster preparedness levels of teachers, who are the implementers of education, can be determined with this study and that it is significant as it will allow existing disaster education implementations at the primary school level to be structured in a better manner by determining their deficiencies by obtaining the opinions of teachers. The idea that teachers' level of preparedness for disasters will affect their students' gaining accurate knowledge, awareness, and experience about disasters is thought to be another indicator of the importance of the research (Çelik, 2020). In the scope of the fact that we live in a country of disasters and that classroom teachers are among the most important actors in dealing with this situation, it is critical to reveal their effects and suggestions on our children, who are the most vulnerable members of our society and our future, as well as revealing the deficiencies. Therefore, this study aims to reveal the opinions of classroom teachers on disaster education and disaster education in primary school. Within the framework of this purpose, answers were sought to the following questions:

Research Question 1. What is the knowledge and awareness of classroom teachers about the concept of disaster and disasters?

Research Question 2. What are the views of teachers on disaster education?

Research Question 3. What are the self-sufficiency views of the classroom teachers on the education of disaster-related subjects?

Research Question 4. What are the opinions of classroom teachers on ideal primary school disaster education?

METHOD

RESEARCH DESIGN

In this study, which aims to reveal the opinions of classroom teachers on disaster education and disaster education in primary school in an in-depth manner, the qualitative research method was employed. Phenomenology was employed as the research design in this study. Since the study aims to demonstrate the awareness and knowledge levels, self-sufficiency statuses, ideal disaster education suggestions, and teachers' experiences in a detailed manner, the phenomenological approach was adopted. Phenomenology studies are used to make sense of the common experiences of individuals about a concept or phenomenon (Creswell, 2007). The phenomenon in this study is the phenomenon regarding applications of Disaster education at the primary school level. “To describe the essence of a phenomenon by exploring it from the perspective of those who experienced it so as to understand the meaning participants ascribe to that phenomenon” (Therani, et al., 2015: 670). In this study, classroom teachers who have experienced the process personally make up the phenomenon.

STUDY GROUP

The criterion sampling method, one of the purposive sampling methods, was used to determine the interviewed teachers (Palinkas, et al., 2015). Purposeful sampling enables the in-depth study of cases that are considered to possess rich information (Patton, 1990). In order to obtain in-depth and varied information on the subject, it was ensured that the assignment locations (Antalya, Artvin, Bartın, Bingöl, Düzce, Elazığ, Erzincan, İstanbul, İzmir, Kastamonu, Muğla, Muş, Trabzon, Van) of the teachers are faced with different disasters. All participants experienced different types of disasters (Earthquake, Flood, Landslide, Drought, Avalanche, et. al.) at least once and are knowledgeable about the type of disaster they have experienced. In this context, it was attempted to establish a criterion by selecting teachers from seven different regions in Turkey since disasters affect different regions of Turkey differently. Moreover, attention was paid to ensure that teachers had taught four grade levels at least once. Interviews were held with 22 classroom teachers, 12 women and 10 men, in the fall semester of 2020-2021. These teachers are graduates of the classroom teaching undergraduate program and have 5-25 years of professional experience. In addition, while some of the teachers are graduates or continuing their postgraduate education, some of them work as school principals or assistant principals.

DATA COLLECTION

In order to elicit the opinions of classroom teachers on disaster education in primary schools, a semi-structured interview form consisting of open-ended questions was prepared by the researcher. Semi-structured interview questions prepared on the subject were first presented to three field experts, and necessary corrections were made in line with their feedback to give the form its final shape. In addition, a pilot interview was conducted with two teachers who were not in the study group and met the specified sampling criteria to test the comprehensibility and appropriateness of the interview questions. The data obtained from these teachers were not included in the study. After obtaining the necessary permissions, the researcher conducted the interviews online (with audio and video recording). The interview form consists of 12 open-ended questions.

DATA ANALYSIS

The participant opinions and experiences obtained within the scope of the study were analysed by content analysis to obtain in-depth data. Content analysis is a qualitative data analysis method that includes organising, classifying and comparing the obtained findings and reaching theoretical results (Cohen et al., 2007). The teachers' opinions were read in detail, divided into units, and coded using content analysis. Codes close to each other in meaning that had similar features were gathered together to form categories. The answers given by the teachers to the semi-structured interview questions were collected under themes and categories, and the created code was evaluated by calculating the frequency values. Two experts performed the analyses of the interviews at different times. Direct quotations from the answers given by the teachers to the interview questions were presented together with the analyses to increase credibility. In addition, codes such as Participant 1 (P1), Participant 2 (P2), and so forth were used instead of the participants' real names due to ethical concerns.

FINDINGS

In this section, the findings of the research are given under headings according to research questions.

FINDINGS REGARDINGS THE FIRST RESEARCH QUESTION

Participants' knowledge regarding the concept of disaster is given in Table 1.

Table 1. *Participants' Knowledge Regarding the Concept of Disaster*

Themes	*Categories*
Social Effect	Negative Events (P8, P12, P15, P16, P17, P18, P19 Effects on Society and Environment (P8, P10, P13, P15, P17, P18, P22) Loss of Property and Life (P1, P7, P8, P16, P19, P21) Material Damage (P1, P3, P7, P8, P10, P11) Life Disrupting Events (P6, P8, P12, P13) Chain-Sequence of Events (P5, P14, P16, P21, P22) Bureaucratic Problems (P2)
Psychological (Individual) Effect	Negative Events (P8, P12, P15, P16, P17, P18, P19) Material Damage (P1, P3, P7, P8, P10) Moral Damage (P1, P2, P3, P6, P7) Being Deeply Affected (P2, P4) Experience (P7, P10)
Natural Event	Nature-Human Induced (P1, P3, P8, P14, P16, P18, P22) Natural events (P7, P14) Effects on Living Beings (P12) Physical Loss (P11) Destructive Effect (P5)

As demonstrated by Table 1, the participants' perceptions regarding the concept of disaster were collected under three different themes. When the categories in the theme of social impact were examined, it was seen that the participants emphasised the aspect of disasters that disrupt and deeply affect social life. The views of Participant 12, who emphasised the negative aspects of disasters, are given below:

"When we think of disasters, we think of events that negatively affect the lives of people and all other living beings, disrupt their lives, or prevent them from continuing their lives normally." (P12).

As seen from the quote above, disasters negatively affect social life activities and daily life dynamics that are considered normal. Participants in the loss of life and property category drew attention to how disasters cause losses in both lives and property. To represent the views of the participants in this category, the views of the participant coded P7 are given below:

"I think of material or moral damages that occur as a result of events in nature. We have experienced this here. Disasters damage many individuals and cause losses in both life and property for many people. I haven't suffered from such disasters, but many in my family have." (P7).

As emphasised in the quote above, disasters cause human deaths and have negative material and moral effects on the lives of the survivors. Participant 2, who is in the category of bureaucratic problems, drew attention to the fact that the country experienced administrative difficulties due to disasters.

The participant in the psychological effect theme emphasised the personal effects of disasters. Since disasters generally cause loss of life and property, they have traumatic effects on individuals. Participant 6, who is in the category of moral damage, emphasised that disasters wear out people emotionally. However, the participants in the experience category explained the concept of disasters through their prior experiences of earthquakes and expressed their negative effects on their psychology.

Participants in the natural event theme drew attention to the fact that disasters are a reality of natural life. They emphasised that not just humans but all living beings are negatively affected by disasters. On the other hand, despite them being described as natural events, the influence of humans in the increasing number and severity of disasters were emphasised.

Participants' knowledge regarding the disasters is given in Table 2.

Table 2. *Participants' Knowledge of Disasters*

Themes	*Categories*
Natural Disasters	Earthquake (P1, P2, P3, P4, P5, P7, P8, P9, P10, P11, P13, P14, P,15, P16, P17, P18, P19, P20, P21)
	Avalanche (P1, P2, P3, P4, P5, P7, P8, P11, P12, P13, P14, P16, P18, P19, P21)
	Flood (P1, P2, P3, P5, P7, P8, P9, P11, P12, P13, P14, P15, P16, P19, P20)
	Tsunami (P2, P3, P7, P8, P11, P12, P13, P14, P16, P17, P18, P20, P22)
	Landslide (P1, P3, P7, P9, P11, P16, P17, P20, P22)
	Tornado (P1, P3, P12, P16, P21, P22)
	Cyclone (P3, P7, P12, P15, P16, P19)
	Erosion (P3, P5, P11, P16, P22)
	Drought (P2, P3, P4, P11, P18)
	Volcanic Eruptions (P3, P12, P16, P22)
	Storm (P7, P11, P16, P22)
Human-Induced Disasters	Fire (P1, P3, P4, P5, P7, P11, P12, P13, P16, P17, P19)
	Epidemics (P3, P4, P5, P8, P9, P10, P15, P16, P18)
	Global Warming (P3, P8, P9, P11, P15 P18, P21)
	Famine (P3, P4, P8, P15, P18)
	Pollution (P3, P19)
	Nuclear Disasters (P5, P19)
	Wars (P2)
	oBiological Warfare (P5, P11)
	oNaval Warfare (P4)
	oChemical Warfare (P5)
	oTechnological Warfare (P11)
Events	Frequency (P4, P7, P11, P13, P14, P16, P18, P2)

As demonstrated by Table 2, the participants' knowledge regarding disasters were collected under three different themes. Examination of the categories in the theme of natural disasters reveals that the participants stated these events that had the most impact on social life, left lasting effects and were the most common, both in the country and the region. Participant 7 stated her opinions regarding the natural disasters that occur in Turkey most frequently:

"The most frequent ones we see are earthquakes, floods and storms. As you may know, a Russian ship sank a few days ago due to a storm. Landslides also occur in our country frequently. It doesn't

happen here (Black Sea), but we experienced an avalanche in the east, and our soldiers were caught under it. Erosion is our country's general problem, and there is always forest fires. It didn't occur too many times this year, but forest fires are among the largest natural disasters." (P7).

As can be seen in the quotations above, natural events such as earthquakes, floods, avalanches and forest fires that frequently occur in Turkey negatively affect human life materially and morally and leave negative effects on human memory. The disasters in question occur frequently, and some are even discussed globally. Undoubtedly, disasters can occur naturally as well due to humans. Participants in the theme of human disasters emphasised that humans cause disasters and that people are often the cause of life and property loss. To represent the views of the participants in this theme, the views of Participant 7 are given below:

"...when I watched people who drowned in mud in the city (İzmir-Buca) I was watching during a flood, those images are engraved in my head, and I cannot forget their effects. I believe that humans are the cause for it to some extent, because if those areas were afforested in time or if the existing trees were preserved, at least this disaster wouldn't have happened." (P11).

As emphasised in the quote above, disasters leave negative memories in people's psyches. Both those who lost relatives and those affected by disasters directly are permanently affected by the consequences of disasters, including people who are not affected by them directly. Negative thoughts that have taken root in people's memories resurface when disasters come up. They experience the same negative thoughts even if they are not affected by that disaster, which partially affects social life.

The participants of the theme of experienced events emphasised that disasters frequently occur, that society suffers at different times and that disasters are inevitable for our country.

FINDINGS REGARDINGS THE SECOND RESEARCH QUESTION

Participants' knowledge regarding disaster education is given in Table 3.

Table 3. *Participants' Knowledge Regarding Disaster Education*

Themes	*Categories*
Disaster preparedness	Minimising possible damages (P1, P2, P4, P8, P10, P13, P15, P18, P19)
	Pre-Disaster Preparations (P1, P2, P3, P7, P8, P12, P13, P21)
	Individual education (P10, P11, P12, P15, P16, P18)
	State of Preparedness (P4, P7, P10, P12, P14)
	Social education (P2, P4, P5, P18, P19)
	Applied Education (P2, P9, P14, P17)
	Education for high-probability disasters (P1, P2
Raising Awareness	Things To Do Post-Disaster (P1, P2, P3, P7, P8, P12, P13, P19, P20, P21, P22)
	Raising Awareness (P3, P7, P8, P11, P14, P16, P18, P19)
	Things to Do During Disaster (P1, P2, P3, P12, P13, P19, P21)
	Lifelong learning (P2, P11, P22)

As demonstrated by Table 3, the participants' perceptions regarding disaster education were collected under two different themes. Examination of the categories included in the disaster preparedness indicates that the participants emphasised being prepared for disasters and that this should be done before a disaster occurs. The views of Participant 1, who emphasised an effective disaster education, are as below:

"Disaster education is the whole of educations given to people to know what to do before, during and after a disaster to minimise the possible damages. That is, it is not possible to prevent the disasters anyway, so it is for minimising the possible damages." (P1).

As seen from the quote above, ensuring that disaster education achieves its goals is only possible by providing it before disasters. Participants in the theme of raising awareness drew attention to the importance of individuals being conscious about disasters before it occurs, knowing what should be done during a disaster, and being aware of the process in order to accelerate the transition to normal living conditions after the disaster in terms of social recovery. To represent the views of the participants in this category, the views of Participant 5 are given below:

"Disaster education is a general concept. Therefore, I think not only of formal education but the entire society. Therefore, when I think of disaster education, I think of raising awareness, being ready for possible problems, and becoming aware of how disasters can be endured with minimal damage." (P5).

As emphasised above, disaster education is a process that includes the period before, during and after disasters. Each process has its steps, and each is important in its own way. Undoubtedly, individuals and society should be educated about disaster processes to prevent losses, especially human life, or minimise the damage.

Participants' opinions regarding disaster education are given in Table 4.

Table 4. *Participants' Opinions Regarding Disaster Education*

Themes	*Categories*
Damage Prevention	Disaster Preparedness (P4, P5, P6, P7, P9, P11, P12, P13, P14, P15, P16, P20, P21, P22)
	Minimising possible damages (P1, P2, P3, P6, P8, P10, P16, P17, P19)
	Preventing Losses of life and property (P1, P2, P8, P11, P12, P19)
	Awareness (P5, P9, P13, P14, P15, P18, P19)
Vital importance	Necessity (P1, P3, P4, P5, P6, P9, P10, P15, P16, P17, P18)
	Disasters in Turkey (P1, P3, P4, P5, P7, P9, P10, P12, P13, P14, P17)
	Disaster Experience (P1, P3, P4, P5, P18)
	Lack of Knowledge (P5, P6, P14)
Recovery	Normalisation (P6, P18, P20, P21)
	Benefitting (P2, P9, P18, P22)

As demonstrated by Table 4, the participants' opinions regarding disaster education were collected under three different themes. Examination of the theme of preventing damages category reveals that the participants emphasised the importance of disaster education in minimising the damages and preventing/reducing losses of life and property. To represent the views of the participants in this category, the view of the participant coded P19 is given below:

"The importance of disaster education is in raising awareness, minimising the loss of life and property, and informing the society about this issue. Increasing the society's level of knowledge can prevent wrong behaviour during a disaster and minimise the losses of life and property." (P19).

As seen in the quotations above, preventing or minimising the damages caused by disasters before they occur is the most fundamental importance of disaster education. When the categories in the vital importance theme were examined, it was seen that the participants emphasised the necessity of disaster education in our country, how our country faces different types of disasters at different times, and how there have been negative experiences due to ignorance about disasters. To represent the views of the participants in this category, the views of Participant 4 are given below:

"Disaster education is absolutely a necessity because we suffer disaster-related problems each year. If just count the ones in 2020, we had an avalanche in Van, and I am not talking about smaller earthquakes because we have earthquakes magnitude four that occur in Van. The things that happened in Elazığ and Izmir, forest fires... These things happen constantly" (P4).

As emphasised in the quote above, it can be seen that the variety of disasters that our country often faces generally have negative consequences. In line with this, since our country is a country of disasters, the participants drew attention to the importance of disaster education. Examination of the categories in the recovery theme reveals that the participants emphasised the importance of disaster education in returning society to normal conditions after the disaster, the emotional recovery of individuals, and ensuring that the negative effects on society is not permanent.

The Participants' Opinions on the methods that can be used to make disaster education more effective in primary school are given in Table 5.

Table 5. *Participants' Opinions Regarding Methods for Disaster Education*

Themes	*Categories*
Learning	Learning by doing/experience (P1, P2, P3, P4, P5, P6, P8, P10, P11, P12, P13, P18, P19, P21, P22)
	Permanent learning (P5, P7, P10, P11, P12, P13, P15)
	Learning through authorised individuals/institutions (P3, P9, P11, P12, P16, P22)
Education	Technology-Assisted Methods (P1, P2, P3, P4, P9, P10, P11, P12, P13, P15, P18, P19, P22)
	Outdoor education (P1, P2, P4, P10, P12, P13, P16, P17, P18, P19, P20)
	Applied Education (P1, P5, P6, P10, P13, P16, P19, P21)
	Relative-Concrete Education (P2, P11, P15, P18, P19, P20)
	Material assisted (P2, P5, P6, P19)
	Drama (P3, P12, P14, P15)
	Principle of Currency (P6, P19, P20)
	Showing and Doing (P15, P22)
	Educational Games (P13, P14)

As demonstrated by Table 5, the methods-approaches-techniques of participants' regarding disaster education were collected under two different themes. Examination of the categories of preventing damages theme reveals that the participants emphasised that the learning process in disaster education will become more effective by doing and experiencing. In contrast, the participants, who drew attention to the importance of permanent learning in disaster education, emphasised that effective learning would occur if authorised experts give disaster education. The views of Participant 11, who emphasised an effective disaster education, are as below:

"theoretical knowledge is insufficient. It is just memorised and is forgotten very quickly. We can create disaster awareness in children by doing, living, experiencing or by producing these disasters in virtual environments and making their effects visible and concrete." (P11).

As can be seen in the quotations above, it is believed that permanent disaster education can be achieved through learning-doing method, which will allow the realisation of an efficient educational process. Examination of categories in the teaching theme demonstrates that the participants underlined that there should be a technology-supported teaching process in the education of disaster themes, the practices should be done outside the classroom, and different teaching methods-techniques should be used considering the age and development of the students. To represent the views of the participants in this theme, the views of the participant coded P13 are given below:

"I believe in-class education is insufficient. To ensure permanency in education, I believe the children should be given education through doing and experiencing. It is impossible to increase permanency regarding an event that is not experienced. We need to prefer out-of-class and simulation environments where we can experience current disasters" (P13).

The quotations above state that disaster education should be realised through experiencing, using technology-supported outdoor environments, factoring in the students' developmental levels, and using different teaching methods-techniques.

The suggestions of participants regarding disaster education in primary schools are given in Table 6.

Table 6. *Participants' Suggestions Regarding Disaster Education*

Themes	*Categories*
Education	Age Appropriateness (P6, P7, P8, P9, P12, P14, P15, P18, P20, P22) Active Learning Experiences (P7, P11, P13, P14, P17, P18, P20) Simulation Use (P2, P18, P20) Authorised-expert educators (P17, P19) Fun learning environments (P14) Close to far principle (P13)
Program	Required Course (P1, P4, P11, P12, P18, P20) Cyclical Approach (P6, P7, P10, P12, P14, P20) Primary School-Based (P1, P7, P17, P19) Interdisciplinary approach (P6, P8, P9, P11)
Improvement	Lifelong learning (P4, P7, P8, P12, P13, P15, P20) Informal education (P3, P12, P13, P20) Increasing Education Programs (P1, P2, P7) Teacher training (P2, P14) Disaster Literacy (P2) Parent training (P2)

As demonstrated by Table 6, the participants' suggestions regarding disaster education were collected under three different themes. Examination of categories in the teaching theme demonstrates that the participants emphasised that disaster education should be done with the relativity principle using the active teaching methods. The views of Participant 8 regarding suggestions for disaster education are as below:

"I don't believe disaster education has an age because we live in a disaster area... Disaster education should be given at the primary school level implicitly. For example, if a landslide is being discussed, a simple mechanism should be built to demonstrate the event to the children." (P8).

As seen with the quotation above, relativity to children is important due to many factors and including the students in the process is critical. Examination of the categories in the curriculum theme reveals that the participants emphasised the necessity of including a course on disasters in the scope of disaster education in primary schools and how providing this course in a cyclical structure will increase its effects. To represent the views of the participants in this category, the views of Participant 11 are given below:

"First, disaster courses should be mandatory because disasters affect the lives of humans and other beings in nature. Outdoor educations, applications and practices should be included. Disasters should not be just the subject for social studies and life studies courses. They should be included in Turkish course texts and be a theme for painting courses. For example, a painting can be made regarding what should be done during a disaster. Alternatively, they should be included in music courses. The effect of a fire, disaster, flood, erosion should be brought into our lives through all courses." (P11).

The quote above shows that disaster education is among the necessities of human life, and it is important that this education is compulsory at an early age. Examination of the categories in the improvement theme reveals that the participants emphasised that disaster education should benefit society with non-formal education within the scope of lifelong learning. On the other hand, the participants pointed out that the activities to be organised within the scope of disaster education should be increased and disseminated. The views of the Participant 22 are given below to represent the participants' opinions on this issue, which is important for the general population:

"Disasters don't discriminate between ages or individuals. Ignorance is more lethal than earthquakes (disasters) anyway. If we were a little more aware, calm, and cautious, the number of lives and property loss would be smaller. Perhaps we would get through it with a little less damage. Theoretical disaster educations should be provided based on age ranges and levels." (P22).

FINDINGS REGARDINGS THE THIRD RESEARCH QUESTION

Information of the participants regarding whether they would receive education for the teaching of disaster-related subjects is given in Table 7.

Table 7. *Disaster Education Demands of the Participants*

Themes	*Categories*
Development	General Need (P3, P6, P10, P11, P14, P15, P18, P20) Personal development (P1, P12, P13, P16, P22) Qualified Education Demand (P5, P9, P16, P17, P19) Professional development (P4, P21)
Necessity	Vital importance (P2, P7, P8, P21)

As demonstrated by Table 7, the participants' demands for disaster education were collected under two different themes. Examination of the categories of the development theme reveals that the participants emphasised reasons such as it being a general need and a necessity for individual and professional development, among the reasons for demanding to receive a qualified disaster education. The views of Participant 2, who stated that disaster education is an important need for the teaching profession, are given below:

"To be honest, I didn't see the need for receiving disaster education until the last one or two years. But when the number of disasters increased, we, as teachers, saw that it was a need. I have a child, a wife, a family at home. It is not just a thing that we see on television. It can one day happen to us, or it can happen while we are at school. We are responsible for the children while at school, so I definitely would like to receive disaster education." (P2).

As can be seen in the quotations above, the participants emphasised that they desire to receive qualified education as disasters affect themselves, their families, their environment and their students. The participants in the theme of necessity emphasise reasons such as minimising the losses in life and property, saving lives of living beings, and surviving, as the reasons for demanding to receive qualified education. The views of Participant 8, who emphasised the vital importance of disaster education, are as below:

"Of course, I would like to receive disaster education because knowing how to act would make me feel more secure for both my family and myself. Knowing what to do after a disaster makes me feel calm, and knowing that I would be of benefit to others eases my conscience." (P8).

Information on the self-sufficiency levels of the participants regarding disaster education is given in Table 8.

Table 8. *Participants' Self-sufficiency Levels Regarding Disaster Education*

Themes	*Categories*
Basic Knowledge level	Basic Knowledge level (P5, P8, P19)
Inadequacy	Lack of Knowledge and Skill (P1, P2, P3, P5, P9, P10, P14, P18, P20, P21) Lack of Skill and Practice (P5, P8, P12, P15, P16, P17, P22) Lack of knowledge (P6, P11)

As shown in Table 8, the participants' disaster education self-sufficiency levels were collected under two different themes. Participants in the theme of basic knowledge level pointed out that they only have basic knowledge about disasters and that this is insufficient. The views of Participant 11, who emphasised that she does not have enough knowledge and skills regarding disaster-related subjects, are as below:

"I do not consider myself fully competent in disaster-related matters. I can introduce disaster-related topics to primary school students. I can inform them, but I can't educate them." (P19).

As seen in the quotations above, the participants stated that they had basic knowledge, albeit insufficient. Examination of the categories in the inadequacy theme indicates that some participants were insufficient in knowledge and application in general terms, and some were insufficient only in the application part. To represent the views of the participants in this category, the views of Participant 16 are given below:

"No, I do not see myself as adequate. Because I received some education, but I believe that they would have been more effective if they were hands-on. Yes, I have knowledge and skills regarding disaster-related subjects, but I don't think it is enough." (P16).

Participants stated that they had deficiencies in terms of both theory and practice regarding disaster-related subjects. At this stage, the self-sufficiency that teachers should have in order to acquire and apply vital knowledge becomes critically important.

The participants' opinions on the qualifications that teachers who will provide disaster education in primary school should have are given in Table 9.

Table 9. *Participants' Opinions Regarding Teachers Who Will Provide Disaster Education*

Themes	*Categories*
Personal characteristics	Being Open to learning, innovation, and development (P3, P4, P5, P7, P, P8, P10, P11, P20)
	Equipment (P1, P5, P15, P17, P21)
	Disaster Awareness (P4, P16)
	Responsibility (P4, P21)
	Volunteering (P2, P9)
	Experience (P18)
Education characteristics	Active Teaching Methods (P1, P5, P14, P17, P19, P20)
	Knowledge of Disaster-Related Subjects (P3, P6, P8, P9, P12, P13)
	Relativity-Suitability to Student (P8, P12, P14, P22)

As demonstrated by Table 9, participants' opinions regarding teachers who will provide disaster education were collected under three different themes. Examination of the personal characteristics theme categories reveals that the participants emphasised that a teacher needs to be open to learning, development, and innovation to provide a qualified disaster education. On the other hand, the participants emphasised that teachers should be equipped against disaster types, feel responsible, and have a high awareness of the importance of disasters. The views of Participant 3, who emphasised the characteristics of qualified teachers who will provide disaster education, are given below:

"They should be well-equipped with information. The teacher should have sufficient levels of knowledge, experience and skills. The teacher should take advantage of technology, and she must know how to use it. She needs to be open to self-development and learning and have curiosity." (P3).

As seen in the quotation above, a qualified disaster educator must have willingness regarding disaster education, keep up to date with the topics, and benefit from technology and innovations. Participants in the theme of teaching characteristics pointed out that methods-techniques that will enable the students to participate actively in the process instead of being passive listeners should be preferred in the education of disaster-related subjects. Additionally, the participants stated that the teachers who will provide disaster education should have a good command of disaster-related subjects and that the subjects/contents should be taught to the students appropriately during the teaching process. To represent the views of the participants in this category, the views of the Participant 14 are given below:

"These subjects should be taught at the primary schools by making them tangible and fun. At this point, educating the primary school group by making it tangible via educational games is critical. The middle school group and high school students are a little bit different. At that point, educational activities or methods-techniques that are suitable for each level should be applied. In particular, making the subjects tangible instead of just presenting them should be more beneficial." (P14).

As emphasised by the quote above, the teachers who provide disaster education should pay attention to many factors in and out of the classroom. Acquiring disaster education competencies in addition to teaching competencies is especially important for students.

FINDINGS REGARDINGS THE FOURTH RESEARCH QUESTION

The participants' views about the place of disaster-related subjects in primary school curricula and textbooks are given in Table 10.

Table 10. *The Participants' Views About the Place of Disaster-related Subjects in Primary School Curricula and Textbooks*

Themes	*Categories*
Inadequacies in Education Dimension (Application)	Insufficient Activities (P2, P5, P8, P9, P16, P18, P19)
	Exam-Focused Approach (P2, P4, P8, P16)
	Theory Focused Curriculum (P1, P8, P9)
	In-Class Education (P2, P17)
Inadequacies of Curricula	Inadequacy of Curricula (narrow scope) (P2, P4, P5, P6, P11, P13, P16, P17, P18, P20, P21)
	Insufficient Time (P2, P4, P5, P6, P16)
	Limited Achievements (P5, P7, P10, P15)
	Subjects-Contents That Are Not Locally Focused (P13, P14, P19)
Inadequacy of textbooks	Poor-quality textbooks (examples, tangibility, narrative) (P1, P3, P4, P5, P6, P9, P10, P11, P12, P14, P15, P16, P17, P18, P19, P20)
	Theory-focused Textbooks (P2, P5, P8, P9, P10, P17, P18)

As demonstrated by Table 10, the participants' views about the place of disaster-related subjects in primary school curricula and textbooks were collected under three different themes. Examination of the categories in the inadequacies in the education dimension theme reveals that the participants stated that the activities on teaching disaster-related subjects were inadequate, that an exam-based approach that emphasises theoretical knowledge is adopted, and that the outdoor environments were not employed. To represent the views of the participants in this category, certain participant views are given below:

"Disaster-related topics are already in the curriculum, but a unit should be dedicated to disaster-related subjects and taught in practice, instead of presenting them at the end of a unit theoretically. If a teaching space (unit) is dedicated to disasters to have hands-on activities, by taking the children on a trip, for example, the classes may be held more actively." (P17).

As can be seen in the quotations above, it is important to teach disaster subjects to carry out the activities for disaster types in practice, use out-of-class environments, and abandon the exam-focused approach. Examination of the categories in the Inadequacies of Curricula theme reveals that the participants stated that the disaster-related subjects were not included in the curricula sufficiently and that some programs did not even include them, which means that the curricula are narrow in terms of the scope of disasters and they are limited to certain courses. Additionally, the participants have emphasised that time dedicated to these subjects and achievements was limited and that disaster-related subjects should focus on disasters that are highly likely to occur in the region where the students live. The views of Participant 1, who draw attention to the need to provide education for high-possibility disasters, are given below:

"Each region has a different disaster type. Landslides in the Black Sea Region, an avalanche in Erzurum region and Hakkari region, forest fires in the coastal regions of Antalya, Muğla or Adana during summer. We should teach what other disasters are but focus on the ones that differ between regions. Since regional disasters are seen in regions more often, we should focus on them." (P14).

As emphasised by the quotation above, including more disaster-related subjects in the curricula and extending their scope is critical for qualified disaster education. Examination of the categories in the theme of the inadequacy of the textbooks reveals that the participants emphasised that the disaster subjects are included in the textbooks only theoretically and that the content is not rich. To represent the views of the participants in this category, the views of Participant 1 are given below:

"I don't believe textbooks are adequate. Because they only include theoretical knowledge. For each class, at least one applied disaster training should be required. If the school doesn't have the equipment, perhaps applied education can be provided by visiting AFAD." (P1).

The participants' opinions on how the ideal disaster education should be in primary school are given in Table 11.

Table 11. *Participants' Opinions Regarding Ideal Primary School Disaster Education*

Themes	*Categories*
Learning	Relative-Concrete Education (P5, P6, P14, P15, P18, P19, P20, P21, P22)
	Permanent learning (P5, P7, P8, P11, P14, P20)
Education	Education by doing/experience (P4, P5, P7, P8, P10, P11, P13, P15, P16, P17, P18, P20, P22)
	Applied Education (P1, P4, P6, P7, P8, P10, P11, P13, P16, P19, P22)
	Technological support (P1, P4, P5, P8, P12, P13, P18, P19, P21)
	Expert-Institution support (P1, P12, P13, P17, P19, P22)
	Outdoor Learning Environments (P1, P4, P10, P11, P13, P20)
	Educational Game and Drama (P6, P14, P16)
Disaster preparedness	Disaster Awareness (P1, P4, P7, P10, P11, P17)
	Need for Disaster Education (P5, P20)
Improvement	Updating Curricula (P4, P5, P9, P10, P17)
	Disaster Education Programs-Projects (P1, P2, P7, P17)
	Updating Textbooks (P1, P10, P20)
	Disaster Learning Domain (P2, P5, P17)
	Exemplary Countries (P2)
	Diversifying Drills (P8)

As demonstrated by Table 11, the participants' opinions regarding ideal disaster education were collected under four different themes. Examination of the categories in the learning theme revealed that the participants emphasised that the primary school students in the tangible period should learn the disaster-related subjects in line with their age-development characteristics and that the vital information they learned should be permanent. To represent the views of the participants in this theme, the views of Participant 14 are given below:

"... making subjects tangible, using educational games and drama, and teaching subjects according to the levels of the children by talking, demonstrating and providing details would both be more beneficial and more permanent. The children truly learn the subjects and use them in their lives. Educational games and drama are beneficial because I think teaching children in the tangible stage by making things tangible would be more beneficial." (P14).

As can be seen in the quotation above, ensuring that disaster-related subjects are taught more frequently and in a wider scope are critical for ideal disaster education. Examination of the categories in the teaching theme reveals that the participants have noted that teaching by doing and experiencing should be adopted in disaster education, applied education over theoretical education should be adopted, technology should be used to demonstrate and explain disaster types, and experts-authorised people should be benefited from by going to learning environments outside the classroom according to the subject-content situation. To represent the views of the participants in this theme, the views of the Participant 11 are given below:

"It definitely shouldn't remain just as knowledge in a book; it should be applied. Experiencing opportunities should be provided to children, virtual drills should be held, and simulations should be held to provide children with more effective and permanent knowledge. Outdoor environments should be used to make this knowledge permanent. If necessary, camps should be held, or activities should be held in nature to provide basic disaster awareness. Effective and permanent learning is better provided by learning and experiencing." (P11).

According to the quote above, effective teaching of disaster subjects goes through a learning process in which the student is also included. When the categories in the theme of disaster preparedness are examined, it was noted that the participants drew attention to the importance of creating disaster awareness and awareness in the preparation stage before disaster events occur. Participants emphasised that disaster education, which includes vital information, should be given the importance it deserves before it's too late. To represent the views of the participants in this theme, the views of Participant 4 are given below:

"We need to be in a position to guide children and make them more aware. We need to take them to disaster zones, and although we cannot make them experience an earthquake, we can use simulations. We should prepare students for what we should do as a society or what we should do in case of a disaster. There was an avalanche last year (in Van), we could have taken the children there to see those places, or we could have made online demonstrations to make them more aware." (P4).

As seen in the quote above, the participants emphasised the need for students to develop disaster awareness and have a high level of disaster awareness by referring to the negative events we experienced as examples. Examination of the categories in the theme of recovery reveals that the participants emphasised that for ideal disaster education, the scope of disaster subjects should be expanded in the curricula, the achievements should be increased, the learning domains should be created, the projects related to disasters should be organised, the amount of disaster educations should be increased, and the books on disaster-related subjects should be developed and enriched. To represent the views of the participants in this theme, the views of Participant 5 are given below:

"... first of all, different awareness centres may be established. Field trips could be carried out to these places. Education methods and techniques should be modernised. Learning by doing and experiencing innovative activities should be opportunities where the children can be involved in the process and find creative solutions. Disaster topics must be increased in our curricula, which consist of a series of acquisitions. ...Their amount is very little for a subject that has such vital importance. For this reason, a unit or a sub-learning domain should be designed, and disasters should be integrated

with a curriculum that is ordered from easy to difficult. Additionally, the structure of achievements should be increased in terms of quantity. On the other hand, how disaster-related subjects are included in textbooks, one of our main sources, should be altered. If the subject is a natural disaster, their importance should be emphasised, and the number of pages should be increased. We cannot bring such vital content to children with a single acquisition a year." (P5).

As can be seen, the current disaster education in primary school differs in many respects from the ideal disaster education described by the participants' opinions. Participants generally drew attention to the importance of disaster education in primary school and the existing inadequacies.

DISCUSSION, CONCLUSION AND IMPLICATIONS

The first research question of the study attempted to determine participants' awareness and knowledge levels regarding the concept of disasters. In line with their opinions, it was determined that disasters, which create various effects on society and nature, generally result in negative consequences. The participants have defined the concept of disaster as a series of events that cause material-moral damages and losses that deeply affect lives, stop and disrupt social life and negatively influence the individual, society, and the environment. The participants categorised disasters as natural and human-induced. The fact that natural disasters come to mind first when disasters are mentioned has revealed that the occurrence of disasters is of natural origin, and the human factor is ignored. Therefore, the fact that knowledge on disasters is concentrated on natural disasters shows that the participants' disaster knowledge is deficient in terms of scope and variety. In this context, Maya and Sarı (2018) found in their study that while teachers stated that subjects on earthquakes, fires and floods should be given priority, they did not give priority to human disasters. Likewise, knowledge and awareness levels regarding disasters vary according to participants' region and time. Similarly, Mızrak (2018) stated that education for qualified disaster training should be determined according to need and priority. The participants frequently emphasised the types of disasters that are currently occurring worldwide and in Turkey. Participants classified the frequent earthquakes, floods, avalanches, tsunamis and landslides in Turkey as natural disasters and fires, epidemics, and global warming as human-induced disasters. It has been determined that the past and current events experienced globally and in Turkey constitute the Participants' disaster knowledge, and their awareness levels are high. Similarly, Çelik (2020) concluded that primary school teachers are highly sensitive to disasters and take disaster situations seriously, take precautions against disasters, and think these measures will be useful.

In the second research question of the research, the participants' views on disaster education were tried to be obtained. With the questions asked in this context, the participant's knowledge of the concept of disaster education, their views on the importance of disaster education, methods that can be used in disaster education and suggestions for disaster education were obtained. Participants attributed meanings to disaster education, such as taking necessary precautions before disasters occur, minimising loss of life and property, and educating individuals and society. On the other hand, some participants attributed meanings to disaster education, such as raising awareness about disasters in individuals, creating disaster awareness, and having information about what should be done during and after the disaster. Similarly, Noviana and Afendi (2019) stated that disaster education provides students with accurate information about disasters, provides a systematic understanding of protection, and equips students through practical training on how to protect themselves and respond to disasters appropriately and quickly. Participants emphasised that disaster education is necessary for Turkey, that it is vital to create a disaster-ready Turkey, and that there is no alternative to surviving disasters with minimum losses. The participants have drawn attention to the fact that learning by doing-experiencing would be effective and permanent in terms of methods used in disaster education. In his study, Taş (2003) concluded that teachers generally use lecture and question-answer methods for disaster-related subjects and that since lectures cannot be adapted to the level of students, they cannot actively participate. In their study focusing on the primary school level, Adiyoso and Kanegae (2012) indicated that different educational methods should be used, games and simulations should be employed, disaster area trips should be conducted, and experiments and drills for disasters should be done for effective and qualified disaster education. In the dimension of education, the participants have emphasised the importance of using technology, which is critical in today's world, and conducting outdoor applications. Regarding disaster education, the participants suggested that active learning methods should be employed, and disaster education should be made mandatory in every education level, starting with primary schools. In a study conducted by Maya and Sarı (2012), the teachers stated that disaster education should be started in the preschool stage, that even starting at such stage may be too late, and that disaster education should first be given in the family. Similarly, the teachers in the study conducted by Bulut (2020) stated that it is necessary to provide disaster education to children and increase their disaster awareness during the preschool stage. In the study conducted by Zhu and Zhang (2017), the teachers indicated that schools should develop disaster-related curricula, include disaster education programs in the curriculum, and design special textbooks for disaster education. Additionally, it is suggested that disaster education should not be given only in schools, that the concept of community-based disaster education should also be considered, and that lifelong learning should be adopted. In their study at the primary school level, Adiyoso and Kanegae (2012) concluded that teachers and students play an important role in raising awareness, disseminating accurate information about disasters and preparing society for disasters. Similarly, Mızrak (2018) emphasised that education given to children at schools is important for the future of society and that there is a direct correlation between the high level of knowledge of children about disasters, the high level of disaster education of the society and the level of resilience to disasters.

The third research question of the study was to establish the self-sufficiency views of the classroom teachers on the education of disaster-related subjects. In this context, the participants stated on the issue of being educated for teaching disaster-related subjects, that such educations are generally needed and that they are required for individual and professional development. Çelik (2018) noted that the teachers who educate society should be trained based on creating a society ready for disasters. The participants who believed that a quality disaster education is necessary indicated that they are not satisfied with their education and that theoretical education to be provided by experts-authorities in the future will not be necessary. Tuswadi ve Hayashi (2014), Maya and Sarı (2018), Mızrak (2018) pointed out that, for disaster training to be successful, it should be given by experts and experienced people using appropriate methods-techniques. Likewise, in his study with primary school teachers, Çelik (2018) concluded that the content of in-service disaster education, the expertise of the educators, the duration of the education, the frequency of the education and the implementations were insufficient. In the study conducted by Kırıkkaya et al. (2011), teachers stated that disaster education should be based on activities and that they should be given by Disaster Training Centres, the Red Crescent or similar authorised institutions. On the other hand, it was determined that certain participants desired to receive disaster education due to its vital importance. The disaster education self-sufficiency level of certain participants was at the basic level, and it was revealed that most had insufficient knowledge, experience and skills. Almost none of the teachers stated that they consider themselves sufficient for the teaching of disaster-related subjects. Çelik (2020) concluded that classroom teachers do not consider themselves competent in disaster education, are insufficiently prepared for disasters, and do not find themselves sufficient in knowledge and skills to do what is necessary during and after disasters. A primary school level study by Tuswadi and Hayashi (2014) determined that teachers lack knowledge and skills in teaching disaster-related subjects because of their limited education. Similarly, Maya and Sarı (2018) concluded that teachers feel inadequate about disaster education in their study. Teachers who are aware of their shortcomings stated that teachers who will provide disaster education should have competence in the dimensions of being open to learning, being up-to-date, being equipped, being aware of disasters, and taking responsibility. Additionally, participant views have also demonstrated that, in addition to personal characteristics, teachers should focus on making students actively participate and be competent in teaching disaster-related subjects. In this context, Çelik (2020) suggested in his study to organise in-service educations for teachers, which should include activities and practice examples that they can apply in classroom environments that can actively include students in the education and increase their awareness against disasters. In the same study, teachers underlined that disaster education is not solely theoretical and that it should be based on implementation and given by authorised persons to create proficiency in disaster education.

The fourth research question of the study sought answers to how an ideal disaster education should be by examining the current ones. In this context, to reveal the current situation, questions about how disaster education is being addressed in primary school curricula, textbooks, and implementation were asked to the participants. In line with the participants' opinions, it has been revealed that the existing disaster education practices are lacking, the education is based primarily on lectures and theoretical knowledge, an exam-oriented approach is adopted, and the practices are limited to classrooms and schools. In addition, it has been determined that the curricula are insufficient in terms of scope, duration and acquisition, and the textbooks are not adequately equipped regarding these subjects. Maya and Sarı (2018) concluded that the curricula' disaster-related subjects, learning domains, and achievements are inadequate in their study with secondary school teachers. Öcal et al. (2016) emphasised that the achievements related to disaster education should be developed in a way that is based on different knowledge and skill levels of students and should be integrated into the curricula. By examining the current primary school disaster education based on these results, it has been determined that curricula and textbooks should be re-evaluated and enriched in the context of disaster education and a theory-based approach in the relevant classes should be abandoned, and activity-based practices should be implemented. Similarly, Çelik (2020) determined that the teachers find the outcomes regarding disaster education lack at the primary school level, that practice-based outcomes are not included, that education level that focuses on just knowledge will be ineffective, that the content of the curricula are inadequate, that restructuring content in cyclical framework would provide grounds for more permanent outcomes, and that curricula do not provide enough course hours for disaster education. When asked about ideal disaster education in primary schools, the participants stated that the education should be adapted to the students and that permanent learning is critical. Moreover, it was determined that educating via the learning doing-experiencing method, adopting practical activities, taking advantage of technology, getting support from experts and relevant institutions, and employing outdoor learning environments are necessities for ideal disaster education. Taş (2003) stated in his research that experiencing a disaster or participating in a trip to a disaster area facilitates the teaching of disaster subjects, both for teachers and students. Similarly, as a result of their study at the primary school level, Adiyoso and Kanegae (2012) concluded that examining disaster sites such as the tsunami museum, a grounded ship, or disaster escape buildings within the curriculum's scope is an effective practice in disaster preparedness. In addition, it was concluded that programs and projects should be organised, curriculum and textbooks should be updated by giving due importance to disaster issues to raise awareness of disaster.

As a result of the study, it has been determined that the classroom teachers have sufficient knowledge about the concept of disasters, that disaster education is an inevitable reality for Turkey, that teachers are inadequately equipped for disaster education and that they want to overcome this via qualified education, and that there are many differences between the current disaster education given in primary school and the ideal disaster education. It has been concluded that a qualified disaster education is necessary to minimise disasters' negative and destructive effects. To this end, educating using the learning by the doing-experiencing method, using the means provided by technology, revising and updating the curricula and textbooks by imitating countries that address disasters successfully, employing the benefits of outdoor education and the expertise of individuals and authorised institutions, and correctly implementing a school-based disaster education are necessities. Based on the results obtained in this study, the following are recommended:

- Increasing the number of video animations and interactive content for students,

- Preparing artificial disaster sites and organising disaster site trips with parents,

- Introducing disasters by establishing technological disaster stations,

- Updating basic disaster awareness education and exercises to cover all disasters,

- Creating disaster heroes and characters for primary school students, and creating and reading books and e-books containing disaster scenarios involving these characters,

- Designing digital disaster games for primary school students and creating a disaster portal.

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The Effects of Cover-Copy-Compare Interventions to Enhance Fluency in Mathematics: A Systematic Review Study

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Abstract

Systematic teaching techniques that offer a wide range of exercises need to be applied to enhance math fluency. Cover-Copy-Compare (CCC) is one of the most effective intervention used to increase the accuracy and fluency rate of students in basic facts. In the literature, it is noted that this intervention which is observed to be applied with different methods enable students to perform fluently and gain numerous math skills. This study aims to analyse studies using CCC for enhancing accuracy and fluency rate according to defined categories. In this study, 22 studies, which meet the inclusion criteria, were reviewed with document analysis. These studies were examined according to methodological and participant features, CCC interventions, effectiveness, maintenance, generalization, and social validity and the results were presented in tables within the scope of this study. The findings obtained through the document analysis were discussed together with limitations of the studies and suggestions for further studies. As a result, it can be said that CCC is a method that can easily be applied to enhance basic fact fluency of all students who are attending the first grade to tenth grade in general education and special education settings, all of whom are between the ages of 7-12. In this regard, when the implementers want to enhance fluency in basic facts, they can benefit from CCC, which is an evidence-based intervention and ensures systematic repetition.

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INTRODUCTION

Basic math skills include counting, addition, subtraction, multiplication, and division facts. Basic skills are required to be used effectively in appearing in daily life problems such as using money, clock reading, managing time, and possibility calculations (Hudson & Miller, 2006; Stein et al., 2006). Acquisition of these skills is as critical as self-care and daily life skills to ensure the full participation of all students with (Alptekin, 2019; Allsopp, Kyger & Lovin, 2017; Cawley & Miller, 1989; Hudson & Miller, 2006; Stein et al., 2006) and without (Reys et al., 2009; Sayelski & Paulsen, 2010; Van de Walle, Karp & Bay-Williams, 2004) special needs in social life. However, it is not enough to have basic skills to acquire these critical skills. At the same time, these skills need to be presented fluently (Cates & Ryhmer, 2003; Shapiro, 2011).

Math fluency is the ability of a student to give the correct response easily and repetitively to the basic math facts (Johnson & Layng, 1996; McCallum et al., 2006; Poncy, Skinner & Jaspers, 2007). The students who lack these skills (who cannot perform basic facts fluently) have difficulty when they move on to more complex math skills (Stocker & Kubina, 2017; Windingstad et al., 2009). For instance, a student who uses finger counting to calculate single-digit numbers with single-digit numbers (3+2=?) will try to use finger counting for adding two-digit numbers with regrouping (38+42=?) and exert more effort. In addition, when basic math skills are not performed quickly, correct responses to recently learned skills significantly decrease, and deficiencies occur in the skills of these students (Billington & Ditomaso, 2003; Bliss et al., 2010). Due to the hierarchical structure of mathematics, these deficiencies cause students to have difficulties in learning mathematics (Gürsel, 2010). These difficulties can be seen not only in students with special needs but also in all students, thus, enhancement of fluency in math skills becomes more important to prevent this problem.

Enhancing fluency in mathematics is possible through systematic teaching techniques that allow a student to do plenty of exercises. Cover-copy-compare (CCC) is one of the most effective interventions used to increase the accuracy and fluency rate of students in basic facts. CCC allows students to receive immediate feedback and increase the rate of their corrective feedback. It is because of the short interval in CCC between stimulus and response (Skinner et al., 1993; Skinner, Ford & Yunker, 1991). CCC offers students a wide range of exercises. Having plenty of exercises reinforce the behaviour at certain intervals to ensure permanence of these skills (Skinner et al., 1989; Skinner, McLaughlin & Logan, 1997). Since the student controls the accuracy of the response in CCC, it allows the student to evaluate themselves (Grafman & Cates, 2010; Stocker & Kubina, 2017). CCC is an intervention that is easy to apply, practical and requires simple preparations when it is considered in terms of implementers. CCC can be evaluated as time-efficient and cost-effective intervention (Poff et al., 2012; Skinner et al., 1992), which can be applied in different ways (Becker et al., 2009; Codding, Eckert, et al., 2007; Grafman & Cates, 2010; Johnson, 2014; Lee, 2014; Morton & Gadke, 2018; Skinner et al., 1991; 1992; Skinner, Belfiore et al., 1997) and can be combined with different techniques (Parkhurst et al., 2010; Poncy, Skinner & O'Mara, 2006).

CCC consist of five application steps. In the first step, the student reads the first fact and its answer on the worksheet prepared beforehand. In the second step, the student covers the part that s/he read. In the third step, the student responses to the fact on the right side of the page and in the fourth step, s/he opens the cover. In the last stage, the student compares his/her answer with the correct one. If the answer is correct, s/he moves on to the next fact. If the answer is wrong, s/he crosses out the wrong answer and writes the correct answer. The process is similarly repeated for all facts in the worksheet (Skinner et al., 1989; 1997). Stocker and Kubina (2017) indicated in their review study that CCC is applied in three different ways including verbal CCC (V-CCC), model CCC (M-CCC) and cognitive CCC (C-CCC). In the third step of V-CCC, a verbal response is given instead of a written response. In the second step of M-CCC, the student reads the fact and its answer once again before covering it, and then writes the fact and its answer. Therefore, the student sees the fact and its answer twice. In the third step of C-CCC, the student gives a sub-vocal response.

In the literature, after Skinner et al. (1989) pioneered CCC intervention in the field of mathematics, many studies have been conducted to investigate the effects of CCC in the enhancement of accuracy and fluency in basic math skills. Some of these studies investigated; the effects of CCC on students with different characteristics (*i.e.,* Alptekin, 2019; Lee & Tingtorm, 1994; Skinner et al., 1989), the most effective CCC combinations to address different needs of the students (i.e., Skinner et al., 1997; Skinner, Belfiore et al. 1997), different effects of CCC combined with other techniques used for improving the fluency (*i.e.,* Codding et al., 2007; Mong & Mong 2012). In these studies, target behaviour, participant features, settings, application methods, research design, maintenance, generalization, reliability, and social validity data were analysed and the data collection method, CCC application steps and results (effects on students) were discussed in one study to allow people to have access to the information related to CCC interventions. Moreover, it is considered that identifying strengths and weaknesses on this subject according to these studies will shed light on new studies.

There are studies in the literature that examine related studies with CCC interventions. A meta-analysis study of Joseph et al. (2012), which examines the studies conducted with typically developing students and students with special needs in the settings (word spelling and mathematics) where CCC is used. The research covered by this study was analysed according to participant features, CCC methods, settings, research pattern and independence measurements. In the review study of Stocker and Kubine (2017), studies that are conducted to increase the fluency of students with disabilities, were analysed. The studies were analysed in terms of how fluency is measured and calculated, how the fluency criterion is determined in each study, which form of CCC is used and examined its effects on the participants. This study differs from other studies by focusing on various studies and new studies in terms of participant characteristics, settings, research designs, CCC interventions and obtained results as well as the target behaviours, application of CCC (one-to-one or group), maintenance, generalization and social validity data, reliability data and their comparison in comparative studies.

The aim of this study is to analyse the studies using CCC to enhance accuracy and fluency in mathematics in the light of defined categories. Research questions related to these categories are as follows:

1. What are the characteristics of participants and the dependent and independent variables of these studies? Which techniques have been compared with the CCC in comparative studies?
2. What are the characteristics of the method used in these studies?
3. What is the application (CCC intervention) features of these studies?
4. What are the results of effectiveness, maintenance, generalization, and social validity in these studies?

METHOD

RESEARCH DESIGN

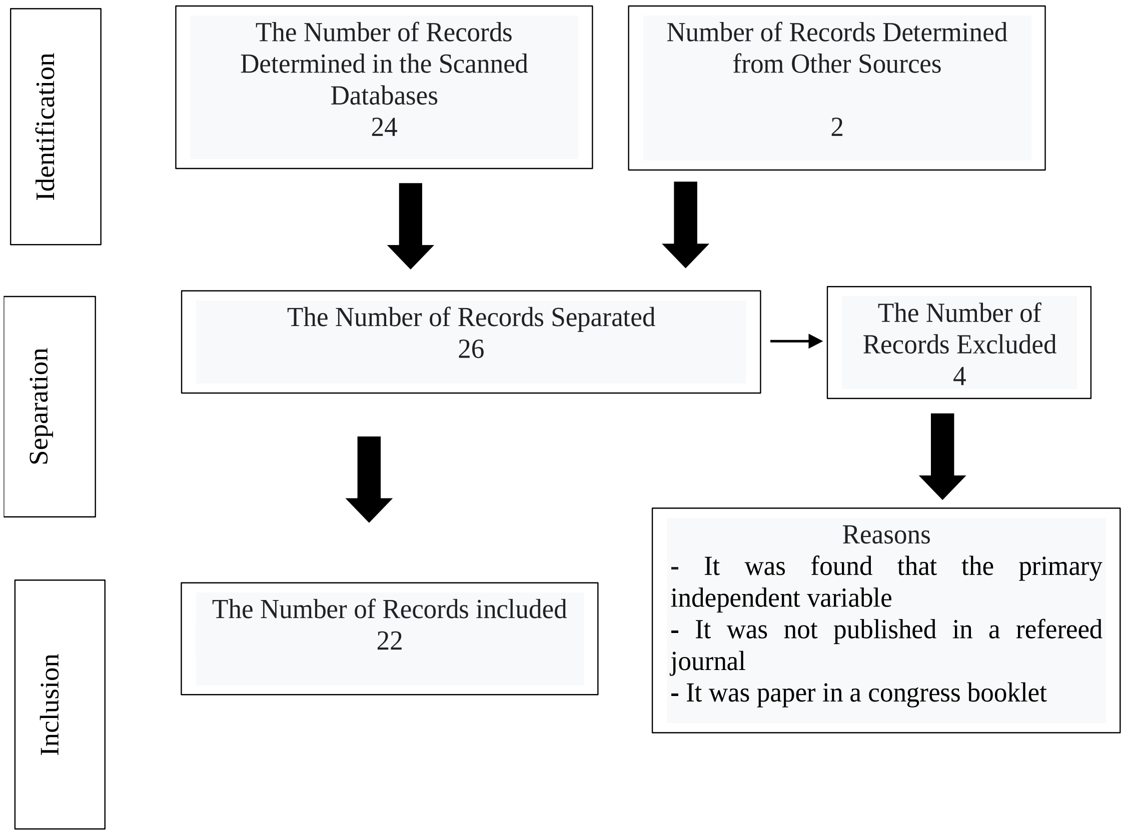
Document analysis, which is one of the qualitative research methods, was used in this study. Document analysis covers the analysis of written materials containing information on the phenomenon (Bowen, 2009; Yıldırım & Şimşek, 2011). In this research, the documents obtained about the CCC technique used in the enhancement of fluency in mathematics were analysed in the light of the determining variables.

To identify the studies to be included in this study, some criteria were determined first. These criteria are as follows (1) publication in a peer-reviewed journal, (2) experimental studies, (3) the primary independent variable (or one of the variables) is CCC, and (4) the target behaviours are math skills. Studies published in English or Turkish, from the first basic research conducted in 1989 until

2021, were included in the research. All studies that meet the purpose and the criteria were included in the evaluation.

The keywords were determined in this study to reach the relevant studies. Keywords were defined as 'cover-copy-compare', 'math fact fluency', and 'basic math facts'. Then, keywords were entered into EBSCO, ERIC, and Google electronics databases through data resources of a public university. To reduce the possibility of missing studies, among keywords, 'cover copy compare' together with the math fact fluency or similar 'basic math fact' keywords were entered into the databases and scanned. Searches were carried out by testing the keywords entered together and/or their operators separately. Figure 1 shows the process of identification, separation and inclusion of sources.

Figure 1. *Diagram detailing steps in the identification, separation and inclusion of sources*



As can be seen in Figure 1, 24 studies were reached in databases scanning. These studies were reviewed and pre-scanned. As a result of preliminary scanning, it was found that the primary independent variable in two of these studies was not CCC (Parkhust et al., 2010; Poncy et al., 2006), one of them was an exemplary practice rather than an experimental study (Alptekin et al., 2016) and one of them was not published in a refereed journal and was a full-text paper in a congress booklet (Cressey & Ezbicki, 2008). Therefore, these four studies were not included in this study. Then, references of the remaining 20 studies were examined and it was identified that there were 2 more studies to be included in this research. However, only the abstracts of these studies were reached in these electronic databases. Accordingly, the Turkish Academic Network and Information Center-ULAKBİM was used to check whether national information sources could be accessed, and it was determined that there were relevant studies in some university libraries. Then, a request was made through the system and the studies were accessed. These studies were reviewed, and it was determined to be eligible for the criteria. As a result, a total of 22 studies were found.

DATA ANALYSIS

The studies reached in this study have been enumerated in order, from the first date to the last date. Researchers examined these studies independently and determined their categories. Then, they gathered and evaluated the identified categories. Researchers agreed to use 5 categories including (1) dependent and independent variables, compared techniques, (2) participant features, (3) methodological features (educational setting, research design, maintenance, generalization, reliability, social validity), (4) features related to intervention (implementer, presentation style, application, and presentation of CCC) and (5) results (effectiveness, maintenance, generalization, social validity) to analyse the studies. A table was created to present data of the categories and the researchers' notes to analyse the data in each category. The researchers independently read the studies and made an analysis by entering the data into the table and took detailed notes. Then, the researchers gathered and re-evaluated data. The relevant categories were re-examined from different views. The researchers reached a consensus by explaining their reasons to each other and finalized the data. Then, intercoder reliability was calculated in 20% of these studies (5 studies selected randomly). To this end, another expert read the studies independently and recorded the results in the tables. Then, the reliability coefficient intercoder was calculated using the Agreement / Agreement + Disagreement x 100 formula (Miles & Huberman, 1994), and the result was found as 98.2%.

FINDINGS

The findings obtained from these studies were analysed within certain categories according to research objectives presented in this section.

PARTICIPANTS AND DEPENDENT/INDEPENDENT VARIABLES

The features of participants, dependent and independent variables were analysed in the categories of numbers, gender, class level, dependent variable(s), and independent variable(s). Table 1 presents the data of the analysed categories.

Table 1. *Data on Features of the Participants and Dependent-Independent Variables*

Resource	*Number/ Gender*	*Age*	*Diagnosis*	*Class Level*	*Dependent Variable(s)*	*Independent Variable(s)*
Skinner et al., 1989	1/F 3/M	N/S	BD	4 and 10	Multiplication	CCC
Skinner et al., 1991	2/M	9-11	BD	N/S	Multiplication	VCCC WCCC (Classical CCC)
Skinner et al., 1992	6/NS	N/S	TD	2	Multiplication	SDF+CCC PDF+CCC
Skinner et al., 1993	3/M	12.5,1 2.3, 9.9	BD	N/S	Division	C-CCC
Lee & Tingtrom, 1994	3/F 2/M	10-11	TD	5	Division	CCC
Stading, Williams & McLaughlin,, 1996	1/F	8	LD	N/S	Multiplication	CCC
Skinner, Belfiore et al., 1997	2/M	10-11	ADHD/D B	N/S	Multiplication	VCCC WCCC (Classical CCC)
Stone, McLaughlin & Weber, 2002	1/F	10	TD/LPM	N/S	Division	CCC+R FC+R
Codding et al., 2007	2/F 1/M	11-12	TD/LPM	6	Multiplication Addition	CCC PFDC+CCC PFDI+CCC

Poncy et al., 2007	1/F	10	ID	N/S	Addition	CCC TP
Codding, Shiyko et al., 2007	56/F 42/M	Averag e 7.7	TD	2 and 3	Subtraction	CCC ET
Becker et al., 2009	1/F	10	LD	4	Multiplication	CCC ED+CCC
Grafman & Cates, 2010	47/NS	7-8	TD	2	Subtraction	CCC Versus CCC
Mong & Mong, 2010	1/F 2/M	7-8	TD/LPM	2	Addition Subtraction	CCC MTM
Poncy & Skinner, 2011	9/F 11/M	6-8	TD	1	Addition	CCC+S+GR
Mong & Mong, 2012	1/F 2/M	7-8	TD	2	Addition Subtraction	CCC TP MTM
Poff et al., 2012	3/M	10-12	BD	6 and 4	Adding and subtracting fractions	CCC
Poncy, Skinner & McCallum, 2012	11/F 9/M	8-10	TD	3	Subtraction	CCC TP
Saygılı & Ergen, 2016	4/F 2/M	10	TD	4	Addition Multiplication	CCC CS
Morton & Gadke, 2018	3/NS	N/S	A	8, 5 and 3	TP/NS	CCC Versus CCC
Schrauben & Dean, 2019	3/M	9-10	BD	3 and 4	Multiplication	CCC
Alptekin, 2019	1/F	9	TD/LPM	2	Multiplication	CCC

N/S: Not Specified, G: Girl, Boy: B, TD: Typically Developing, A: Autism, LD: Learning Disability, BD: Behavioural Disorder, LPM: Low Performance in Math, ID: Intellectual Disability, Attention Deficit Hyperactivity Disorder, BMS: Basic Math Skills V-CCC: Verbal CCC, W-CCC: Written CCC, (SDF) +CCC: Self Delivered Immediate Corrective Feedback, (PDF) +CCC: Peer Delivered Immediate Corrective Feedback, CCC+R: CCC+Reward, FC+R: Flash Card + Reward, (PFDC)+ CCC: Performance Feedback Using Digits Correct Per Minute, (PFDI) + CCC: Performance Feedback Using Digits Incorrect Per Minute, ET: Explicit Timing, ED+CCC: Error Drill, Versus+CCC, MTM: Math to Master Y, CCC+S+GR: CCC+Sprint+Group Rewards, TP: Taped Problems, CS: Calculation Strategies

FEATURES OF THE PARTICIPANTS

As can be seen in Table 1, the related studies were conducted with a total of 236 participants. 93 of these participants were female, while 87 of them were male. The gender of 56 participants in total was not defined in three studies. When these studies were examined in terms of age, it was observed that the participants were between the ages of 7-12. When the participants were analysed, there were 205 "typically developing" participants without a diagnosis, 16 participants with "behavioural disorder"; 8 typically developing participants with low mathematics achievements; 3 participants with autism; 2 participants with "learning disability"; 1 participant with attention deficit and hyperactivity disorder and 1 participant with intellectual disability. When the participant characteristics were examined in terms of class levels, it was observed that the overall range in these studies is at the 2nd-5th grade level; 4 studies is at 6th-10th grade level; 1 study is at 1st grade level. Moreover, the class level of participants was not indicated in 6 studies.

DEPENDENT AND INDEPENDENT VARIABLES

Secondly, the studies were analysed in terms of dependent and independent variables. As it can be seen in Table 1, all studies, except for 1 study, evaluated dependent variables, namely target behaviours, as basic facts (addition, subtraction, multiplication, and division). The dependent variable is adding and subtracting fractions in 1 study. When the independent variables were examined, the effectiveness of CCC intervention with Written Responses in 6 studies; Cognitive CCC in 1 study; Sprint (S) + Group Rewards (GR) CCC in 1 study on the performance of students were investigated. Therefore, there are 8 studies in total in which the effect of the independent variable was analysed. Studies with more than one independent variable with CCC can be divided into two groups. The first one is the comparison of different CCC interventions (7 studies); the second one is the comparison of different CCC techniques (7 studies). In the studies where different intervention forms were compared with each other, independent variables other than classical CCC are V-CCC, Self-Delivered Feedback (SDF) +CCC and Peer Delivered Feedback (PDF) +CCC. The application forms are Performance Feedback Using Digits Correct (PFDC) and Performance Feedback Using Digits Incorrect (PFDI) +CCC, Error Drill (ED) +CCC and Versus (V)-CCC. In the studies where different techniques are compared, the independent variables other than CCC are Flash Card (FC) + Reward (Ö). The techniques are as follows: Taped Problems Interventions (TP), Explicit Timing (ET), Math to Mastery (MTM) and Calculation Strategies (CS).

METHOD-SPECIFIC FEATURES

Method specific features of the research evaluated within the scope of this study are examined in the categories of educational setting, research model, maintenance, generalization, reliability, and social validity. Data related to analysed categories are given in Table 2.

Table 2. *Data on Method Specific Features*

Resource	*Educational Setting*	*Research Model / Type*	*Maintenance*	*Generalization*	*Reliability*	*Social Validity*
Skinner et al., 1989	SE (a school affiliated to university serving students with BD)	Multiple baseline	(+) Weekly	(-)	IOR (+) AR (+)	(-)
Skinner et al., 1991	SE (a university-affiliated boarding school serving students with BD)	Adapted alternating treatments	(-)	(-)	IOR (+) AR (-)	(-)
Skinner et al., 1992	GE	Adapted alternating treatments	(-)	(-)	IOR (+) AR (+)	(-)
Skinner et al., 1993	SE (a separate primary school serving for students with BD)	A multiple-baseline-across tasks (sets)	(+) 8th month	(-)	IOR (+) AR (+)	(-)
Lee & Tingtrom, 1994	GE	A multiple-baseline-across tasks (sets)	UT	(-)	IOR (+) AR (+)	(-)
Stading et al., 1996	HB	A multiple-baseline-across tasks (sets)	(-)	(-)	IOR (+) AR (-)	(-)
Skinner, Belfiore et al., 1997	SE (segregated boarding school serving students with BD)	Multiple-phase alternating treatments	(-)	(-)	IOR (+) AR (+)	(-)
Stone et al., 2002	HB	A multiple-probes-across tasks (problem sets)	(-)	Generalization among sets	IOR (+) AR (-)	(-)
Codding et al., 2007	I	Alternating treatments	4th and 12th days	With carry 3DX1D With carry 3D+3D	IOR (+) AR (+)	Student SA
Poncy et al., 2007	SE	Adapted alternating treatments	14.	(-)	IOR (+) AR (+)	(-)

Codding, Shiyko et al., 2007	GE	Control group design	(-)	(-)	IOR (+) AR (+)	Student SA
Becker et al., 2009	SE	ABC	(-)	(-)	IOR (+) AR (-)	Student and Impleme nter SA
Grafman & Cates, 2010	GE	Pre-test Post-test	(-)	(-)	IOR (+) AR (+)	Teacher and Student SA
Mong & Mong, 2010	GE	Adapted alternating treatments	6.	Without carry 2D+2D Without carry 2D + 2D Without Decimal 2D-2D Without Decimal 2D-2D	IOR (+) AR (+)	(+) Student SA
Poncy & Skinner, 2011	GE	A multiple-probes(sets)-across task	Set A 10th day Set B 5th day Set C 1st day	(-)	IOR (+) AR (+)	(-)
Mong & Mong, 2012	GE	Brief experimental analysis/ Alternating treatments	5th and 15th days	1D+1D Without carry 2D+2D Without carry 2D+2D 1D-1D Without Decimal 2D-2D Without Decimal 2D-2D	IOR (+) AR (+)	(+) Student SA
Poff et al., 2012	I (GE Behaviour intervention class)	Multiple probes across AB and skills (sets)	(-)	(-)	IOR (+) AR (-)	(-)
Poncy et al., 2012	GE	Adapted alternating treatments (with control status)	(-)	(-)	IOR (+) AR (+)	(-)
Saygılı & Ergen, 2016	GE	Adapted alternating treatments	7th and 28th days	Subtraction and division	IOR (+) AR (+)	Student SA SI
Morton & Gadke, 2018	SE (a university-affiliated clinic serving students with A and ID)	Multiple probe single-subject experimental design (A/BC)	(-)	(-)	IOR (+) AR (+)	(-)
Schrauben & Dean (2019)	SE (public school attended by the students with BD)	A multiple-probes-across participants	(-)	(-)	IOR (+) AR (+)	(-)
Alptekin, 2019	SE (research centre in a public university)	A multiple-probes(sets)-across task	7th, 15th and 30th days	(-)	IOR (+) AR (+)	Student and Teacher SA SI

GE: General Education, SE: Special Education HB: Home Based I: Inclusion IOR: Inter-Observer Reliability: AR: Application Reliability, SA: Self-Assessment, UT: Undefined Time, SI. Social Inclusion, D: Digits BD: Behavioural Disorder, A: Autism, ID: Intellectual Disability

EDUCATIONAL SETTING

As it can be seen in Table 2, 9 of these studies were conducted in general education settings; 9 of them in segregated special education settings; 2 of them in home settings; and 2 of them in inclusion settings.

RESEARCH MODEL

When Table 2 is analysed, it is seen that 20 studies were conducted with single-subject experimental design and 2 of them with experimental design; 5 of them with single-subject experimental design, 3 of them with multiple probe design; 6 of them with adapted alternating treatments design; 2 of them with alternating treatments design; 1 of them with multiple-probes-across tasks design; 1 of them with ABC; 1 of them with multiple phases A/BC; 1 of them with both multiple prove AB design. Mong and Mong (2012) also made a brief experimental analysis in their study conducted with adapted alternating treatments.

MAINTENANCE

When the maintenance data given in Table 2 were examined, it was seen that maintenance data were collected from 10 studies. When the maintenance data were analysed in these studies, it was seen that maintenance data were collected in min. 1 day and max. 8 months after the application was completed.

GENERALIZATION

When the generalization data were examined in Table 2, it was seen that generalization data was collected in 5 studies. The other studies did not collect generalization data. As it is seen in Table 2, it was evaluated in these studies whether the target skills gained through CCC applications provide generalization between behaviours.

RELIABILITY

When the reliability data in these studies were examined, it was seen that inter-observer reliability data for a dependent variable were collected in all studies. While the application reliability data were collected for independent variables from 17 studies, it was found that 5 studies could not collect reliability data for the independent variable. It was not indicated in the table since the reliability coefficient of variables is above 95% in all studies.

SOCIAL VALIDITY

As it is given in Table 2, social validity data were collected in 8 studies. The social validity data were collected in 4 studies only through student self-assessment; in 2 studies through both teacher and student self-assessment; in 1 study through student self-assessment and social comparison, in 1 study through both student and teacher self-assessment and social comparison.

INTERVENTION-RELATED FEATURES

Intervention features of the studies, evaluated within the scope of this research, were examined in the categories of implementer, presentation style, the CCC intervention and application steps. Data on the analysed categories are given in Table 3.

Table 3. *Data on Application-Related Features*

Resource	*Implementer /Presentation Type:*	*CCC model*	*CCC 1*	*CCC 2*	*CCC 3*	*CCC 4*	*CCC 5*	*CCC + Additional Procedure*
Skinner et al., 1989	Rsr/one-to-one	CCC	Reads the fact and its answer.	Covers the fact and its answer.	Writes the fact and its answer.	Opens the covered section.	Compares the answer with their answer.	(-)
Skinner et al., 1991	Rsr/one-to-one	VCCC	Reads the fact and its answer.	Covers the fact and its answer.	Verbally responds to the fact.	Opens the covered section.	Compares the answer with their own answer.	(-)
		WRCC (Classical intervention)	(Same)	(Same)	Writes the response about the fact	(Same)	(Same)	(-)
Skinner et al., 1992	Rsr/one-to-one	SDF+CCC (Classical intervention)	Reads the fact and its answer.	Covers the fact and its answer.	Writes the fact and its answer.	Opens the covered section.	Compares the answer with their answer.	(-)
		PDF+CCC	(Same)	(Same)	(Same)	-	After writing the fact, the peer compares the index card and tells him/her to continue if the answer is correct; If it is wrong, it does not respond verbally by showing the operation and the answer again.	(-)
Skinner et al., 1993	T/one-to-one	C-CCC	Reads the fact and its answer.	Covers the fact and its answer.	Responses subvocal the fact and its answer.	Opens the covered section.	Compares it with his/her answer.	(-)
Lee & Tingtrom, 1994	Rsr and T/G	CCC	Reads the fact and its answer.	Covers the fact and its answer.	Writes the fact and its answer.	Opens the covered section.	Compares the answer with their answer.	(-)
Stading et al., 1996	P/one-to-one	CCC	Reads the fact and its answer.	Covers the fact and its answer.	Writes the fact and its answer.	Opens the covered section.	Compares the answer with their answer.	(-)
Skinner, Belfiore et al., 1997	Rsr/one-to-one	VCCC	Sees the fact and its answer and reads them aloud.	Covers the fact and its answer.	Verbally responds to the fact.	Opens the covered section.	Compares it with his/her answer.	(-)
		WCCC	(Same)	(Same)	Writes the response about the fact	(Same)	(Same)	(-)

Stone et al., 2002	P/one-to-one	CCC+R	Reads the fact and its answer loudly.	Covers the fact and its answer.	Writes the fact and its answer.	Opens the covered section.	Compares the answer with their answer.	Time-test is conducted after the intervention and if the student maintains a high level of performance is given reward.
Codding et al., 2007	Rsr/one-to-one	CCC	Reads the fact and its answer.	Covers the fact and its answer.	Writes the answer.	Opens the covered section.	Compares the answer with their answer.	(-)
		PFDC+CCC	(Same)	(Same)	(Same)	(Same)	(Same)	The graphical feedback to the number of correct facts performed by the student in 1 minute at the end of each session.
		PFDI+CCC	(Same)	(Same)	(Same)	(Same)	(Same)	The graphical feedback to the number of wrong facts performed by the student in 1 minute at the end of each session.
Poncy et al., 2007	SET and SP/one-to-one	CCC + repetition	Reads the fact and its answer.	Covers the fact and its answer.	Writes the fact and its answer.	Opens the covered section.	Compares the answer with their answer.	Verbally repeats the correct fact and its answer three times. Marks three circles in the table and moves on to the next fact.
Codding, Shiyko et al., 2007	Rsr/G	CCC	Reads the fact and its answer.	Covers the fact and its answer.	Writes the fact and its answer.	Opens the covered section.	Compares the answer with their answer.	(-)

Becker et al., 2009	Rsr/one-to-one	CCC	Reads the fact and its answer.	Covers the fact and its answer.	Writes the fact and its answer.	Opens the covered section.	Compares the answer with their answer.	After all facts are completed, the researcher identifies the wrong facts. And models the correct answer. The student verbally repeats and writes them many times. Reads the wrong answers once more.
		CCC+ED	(Same)	(Same)	(Same)	(Same)	(Same)	
Grafman & Cates, 2010	T/G	CCC	Reads the fact and its answer.	Covers the fact and its answer.	Writes the fact and its answer.	Opens the covered section.	Compares the answer with their answer.	(-)
		Versus CCC	(Same)	Copies the fact and its answer from the written model and covers them.	(Same)	(Same)	(Same)	(-)
Mong & Mong, 2010	Rsr/one-to-one	CCC	Reads the fact and its answer.	Covers the fact and its answer.	Writes the answer.	Opens the covered section.	Compares the answer with their answer.	(-)
Poncy & Skinner, 2011	Rsr and T/G	CCC+S+GR	Reads the fact and its answer.	Covers the fact and its answer.	Writes the fact and its answer.	Opens the covered section.	Compares the answer with their answer.	S: 5 minutes after the CCC, students are given sprint intervention worksheets and asked to do them in 2 minutes. GR: Reward is given to the students once a week, if there is an increase in their performances.
Mong & Mong, 2012	Rsr/one-to-one	CCC	Reads the fact and its answer.	Covers the fact and its answer.	Writes the answer.	Opens the covered section.	Compares the answer with their answer.	(-)

Poff et al., 2012	Rsr/one-to-one	CCC	Reads the fact and its answer.	Covers the fact and its answer.	Writes the answer.	Opens the covered section.	Compares the answer with their answer.	If the student gives the wrong answer, s/he re-writes the correct answer 3 times.
Poncy et al., 2012	T/G	CCC is implemented different from Classical CCC)	Reads the facts from the printed fact family triangle (7-12-5).	Closes the triangle.	Writes the possible fact and its answer to the first box (12-5=7)	Writes the other possible fact and its answer to the other box (12-7=5)	Controls and compares the facts and their answers from the model.	(-)
Saygılı & Ergen, 2016	Rsr/one-to-one	CCC	(Flashcards of the facts are shown to the students for 5 minutes and they were asked to read it aloud). Reads the fact and its answer.	Covers the fact and its answer.	Writes the answer.	Opens the covered section.	Compares the answer with their answer.	The student put a smiling face next to correct answers and move on to the next fact.
Morton & Gadke, 2018	Rsr/one-to-one	CCC	Reads the fact and its answer.	Covers the fact and its answer.	Writes the fact and its answer.	Opens the covered section.	Compares the answer with their answer.	(-)
		Versus CCC	(Same)	Copies the fact and its answers from the model. Then, covers the fact and its answer.	(Same)	(Same)	(Same)	(-)
Schrauben & Dean, 2019	RSR/one-to-one	CCC	Reads the fact and its answer.	Covers the fact and its answer.	Writes the fact and its answer.	Opens the covered section.	Compares the answer with their answer.	(-)
Alptekin, 2019	T/one-to-one	CCC	Reads the fact and its answer.	Covers the fact and its answer.	Writes the answer.	Opens the covered section.	Compares the answer with their answer.	(-)

G: Group, Rsr: Researcher, F: Family, T: Teacher, SET: Special Education Teacher, SP: School Psychologist

IMPLEMENTER AND PRESENTATION STYLE

According to Table 3, it is seen that the independent variables were implemented by *the researcher* in 13 studies; by *teacher* in 4 studies; by *the researcher and teacher* in 2 studies (together); by *the teacher and school psychologist* in 1 study (together). When the studies were analysed in a way CCC was presented to the participants, 17 studies were conducted *one-to-one*; and in 5 studies presented *according to the group*.

CCC MODEL AND APPLICATION STEPS

As it is seen in Table 3, CCC is applied in the classic form in 17 studies that identify effectiveness or compare different studies. 5 classic application steps of CCC, named as W-CCC in some studies, are as follows; (student) a) Reads the fact and its answer, b) Covers the fact and its answer, c) Writes the fact and its answer, d) Opens the covered section, e) Compares it with his/her answer. When the studies, in which CCC were applied differently were examined, it was seen that there were 4 different methods such as V-CCC; C-CCC (Skinner et al., 1993); Versus-CCC and PDF-CCC. Different from classic CCC, V-CCC has the third step where the student gives a verbal response to the fact instead of a written response. In the third step of C-CCC, the student gives a subvocal response to the fact instead of a written response. In the second step of Versus-CCC, the student copies the fact and its answer from the written copy instead of covering the fact and answer immediately. In the fifth step of PDF-CCC, the student compares his/her fact and answer with his/her peers' answer.

However, there are also studies investigating the effect of CCC by adding different procedures after classically applying the intervention steps. These procedures are defined as R; PFDC and PFDI; repetition; ED and S+GR. The implementation of these procedures is explained in Table 3. In addition, in the study of Poncy et al. (2012), CCC steps are applied in different ways. It consists of 5 steps including (student) a) reads the facts from the printed fact family triangle (7-5-12), b) covers the triangle, c) writes potential fact and its answer (12-5=7), d) writes the other potential fact and its answer to another box (12-7=5), e) compares the accuracy of these facts and answers from the model.

FEATURES ACCORDING TO THE RESULTS

The results of the studies considered within the scope of this research were examined in the categories of maintenance, generalization, and social validity. Data related to analysed categories are given in Table 4.

Table 4. *Data related to Features of Results.*

Resource	*Effectiveness Results*	*Maintenance Results*	*Generalization results*	*Social Validity Results*
Skinner et al., 1989	CCC is effective in increasing the fluency rate of all participants.	Two of three participants maintain their frequency, while 2 participant's level of fluency is decreased.	(-)	(-)
Skinner et al., 1991	The accuracy and frequency rate of both participants were increased in V-CCC. While the accuracy and fluency rate of the first participant increased, this increase is less in the second participant. Both interventions are effective in increasing fluency. However, V-CCC is slightly more effective than W-CCC.	(-)	(-)	(-)
Skinner et al., 1992	Both interventions increased the accuracy and fluency rate of all participants in multiplication facts. However, SDF+CCC is more effective in 4 participants, while PDF+CCC is more effective in 2 participants. Furthermore, SDF+CCC is more efficient than PDF+CCC in terms of time.	(-)	(-)	(-)
Skinner et al., 1993	C+CCC is effective in increasing the accuracy and fluency of the first and second participants. The third participant could achieve mastery during C-CCC intervention. To reach the level of expertise, goal setting + performance feedback is used together with C-CCC.	The first and the second participants maintain their performance achieved after 8 months in all sets. The third participant maintains the performance level reached Set A and Set C after 8 months, but fell below his/her performance in Set B.	(-)	(-)
Lee & Tingtrom, 1994	Four of five participants performed with accuracy and fluency above the mastery level. One participant performed with an accuracy and fluency rate below the master level in one set. CCC is effective in increasing accuracy and fluency rate when it is applied to the group.	While 3 out of 5 participants maintain their mastery in the following steps, 2 participants performed below the mastery level.	(-)	(-)
Stading et al., 1996	CCC is effective in increasing the accuracy rate of the participant in multiplication facts. Also, it is observed to be successfully applied by the families at the home.	(-)	(-)	(-)
Skinner, Belfiore et al., 1997	The fluency of both participants is increased. The increase in corrective response rates is more significant during V-CCC. V-CCC further increased the accuracy and fluency rate compared to W-CCC.	(-)	(-)	(-)
Stone et al., 2002	Both interventions are effective in increasing the accuracy rate; however, FC+R has a greater effect on increasing the accuracy rate in all sets than CCC+R. Both interventions are defined to be successful in-home environments.	(-)	CCC+R procedures provided generalizations for some materials.	(-)

Codding et al., 2007	The accuracy and fluency rates of participants increased in all three interventions. The increase in all interventions is similar. The third participant could not achieve mastery level but increased the fluency rate.	Participants maintained the achieved performances.	The participants were not able to generalize their performance to answer more difficult multiplication and addition facts (even though there were small increases).	1 Participant mostly preferred CCC, Participants 2 and 3 mostly prepared CCC+PFDC and CCC+PFDI.
Poncy et al., 2007	There is not much difference in both interventions in terms of effectiveness in increasing the accuracy and fluency rate. However, TP is more efficient than CCC in terms of time.	The participant maintains his/her performance similar to the rate that is achieved in both interventions.	(-)	(-)
Codding, Shiyko et al., 2007	The fluency and accuracy rate of participants increased in both interventions. However, fluency and accuracy rates in ET are higher in increasing educational objectives.	(-)	(-)	Participants mostly preferred to use ET in the rating scale.
Becker et al., 2009	CCC interventions are effective in increasing the accuracy rate. CCC introduced with Error drills has further increased this effect.	(-)	(-)	Generally, it was found to be successful and positive by the researcher. Its implementation took a short time such as 10-12 minutes. Participants are quite happy with their change and proud of their achievements.
Grafman & Cates, 2010	While both interventions have the same effect on the accuracy rate, the fluency rate is higher in CCC.	(-)	(-)	More participants choose to apply CCC. Both teachers preferred to apply Versus-CCC.
Mong & Mong, 2010	Both methods are effective in increasing the fluency and accuracy rate of all participants. However, MTM has a higher effect on 3 participants. CCC (shorter time than MTM) is more efficient than MTM.	The participants maintained their achieved performances on the 6th and 18th days.	While the accuracy rate of the participants increased, the error rate decreased according to the baseline level in the mixed tests applied for generalization.	CCC scored higher in the questionnaire applied to the participants. The participants liked CCC more and stated that it would help them at school. However, they underlined that CCC is not the best way to gain fluency, but MTM.
Poncy & Skinner, 2011	CCC+S+GR is effective in increasing the level of accuracy and fluency. However, it was not effective for 1 participant at all. There was a small increase in 2 participants.	Participants maintained the achieved performances. However, there was a certain increase in 4 four participants.	(-)	(-)
Mong & Mong, 2012	While CCC is effective in one of the three participants, MTM is effective in 2 participants. TP is found to be the most efficient method in the same 3 participants.	CCC and MTM are more effective methods than TP for maintaining the achieved performance.	While MTM is the most effective method in generalization, it is followed by CCC and TP.	TP is the most appealing intervention for all participants. All participants liked these three methods and indicated that it would help them at school.

Poff et al., 2012	While the accuracy rate of all participants increased, the error rate decreased.	(-)	(-)	(-)
Poncy et al., 2012	Both interventions are effective in improving fluency. However, TP is more effective in improving fluency and more efficient than CCC in terms of time.	(-)	(-)	(-)
Saygılı & Ergen, 2016	The fluency rate of participants increased in both interventions. Both have a similar effect in increasing the fluency rate.	The maintenance data of all participants, except for 6 participants, are above the overall average. Both interventions have a similar effect on maintenance.	While 5 out of 6 participants generalized the fluency gained in addition facts to subtraction facts, none of the participants could generalize their performance gained in multiplication facts to division facts. The accuracy rate in subtraction and division facts has increased in both interventions. However, CS was found to be more effective than CCC.	According to the subjective evaluation results, participants mostly preferred the calculation strategies presented through games and stories. According to social validity results, participants reached and even passed the level of their peers in both interventions.
Morton & Gadke, 2018	Both interventions have a similar effect on enhancing fluency in math facts.	(-)	(-)	(-)
Schrauben & Dean (2019)	CCC provided an increase in all participants (from baseline) but this increase did not show sufficient correlation for effectiveness within the framework of statistical measurements.	(-)	(-)	(-)
Alptekin, 2019	CCC is effective in all sets to increase the fluency rate of the participant.	The participant maintains his/her performance in all sets reached on the 7th, 15th and 30th days.	(-)	According to self-assessment results, the participant and teacher gave positive feedback about the use of CCC and the effects of its results on the participant. According to social comparison data, participant's fluency reached the level of his/her peers in multiplication facts and effective results were achieved; however, additional procedures had to be applied to allow a student to reach the specified criteria.

EFFECTIVENESS RESULTS

As it is seen in Table 4, according to 5 studies analysing the effect of classic CCC intervention (Alptekin, 2019; Lee & Tingtrom, 1994; Poff et al., 2012; Skinner et al., 1989; Stading et al., 1996), CCC was found to be effective in increasing the fluency and accuracy rate in basic math facts. In the study of Schrauben and Dean (2019), although CCC increased the fluency rate of participants, the results were not significant in terms of effectiveness. In the study, in which the effectiveness of Cognitive (C) - CCC (Skinner et al., 1993) was analysed, effective results were achieved; however, additional procedures had to be applied to enable one student to reach the defined criteria.

Analysing the effectiveness of S+GR +CCC (Poncy & Skinner, 2011) applied on participants, the intervention was found to be effective in increasing fluency of 2 participants while it was not effective in 1 participant.

In the studies where CCC was compared with various interventions, it was found that CCC was effective in increasing the fluency rates of participants in basic math skills. In two studies comparing V-CCC and W-CCC (Classical Intervention), both interventions were found to be effective, but participants presented a higher performance in V-SCCC (Skinner et al., 1991; Skinner, Belfiore et al., 1997). In another study comparing the effect of SDF+CCC and PDF+CCC, it was found that both interventions were equally effective; however, PDF+CCC was found to be more efficient in terms of time (Skinner et al., 1992). In the study where PFDC+CCC, PFDI+CCC, and CCC were compared, effective results were obtained in all three interventions, but it was observed that one participant could not reach mastery despite the significant increase in his/her performance (Codding et al., 2007). In another study where ED+CCC and CCC were compared, both interventions were found to be effective in increasing fluency, but it was found that ED increased the effectiveness of CCC even more (Becker et al., 2009). In the study where CCC and Versus-CCC were compared (Grafman & Cates 2010; Morton & Gadke, 2018), both interventions were found to be effective in increasing the accuracy and fluency rate. However, according to the study of Grafman and Cates (2010), it was found that CCC applied in a classic form was more effective in increasing the fluency rate.

In the studies comparing different techniques, CCC was found to be effective in increasing the fluency rate in basic mathematical facts. In the study where CCC was compared with FC+R, both were found to be effective, but it was observed that FC+R interventions had a greater effect. In two of the studies where CCC and TP were compared, it was found that CCC and TP interventions had similar effects, but TP was more efficient in terms of time (Poncy et al., 2007; 2012) In the study in which CCC and ET were compared, both interventions were found to be effective, but it was observed that ET had higher effectiveness (Codding, Shiyko et al., 2007). In the study in which MTM and CCC were compared (Mong & Mong, 2010), it was found the MTM was more effective, while CCC was more efficient. In the study where Mong and Mong (2012) compared MTM, CCC, and TP interventions, participant performances increased in all interventions, but MTM was found to be more effective, and TP was found to be more efficient. In the study of Saygılı and Ergen (2016) where they compared CS, both interventions were found to have similar effectiveness.

MAINTENANCE RESULTS

When the studies are examined under this study, as it can be seen in Table 4, although the results of some studies (Lee & Tingtrom, 1994; Skinner et al., 1993) vary according to the participants, it is observed in many studies (Alptekin, 2019; Codding et al., 2007; Mong & Mong, 2010; 2012; Poncy et al., 2007; Poncy & Skinner, 2011; Saygılı & Ergen, 2016; Skinner et al., 1993) that participants maintain their performances after a certain period. In the study of Skinner et al., (1989), 2 participants maintained their performance at a similar level, while 1 participant's performance decreased. In the study of Skinner et al., (1993), the first participant in three sets and the second participant in two sets maintained their level of fluency. In the study of Lee and Tingtrom (1994), 3 out of 5 participants maintained their level of mastery, while 2 of them failed. According to a comparative study conducted by Mong and Mong (2012), CCC and MTM were found to be more effective than TP. In the other comparative studies (Codding et al., 2007; Mong & Mong, 2010; Poncy et al., 2007; Saygılı & Ergen, 2016), the effects of other interventions compared with CCC were found to be similar.

GENERALIZATION RESULTS

When the data were analysed in Table 4, participants received positive results in the generalization of acquired skills to the other behaviours (Mong & Mong, 2010; 2012; Saygılı & Ergen, 2016; Stone, et al., 2002). In the study of Codding et al., (2007), although small increases were observed, there was no generalization of performances in more difficult multiplication and addition facts. According to a study of Mong and Mong (2012), MTM was defined to be the most effective method in generalization, and then it was followed by CCC. According to the study of Saygılı and Ergen (2016) participants generalized their performances in addition facts to subtraction facts; however, they could not generalize their performance in multiplication to division facts. In addition, CS was found to be more effective than CCC in generalization.

SOCIAL VALIDITY RESULTS

When the social validity data of the studies were analysed in Table 4, it was seen that all of them were comparative studies (Becker et al., 2009; Codding et al., 2007; Codding, Shiyko et al., 2007; Grafman & Cates, 2010; Mong & Mong, 2010; Mong & Mong, 2012; Saygılı & Ergen, 2016) except for one study (Alptekin, 2019). Comparative studies were conducted to determine the methods generally preferred by the participants in self-assessment. In one study, 1 participant preferred the CCC, and the other 2 participants preferred PFDC+CCC and PFDI+CCC (Codding et al., 2007). In another study, the participants preferred ET more than CCC (Codding, Shiyko et al., 2007). In the study of Grafman and Cates (2010), most of the participants preferred CCC. In a study where TP and the CCC were compared, CCC got the highest score from the participants and participants stated that they would use it, but CCC was not the best way to enhance fluency (Mong & Mong, 2010). In another study of Mong and Mong (2012), TP, MTM, and CCC were compared, and the participants stated that they liked all methods, but chose TP as the most appealing intervention and they considered all three methods to be helpful. In the study of Saygılı and Ergen (2016), all participants preferred CS rather than CCC. Additionally, social comparison was made in the study, and it was observed that participants reached the level of their peers in both interventions. Alptekin (2019) and Becker et al., (2009) separately collected self-assessment data from teachers and participants in their studies, and as a result, both participants and teachers gave positive feedbacks on CCC interventions. Alptekin (2019) also collected social comparison data and found that the student reached the level of her peers.

DISCUSSION, CONCLUSION AND IMPLICATIONS

In this study, 22 studies conducted with the CCC, which are used to enhance accuracy and fluency in basic facts, were examined and analysed in the light of specified categories. In this section, the findings obtained for each category are discussed, respectively.

A total of 236 participants were included in these studies conducted with the CCC. Therefore, this is a significant number to generalize the obtained results. However, when the gender of these participants is examined, it can be said that the number of females and males are similar. None of these studies specifically noted that gender makes a difference. Therefore, the obtained results can be generalized to all students in terms of gender. It is identified that participants were between the ages of 7-12 in all studies enhancing fluency in basic facts with the CCC. In addition, when it is considered in terms of class level, it has been identified that 12 out of 16 participants were from the 2nd and 5th grade; 4 of them were from the 6th and 10th grade and 1 of them was from the 1st grade. Considering that acquisition of basic math skills and enhancement of fluency in the curriculum starts at the 2nd grade, namely between the ages of 8-9 and it gets more difficult in upper classes (MoNE, 2018; NCTM, 2000), it seems reasonable that these studies conducted with the students ranging from 2nd grade to 10th grade and between the ages of 7-12. Regarding these studies, only 1 participant continues to 10th grade in the study of Skinner et al. (1989) At the same time, this participant is a student with special needs diagnosed with BD. Regarding the students with special needs, it is necessary to adapt the curriculum and ensure that they benefit from educational services in line with their educational needs (Özyürek, 2010; Salend, 2001). Furthermore, because students with special needs are behind their typically developing peers (Freeman & Alkin, 2000), it may be better to focus on the needs (Fiscus & Mandell, 2002; Martin et al, 2006) rather than the age and class level of students with special needs in these studies. When the results of these studies were combined, positive results were obtained from the CCC interventions in the first and second-grade students and ages. Therefore, it can be said that the CCC is a method that can be easily used by implementers for increasing accuracy and fluency rate in basic facts.

When the findings were examined in terms of diagnosis, studies were conducted with a total of 205 typically developing participants, 23 students with special education needs, and a total of typically developing 8 participants who showed considerably lower mathematic achievements than their peers. Although typically developing students are evaluated in the category of students with special needs, it can be said that the number of participants, in the studies conducted for students with special needs, is quite limited. For the generalization of the results, it can be said that there is still a need to focus on studies conducted with students with special needs and investigate their results. However, regarding the results obtained in this study, it is considered that the CCC is a scientifically based intervention that can be easily used by all students both with typically developing and special needs.

The dependent variable in all studies, except one study, is basic facts (addition, subtraction, multiplication, and division) skills. In this study, adding and subtracting fractions were used as the dependent variable. Many researchers underline the importance of fluency in basic facts skills for acquiring high-level mathematics skills. (Aspiranti et al., 2011; Hinton, Strozier & Flores, 2014; Gurganus, 2017; Hudson & Miller, 2006; Kleinert et al., 2017; McCallum et al., 2010; Stein et al., 2006). This might be the reason for focusing on basic facts to enhance math fluency. Furthermore, the results obtained from the studies on calculation skills such as basic skills in fractions and decimal numbers may serve to determine whether the positive effects of the CCC are limited to the calculation skills in basic facts.

There are 8 studies with one independent variable while there are 14 comparative studies with more than one independent variable in these studies. While 7 comparative studies are compared with different CCC interventions, 7 of them compare different techniques applied in enhancing fluency. The independent variables will be discussed in the following paragraphs, along with the application and results.

When the educational settings were examined in these studies, the educational settings could be evaluated in three categories as general education, segregated special education schools and inclusive arrangements. Furthermore, these were studies conducted by parents in a home environment with positive results. 9 studies were conducted in general education settings, 9 of them were conducted in special education settings, 2 of them were conducted in inclusion settings and 2 of them were conducted in-home settings. According to these data, it can be considered that there is still a need for further studies with students with special needs who are studying at special education settings serving with inclusion arrangements and in-home settings. Furthermore, when the educational settings and findings of the research were combined with the results, it can be indicated that the CCC is a method that can be used but implementers in general and special education and home settings. Increasing such interventions in-home setting in the light of evidence-based data will allow parents to experience-qualified and successful lives while working with their children. In addition, considering the learning needs of students with special needs, it may not be possible for them to acquire everything in the school setting (Özyürek, 2010; Wolery, Ault & Doyle, 1992). Basic, simple, and inexpensive interventions that enable systematic studies in the home environment can be taught to parents in a short time.

When the research models in which studies under this research were examined, it was identified that 20 studies were conducted with single-subject experimental designs, one-to-one or small groups of participants; 2 studies were conducted with experimental designs with larger groups of participants. Based on this finding, focusing on studies using experimental designs with larger groups of participants will help to further generalize the results obtained with the CCC.

The hierarchical structure of math skills follows an order from easy to difficult. Within this hierarchical structure, previously learned skills from the basis to a higher-level skill in more complex form to be learned later. Because of this structure of mathematics, it not enough to acquire these skills. It is also quite important to maintain the acquired skills, that is, to be permanent (Gurganus, 2017; Hasselbring, Goin & Bransford, 1987; Hinton et al., 2014; Reys et al., 2009; Shapiro, 2011; Woodward, 2006). It was seen that the effects of the CCC interventions on maintenance were reviewed in 10 studies. It is noteworthy that only 2 out of 10 studies whose maintenance data were collected, were carried out before 1990, while the others were carried out in the last decade. Planning and testing the process of determining the effects of CCC on maintenance in recent years is an indicator that the importance is given on maintenance of the skills acquired in mathematics is gradually increasing. The maintenance of the effect of the CCC is tested only in one study after 8 months and positive results are obtained. Conducting studies to determine the maintenance of effects can provide evidence-based data to increase the efficiency of the CCC interventions.

Generalization is the ability for a student to perform a behaviour that s/he has gained under different conditions. One of the purposes of the education is to generalize and use the important behaviours or skills gained in schools (Carnine, 1997; Carnine, Dixon & Kame'enui, 1994; Özyürek, 2010; Wolery et al., 1992). Therefore, implementers should prefer methods that allow generalization and examine the effects of applied methods while planning about the generalization of skills gained by the students. Generalization data were collected in only 5 out of 22 studies within the scope of the research, all these studies were conducted after the year 2000. The effect of the CCC interventions on generalization have been examined in recent studies. This situation shows that the importance of generalization in teaching has been better understood recently. It is seen that there is still a need for research to determine the effects of the CCC interventions on generalization due to limited number of studies which collects generalization data. Although it is limited, these studies were generally evaluated whether the participants generalize the skills that they gained to more difficult level of target skills. It was investigated only in one study, if the participant generalized one calculation skills to another skill (Saygılı & Ergen, 2016). The collection of such generalization data will determine the effectiveness of the CCC related interventions. In addition, it is important to note that there is no study that determines whether students generalize the "sprint" in basic facts to the "sprint" of performing more difficult facts. Investigating whether the speed affects the speed of more difficult calculations skills (whether they are generalized or not) can make an important contribution in terms of the CCC interventions.

Reliability means determining the same amounts because of the measurements of the dependent variable consecutively and by different people in a study (Erbaş, 2012; Horner & Odom, 2014; Horner et al., 2005; Kazdin, 1982; Miles & Huberman, 1994). In addition, Horner et al. (2005) stated that one of the most important criteria for a research to be scientifically based is the reliable implementation of the research. The data were collected for the dependent variable in all studies conducted with the CCC, and for the independent variable in 17 studies to determine if the CCC was performed as planned. More than 95% of these studies were found to be reliable. These values are above the acceptable reliability (Erbaş, 2012; Horner & Odom, 2014; Horner et al., 2005; Kazdin, 1982;

Miles & Huberman, 1994) values. In this case, it can be said that CCC meets an important criterion for being a scientifically sustainable intervention and the results obtained from these studies are reliable.

Social validity is an important indicator determine the social importance, appropriateness, and satisfaction level of the relevant people in the scientific studies about the intervention and obtained results (Kennedy, 2002; Kurt, 2012; Vuran & Sönmez, 2008). Therefore, it is remarkable that only social validity data were collected in 8 studies analysed within the scope of this research. Self-assessment and social inclusion are most common data collection methods in collecting data for social validity (Kennedy, 2002; Kurt, 2012; Vuran & Sönmez, 2008). In the studies evaluated within this scope, it was seen that mostly student self-assessment data were collected. Moreover, there are limited number of studies in which social validity data were collected by self-assessment of the teachers. Students or teachers applying the method are direct consumers who contribute to CCC interventions. Information directly received from consumers is a situation that increases the social importance of the studies (Kennedy, 2002). Although the number of social validity data is limited in the studies within the scope of this study, data collected directly from the consumers increased the importance of these studies. It is also noteworthy that social comparison data were collected in only 2 of the reviewed studies (Alptekin, 2019; Saygılı & Ergen, 2016). Mathematic is a study area where data related to fluency and social comparison can easily be collected in basic calculation skills. Social comparison is seen as an important data source for social validity in recent studies, as it serves to determine the effect of applied methods on approaching peers' performance (Kennedy, 2002).

When the implementation styles and steps were examined, it was observed that the CCC was applied differently from traditional style. V-CCC, C-CCC, V-CCC, PDF-CCC are evaluated as independent variables and their effects were analysed. As a result of these studies, positive results were also obtained in CCC interventions where the steps were different. In addition, positive results were obtained in studies where different procedures were added to the CCC such as R, PFD, PFDI, ED and S + GR. According to these findings, it can be said that the CCC can be used by making adaptations and it can be added to the end of the procedures that are based on reinforcement which will strengthen the effect of results to be obtained from CCC or provide more repetitions.

When the results of these studies were examined, although the performances of all 3 participants increased because of the traditional CCC intervention in only one study, the results were not found to be significant in terms of effectiveness (Schrauben & Dean, 2019). Furthermore, the results were not found to be significant in terms of effectiveness in one of the three participants of 3 studies (Codding et al., 2007; Poncy & Skinner, 2011; Skinner et al., 1993). However, it was concluded that CCC was effective in rest of the studies. For this reason, it can be concluded that CCC is effective in increasing the accuracy and fluency rate in basic facts skills in studies where it is compared with different techniques that were used in its classic form, adapted in its steps or additional procedures were added, and used in improving fluency. Similar results have been achieved in meta-analysis study of Joseph et al. (2012) and review studies of Stocker and Kubina (2017). When these results are combined with the participant characteristics, it can be said that CCC is effective in increasing the accuracy and fluency rate in basic math skills in both with typically developing students (whether they have low mathematics achievement or not). Although effective results were obtained with respect to CCC studies comparing different techniques, FC + R, MTM and ET methods have a higher effect than CCC in terms of efficiency and effectiveness in improving fluency. The application steps of these methods are based on numerous repetitions and error corrections may cause such result. In the study conducted by Mong and Mong (2010), where MTM and CCC is compared, CCC is found to be more efficient in term of time. However, it is not correct to state that CCC is more efficient than other methods based on single research result. Therefore, it might be said that further research is needed to compare effectiveness and efficiency.

8 out of 10 studies in which maintenance data were collected under this study, CCC was found to be effective in maintaining the performance achieved in target skills after a certain period. Based on this finding, it might be said that CCC ensures positive results for maintenance. However, it may be considered that there is still a need for research to determine the effect of CCC on maintaining the performance achieved in basic facts. It is possible to reach the same results for generalization data of the studies within the scope of this research. Because the number of studies with generalization data is quite low. Although positive results were obtained in these studies in terms of efficiency, it was deducted that CCC has similar or less effects compared to the other methods in comparative studies. Almost all the studies that collect data on social validity are comparative studies and the methods preferred by the participants were asked in these studies. The results were sometimes in favour of CCC or other methods in these studies. According to these data, it is not appropriate to say CCC is a more preferred methods than other methods.

As a result of these discussions, it can be said that CCC is a method that can be easily used for all students ranging from the first grate to tenth grade between the ages of 7-12, in general education and special education settings to enhance fluency in basic facts. In this regard, when the implementers want to enhance fluency in basic facts, they may benefit from CCC, which is an evidence-based intervention and ensures the systematic repetition. Furthermore, several research can be suggested in the light of these discussions. Conducting studies with students, especially with autism, intellectual disability and learning disability to identify the effect of CCC can contribute to generalize the results for students with special needs. It can be investigated whether CCC is effective in different skills that require calculation other than basic calculation skills. In addition, considering that studies conducted in home environment are quite limited, trainings can be provided for the parents on CCC application. Therefore, the researches can be conducted and results can be tested to define the effect of these studies and it might be an example of systematic interventions that increase the participation of parents in the education process of their children. CCC is applied one-to-one in most of the studies analysed within the scope of this study. It can be said that there is still a need for studies in relation to groups. Furthermore, it is seen that there is a need to investigate whether CCC interventions serve to generalize the skills acquired in basic facts skills to different conditions. When the studies were examined within the scope of the research, it was observed that effective results were obtained when additional procedures were added to CCC. While enhancing fluency in basic facts skills, the studies can be conducted to investigate the effectiveness and efficiency of CCC with other strategies such as goal setting, reinforcement, self-monitoring, self-management etc.

AUTHOR CONTRIBUTION

- First author have made substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data.

-The second author have been involved in drafting the manuscript or revising it critically for important intellectual content.

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Students' Self-Directed Online Learning Skills in Distance Higher Education: Students' Voice and Faculty Members' Supports

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Abstract

This study aims to examine self-directed online learning skills of undergraduate students and the ways of support provided by the faculty members. In this mixed-method study, the participants consisted of 399 undergraduate students studying at a state university in Turkey during the 2019-2020 academic-year spring semester, identified using convenient sampling and 12 faculty members, determined by maximum variation sampling method. Data collection tools included Self-Directed Online Learning Questionnaire and a semi-structured interview form. Independent Sample T-test from parametric tests, One-Way Analysis of Variance for multiple comparisons and LSD test were performed for the quantitative data analysis. In addition, the qualitative data were analyzed via content analysis. Some of the findings show the students have the highest mean score at time management dimension and the lowest one at help-seeking dimension. Female students have higher scores in general, metacognitive skills, persistence, and environmental structuring dimensions. The sophomore students have significantly higher scores than the senior students in terms of metacognitive skills dimension. Besides, the faculty members support the students to get the self-directed online learning skills, especially metacognitive skills and help seeking. However, their supports are limited to some kind of encouragement at time management, environmental structuring and persistence dimensions. The results show the necessity to support students to have self-directed online learning skills and assist faculty members in developing their students skills.

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INTRODUCTION

Higher education plays a vital role in developing knowledge, skills, attitudes and values that enable people to contribute to all humanity in the face of an increasingly complex, unstable and ambiguous world and in an age characterized by technological developments and recently a worldwide pandemic namely Covid-19. As in all over the world, in Turkey, all higher education institutions immediately started nation-wide distance education without any proper educational planning process. It is disappointing that there are still some problems related to distance education although more than one year has passed after the March, 2020 called as the emergency remote teaching and learning period (Hodges, Moore, Lockee, Trust, & Bond, 2020). Besides some infrastructural problems to be solved at national or institutional levels, there are ones related to the faculty members and the students needed to be examined closely and solved out immediately by the faculty members themselves at course/programme level. One of these problems is associated with students' self-directed learning skills, which is regarded as one of the utmost necessary thing for students to get active, responsible and engaged in their own learning process.

Self-directed learning, called as an amorphous term that lacked precise definition (Jarvis, 1990), an overarching concept (Van Wyk, 2017), has been described in a several ways as a goal of education, a learning aim, a learning skill, a skill to be mastered—all part of a learning process, a learning method, a process, self-planning of work, and the knowledge to understand what, when, and how presumably to learn, a purposive mental process, autonomous learning process, personal characteristic (Alharbi, 2018; Bhat, Rajashekar & Kamath, 2007; Song & Hill, 2007; Van Wyk, 2017; Van Der Walt, 2019). In that study, SDL is accepted as a purposive mental process, where the learners take responsibility for their own learning (Brookfield, 2009), usually accompanied and supported by behavioral activities involved in identification and searching for information (Bhat, Rajashekar & Kamath, 2007).

Self-directed learners have a heightened ability to adapt to changing social and contextual conditions (Jossberger, Brand, Gruwel, Boshuizen, & Van de Wiel, 2010; Morris, 2019), feel more empowered to take action when oppressed (Bagnall & Hodge, 2018). In addition, they are active and constructive in learning process (Ozen & Evin Gencel, 2016), and more likely to reach self-actualization (Arnold, 2017). Therefore, students need to improve their self-directed skills for not only academic success but also social and future professional development. As adults, they are better equipped to learn new skills (Barnes, 2016), remain employed (Morrison & Premkumar, 2014), nurture their own long-term career success (Seibert, Kraimer, and Crant, 2001), and support the personality traits/skills such as goal-setting, information-processing, executive, cognitive processing, and decision-making (Long, 2005).

Self-directed learning (SDL) gives learners the freedom and autonomy to choose what, why, how, and where of their learning (Francis, 2017). Those freedom and autonomy are among the most needed things to be successful in distance education because in distance education process, students are expected to take their own learning responsibility (Dembo & Eaton, 2000; Holec, 1981; Vanijdee, 2003; White, 2003) and they play an important role in attaining successful learning (Morris, 2019; Shaikh, 2013). In this process, learners consciously accept the responsibility for making decisions about goals and effort, and hence become their own learning change agents (Long, 2005). Learners' knowledge, attitude, and skill create their positive behaviors to succeed in distance education (Guglielmino & Guglielmino, 2013). If the learners are ready for distance education, the learning process will be an efficient and effective approach (Guglielmino & Guglielmino, 2013).

On the other hand, many kinds of research revealed that traditional learning experiences do not prepare students for the high degree of self-directed learning and control required in especially distance courses (Brooks, Nolan & Gallagher, 2001; Hartley & Bendixen, 2001). Due to the immediate transition to distance learning process where student choice, agency, and responsibility have greater importance, faculty members play greater roles to support their students' SDL skills as in formal classroom settings where teachers play an important role helping learners develop and apply those skills (Lunyk-Child et al., 2001). They must be able to facilitate and scaffold the learning process in addition to teaching content (Morris, 2019). Previous studies have shown that self-directed learning readiness or the ability to manage self-learning is more significant (Guglielmino & Guglielmino, 2013; Morris, 2019; Shaikh, 2013).

The self-directed learning concept arose in the 1980s as a research problem and, for decades, it has continued to be important for researchers and teachers (Zimmerman & Schunk, 2011). Nowadays life-long learning is increasingly significance and informal learning environments requiring self-direction skills increase (Beishuizen & Steffens, 2011), research in the area of self-directed learning is vast. The related literature includes general models (Caffarella, 1988; Candy, 1991; Garrison, 1997; Song & Hill, 2007), motivational elements, perceptions, and readiness to learn (Ayyildiz & Tarhan, 2015; Lee, Tsai, Chai, & Koh, 2014; Mello, 2016), undergraduate students' levels of self-directed skills (Askın Tekkol & Demirel, 2018; Slater, Cusick, & Louie, 2017) especially teacher candidates' (Gömleksiz & Demiralp, 2012; Kiliç & Sökmen, 2012), predictors of self-directed learning skills (Uysal & Gundogdu, 2019) and how to support them in that process (Çelik, 2012; Sağırlı vd., 2010; Şahin, 2010). Although the increasing emphasis on self-directed learning has continued to mature with attention shifting to the distance education context (Garrison, 2003; Moore & Kearsley, 2012; Song & Hill, 2007) and the number of research about the undergraduate students' self-directed learning skills in the distance learning processes (Bullock, 2013; Hursen, 2016) has increased, there is little to no research to how to support them in distance learning processes. Furthermore, an individual with a high level of readiness for self-direction in one context does not necessarily have the same readiness in a new and unfamiliar context (Fisher, King, & Tague, 2001), which makes it important to investigate students' self-directed skills in distance learning and different contexts like faculty, college or even country. A study that examines the students' level of self-directed skills and the level of support provided by the faculty members is necessary to provide further insight into how to support students' SDL in higher education context. The level of support provided by the faculty members is also an important issue at distance higher education like face-to-face one. Because faculty members need to create learning environments that favor independent and self-directed learning, in which students have opportunities to seek challenges, to reflect on their progress, and to take responsibility and pride in their accomplishments (Paris & Paris, 2001). It does not matter distance or face-to-face learning environment, faculty members need to apply appropriate methods that can improve academic self-direction but also present teaching models that promote SDL (Cazan, 2013; Núñez et al., 2011).

This study aims to investigate the undergraduate students' level of self-directed online learning skills and the ways of support provided by the faculty members. The following research questions guided the study:

1. What levels of the undergraduate students have self-directed online learning skills and are there any differences among those levels based on their gender, departments, and grade levels?

2. How do the faculty members support students' self-directed online learning skills in distance education?

METHOD

RESEARCH DESIGN

Mixed methods explanatory sequential design was conducted in this study. In explanatory sequential design, the researcher first collects quantitative data and then qualitative data, so the design is to begin with an objective quantitative study and to describe the results obtained at this stage in qualitative studies (Creswell, 2017). In that study, the quantitative data was firstly analyzed. Then, the qualitative data were collected and analyzed. Finally, quantitative and qualitative data were interrogated (Creswell, 2017).

SAMPLE

FOR THE QUANTITATIVE PART OF THE STUDY

Generally, the universe in quantitative studies is an abstract concept that is easy to define but difficult to reach. On the other hand, the term "restricted universe (study group of the research)" which consists of the accessible and concrete samples (Buyukozturk et al., 2012; Karasar, 2014) is preferred widely. From the restricted universe (a state university in Turkey), the sample consisted of the 399 undergraduate students who attended different departments of education faculty, selected through a simple random sampling method.

Table 1. *Demographic Information and Distribution of Students*

Gender	***f***	***%***
Male	105	26,44
Female	294	74,05
Grade	***f***	***%***
First	39	9,82
Second	163	41,05
Third	120	31,02
Fourth	77	19,39
Departments	***f***	***%***
Guidance & P. Counseling	132	33,24
Primary School	23	5,79
Turkish Language	49	12,34
Social Sciences	76	19,14
Math	47	11,83
English Language	31	7,80
Pre-school	41	10,32
Total	***399***	***100,0***

Given in Table 1, of the participants, there were more females (74.05%) than males (26.44%) involved in this study. Regarding school grade classification, 9.82% were freshmen, 41.05 % were sophomores, 31.02 % were juniors and 19.39% were seniors. About departments, 33,24% were guidance & psychological counseling , 5,79 % were primary school, 12,34% were Turkish language, 19,14 % were social sciences, 11,83% were math, 7.8 % were English language, and 10.32 % were pre-school teaching departments of the educational faculty. Those surveyed, all of them had been taking more than eight online courses previously while the research was being conducted.

FOR THE QUALITATIVE PART OF THE STUDY

The study group for the qualitative part of the study included twelve faculty members from the same faculty as the students studied determined by the maximum variation sampling method. Four female and eight male faculty members have PhD in different departments of educational faculty. Their professional experience year ranges from four years to twelve years. They all were responsible for at least one online course for the included departments. Three of them had coursed for all departments because they were responsible for common courses of the educational faculty, namely foreign language, introduction to education, and teaching methods/principles.

DATA COLLECTION TOOLS AND PROCESS

The quantitative data in the study were collected via the "Self-Directed Online Learning Questionnaire (SOLQ)" developed by Jansen, Leeuwen, Janssen, Kester, and Kalz (2016). The SOLQ was adapted into Turkish and proven as valid and reliable by Yavuzalp and Özdemir (2020). The scale involves five dimensions, namely metacognitive, help-seeking, time management, persistence and environmental structuring and has 36 items. The scale is in the form of a seven-point Likert scale ranging from one (Strongly Disagree) to seven (Strongly Agree). Exploratory and confirmatory data analysis were applied for the adaptation of the scale into Turkish. Exploratory factor analysis resulted in five factors. The factor loadings was corresponded between .393 and .906, the total eigenvalue of the scale was 22.34 and the total variance explained by the sample was 62.06%. Cronbach's alpha values were ranging between .70 and .95 for each dimension of the scale.

In that study, the reliability coefficient of this scale was re-calculated and found as .942 and concluded that the scale is a reliable one for determining skills. Besides, since the target group and sample group of the scale coincided with the sample of the research, there was no need for revalidation and confirmatory factor analysis.

The qualitative data in the study were collected via a semi-structured interview form developed by the researchers. The items of SOLQ and the findings in the quantitative study have guided the formation of research questions addressed in the qualitative phase (Creswell et al., 2013). For the credibility and transferability of the semi-structured interview forms, views about the forms were obtained from two different experts in the field of educational sciences. Based on their suggestions, the extra information about self-directed learning strategies were inserted in each question in parentheses.

The SOLQ was administered at the end of the spring term of 2019-2020 academic year, in the COVID-19 emergency remote teaching terms. It took nearly two weeks to obtain all the quantitative data because of the variance of the sampling. The collected data were subjected to comparative analysis according to gender, grade level, departments attended and academic achievement.

The interviews were made online at the end of the spring term of 2019-2020 academic year, in the COVID-19 emergency remote teaching terms. It took nearly three weeks to obtain all the data due to the heavy end of term workload of the faculty members. The obtained data were analyzed via content analysis.

DATA ANALYSIS

In the explanatory sequential design, the data analysis should proceed as "quantitative data analysis → qualitative data analysis → associating quantitative and qualitative data" (Creswell, 2017). The analysis process started with the analysis of quantitative data, then the analysis of qualitative data and followed by the relation of quantitative and qualitative data. The analysis of the quantitative part of this study was implemented using descriptive and inferential statistics. In the qualitative part, content analysis was applied. Finally, qualitative and quantitative data have been related to each other and discussed in detail.

QUANTITATIVE DATA ANALYSIS

Due to the normal distribution of the data (Kurtosis= 2.84; Skewness= -1.44) (Tabachnick and Fidell, 2013), Independent Sample T-test from parametric tests for gender-based differences and One-Way Analysis of Variance (ANOVA) for department and grade level based multiple comparisons were performed in addition to descriptive statistics such as frequency, percentage. Least Significant Difference (LSD) test was also applied to determine the source of the difference when necessary. Accepting the significance level as 0.05, the analyses of quantitative data were performed comparatively.

QUALITATIVE DATA ANALYSIS

The qualitative data was analysed using a conventional content analysis method (Fraenkel & Wallen, 2000). Firstly, the data were coded, then grouped into emerging sub/themes. Finally, the themes obtained are discussed in the light of relevant research in the literature.

In order to ensure confirmability, 20 % of the data was firstly coded by two researchers separately- both have PhD on curriculum and instruction and experience in quantitative analysis. Then, in a meeting with the focus of inter-coder reliability, the variation of codes, subthemes and themes which were determined separately were discussed and a consensus was reached. When the first coding process was over, the rest of the data was coded by one of the researchers alone but by making multiple checks afterwards. At the end of the process, two researchers met again to make a final check. Additionally, all data was stored in order to maintain confirmability. The method of the text should mainly give information about the methodological construction and the process followed throughout the study.

FINDINGS

FINDINGS of QUANTITATIVE DATA ANALYSES

THE LEVEL OF UNDERGRADUATE STUDENTS' SELF-DIRECTED ONLINE LEARNING SKILLS

The data obtained from the scale were examined, and the undergraduate students' self-directed online learning skills are presented in Table 2.

Table 2. *Mean scores of undergraduate students' self-directed online learning skills for the dimensions and in general*

Dimensions	*Number of items*	*N*	$\overline{X}$	*Percentage of scores (%)*	*Standard deviation*	*Minimum and maximum scores that can be achieved*
Metacognitive Skills	18	399	89,98	71,71	19,89	18-126
Help Seeking	3	399	13,45	64,04	3,25	3-21
Time Management	5	399	27,59	78,82	6,12	5-35
Persistence	5	399	25,61	73,17	6,31	5-35
Environmental Structuring	5	399	25,59	73,11	5,96	5-35
Total	36	399	182.24	72,31	49,09	36-252

Table 2 shows the general mean score percentage of the whole dimensions (72,31). The mean score percentages of the Metacognitive Skills and Help Seeking dimensions are below the general mean score. The highest mean score percentage belongs to time management dimension.

A GENDER-BASED COMPARISON OF SELF-DIRECTED ONLINE LEARNING SKILL SCORES OF UNDERGRADUATE STUDENTS

A gender-based distribution of self-directed online learning scores of undergraduate students is presented in Table 3.

Table 3. *A gender-based distribution of self-directed online learning scores of undergraduate students*

Dimensions	*Gender*	*N*	*Mean*	*Std. Error*
Metacognitive skills	Male	105	85.31	2,11
	Female	294	91.64	1,10
Help seeking	Male	105	13.30	,32
	Female	294	13.50	,18
Time management	Male	105	26.82	,60
	Female	294	27.86	,35
Persistence	Male	105	23.99	,66
	Female	294	26.19	,35
Environmental structuring	Male	105	24.24	,70
	Female	294	26.08	,31
General mean	Male	105	173.69	1,72
	Female	294	185.30	1,81

When the scores of the students are examined based on their gender, it is seen that the highest mean score belongs to female students at all dimensions. To understand whether the difference among the gender based scores is significant or not, an independent sample t-test was made and the findings are presented in Table 3.

Table 4. *Gender based differences of undergraduate students' skill scores self-directed online learning scores*

Dimensions	*Gender*	*N*	$\overline{X}$	*sd*	*t*	*p*
Metacognitive skills	Male	105	85.31	21.71508	-2,82	,005
	Female	294	91.64	18.95917		
Help seeking	Male	105	13.30	3.33433	-,54	,586
	Female	294	13.50	3.23667		
Time management	Male	105	26.82	6.19624	-1,49	,136
	Female	294	27.86	6.08636		
Persistence	Male	105	23.99	6.80568	-2,92	,004
	Female	294	26.19	6.03724		
Environmental structuring	Male	105	24.24	7.20147	-2,38	,018
	Female	294	26.08	5.38803		
General mean	Male	105	173.69	18.95917	*-3,16*	,016
	Female	294	185.30	21.71508		

Based on the comparison made according to the gender of the students, the differences in scores between female and male students in the general means and three dimensions namely, metacognitive skills, persistence and environmental structuring were significant in favour of female students.

A DEPARTMENT-BASED COMPARISON OF SELF-DIRECTED ONLINE LEARNING SKILL SCORES OF UNDERGRADUATE STUDENTS

A department based distribution of self-directed online learning skill scores of undergraduate students is presented in Table 5.

Table 5. *A department based distribution of self-directed online learning skill scores of undergraduate students*

	Departments	*N*	*Mean*	*Std. Error*
General	*Guidance & P. Counseling*	132	176.23	2.86
	Primary School	23	177.83	6.23
	Turkish Lang.	49	197.82	4.06
	Social Sciences	76	178.12	3.89
	Math	47	175.81	5.06
	English Lang.	31	186.68	5.38
	Pre-school	41	197.12	4.01
	Total	399	182.24	1.64
Metacognitive skills	*Guidance & P. Counseling*	132	86,71	1,82
	Primary School	23	88,56	3,54
	Turkish Lang.	49	99,04	2,35
	Social Sciences	76	86,67	2,41
	Math	47	88,00	2,79
	English Lang.	31	90,83	3,31
	Pre-school	41	98,21	2,56
	Total	399	89,98	,99
Help seeking	*Guidance & P. Counseling*	132	13,16	3,48
	Primary School	23	13,78	2,64
	Turkish Lang.	49	13,95	3,65
	Social Sciences	76	13,81	3,35
	Math	47	12,38	3,04
	English Lang.	31	14,06	2,73

	Pre-school	41	13,68	2,45
	Total	399	13,45	3,25
Persistence	*Guidance & P. Counseling*	132	27,09	6,09
	Primary School	23	27,47	5,31
	Turkish Lang.	49	28,79	6,42
	Social Sciences	76	27,61	6,42
	Math	47	26,36	6,70
	English Lang.	31	28,03	4,74
	Pre-school	41	28,87	5,87
	Total	399	27,59	6,12
Environmental structuring	*Guidance & P. Counseling*	132	24,56	6,08
	Primary School	23	24,69	6,75
	Turkish Lang.	49	28,20	5,18
	Social Sciences	76	24,78	6,65
	Math	47	23,93	7,35
	English Lang.	31	26,77	6,16
	Pre-school	41	28,97	3,83
	Total	399	25,61	6,31

When the scores of the students are examined based on the departments, it is seen that the highest mean score belongs to the Turkish language teaching department ($\bar{X}$ = 197.82) in general, to the Turkish language teaching department ($\bar{X}$ = 99.04) at metacognition skill dimension, to the English language teaching department ($\bar{X}$ = 14.06) at help seeking dimension, to the pre-school teaching department ($\bar{X}$ = 28,87) at persistence dimension, and lastly to the pre-school teaching department ($\bar{X}$ = 28,97) at environmental structuring dimension. It is also found out the lowest mean score belongs to the Math teaching department in general ($\bar{X}$ = 175.81), at help seeking dimension($\bar{X}$ = 12.38), at persistence dimension($\bar{X}$ = 23,36), and lastly at environmental structuring dimension ($\bar{X}$ = 23,93). At metacognition skill dimension, the lowest mean score belongs to the social sciences teaching department ($\bar{X}$ = 99.04). To understand whether the difference among the scores based on the departments is significant or not, One-Way Analysis of Variance (ANOVA) were implemented and the results are presented in Table 6.

Table 6. *One-Way Analyses of Variance (ANOVA) results for department-based distribution of the self-directed online learning scores of undergraduate students*

Dimensions	*Source of Variance*	*SS*	*df*	*MS*	*F*	*Sig.*
Metacognitive skills	Between-groups	9294,684	6	6	4,098	,001
	Within-groups	148170,194	392	392		
	Total	157464,877	398	398		
	Between-groups	103,451	6	6	1,638	,135
Help seeking	Within-groups	4125,441	392	392		
	Total	4228,892	398	398		
Time management	Between-groups	249,475	6	6	1,110	,356
	Within-groups	14680,751	392	392		
	Total	14930,226	398	398		
Persistence	Between-groups	1183,608	6	6	5,265	,000
	Within-groups	14687,179	392	392		
	Total	15870,787	398	398		
Environmental structuring	Between-groups	678,447	6	6	3,288	,004
	Within-groups	13481,393	392	392		
	Total	14159,840	398	398		
General mean	Between-groups	30034,694	6	6	4,974	,000
	Within-groups	394522,208	392	392		
	Total	424556,902	398	398		

Table 6 reveals that the students' scores differ significantly for general mean ((F (240) = 4,974, p <.05) and three dimensions namely, metacognitive skills (F (240) = 4,432, p <.05), persistence (F (240) = 4,432, p <.05) and environmental structuring (F (240) = 4,432, p <.05). To reveal the source of these significant differences, the multiple comparison (LSD) analysis were implemented and presented in Table 7.

Table 7. Results of Multiple Comparisons (LSD) of the scores related to departments

Dependent Variable	*(I) Departments*	*(J) Department*	*Mean of Differences (I-J)*	*Sig.*
Metacognitive skills	*Guidance & P. Counseling*	*Turkish Lang.*	-12,32112*	,003
		Pre-school	-11,49982*	,018
	Turkish Lang.	*Guidance & P. Counseling*	12,32112*	,003
		Social Sciences	12,36976*	,010
	Social Sciences	*Turkish Lang.*	-12,36976*	,010
	Pre-school	*Guidance & P. Counseling*	11,49982*	,018
		Social Sciences	11,54846*	,037
Persistence	*RPD*	*Turkish Lang.*	-3,64348*	,008
	Turkish Lang.	*Guidance & P. Counseling*	3,64348*	,008
		Social Sciences	3,41461*	,040
		Math	4,26791*	,012
	Social Sciences	*Turkish Lang.*	-3,41461*	,040
		Pre-school	-4,18614*	,008
	Math	*Turkish Lang.*	-4,26791*	,012
	Pre-school	*Guidance & P. Counseling*	4,41500*	,001
		Social Sciences	4,18614*	,008
		Math	5,03944*	,003
Environmental structuring	*Guidance & P. Counseling*	*Turkish Lang.*	-3,12693*	,026
	Primary School	*Turkish Lang.*	-4,51198*	,040
	Turkish Lang.	*Guidance & P. Counseling*	3,12693*	,026
		Primary School	4,51198*	,040
General mean	*Guidance & P. Counseling*	*Turkish Lang.*	-21,58905*	,000
		Pre-school	-20,89468*	,000
	Primary School	*Turkish Lang.*	-19,99024*	,013
		Pre-school	-19,29586*	,020
	Turkish Lang.	*Guidance & P. Counseling*	21,58905*	,000
		Primary School	19,99024*	,013
		Social Sciences	19,69791*	,001
		Math	22,00782*	,001
	Social Sciences	*Primary School*	-19,69791*	,001
		Pre-school	-19,00353*	,002
	Math	*Turkish Lang.*	-22,00782*	,001
		Pre-school	-21,31344*	,002
	Pre-school	*Guidance & P. Counseling*	20,89468*	,000
		Primary School	19,29586*	,020
		Social Sciences	19,00353*	,002
		Math	21,31344*	,002

* p<0.05

As seen in Table 7, in terms of *metacognitive skills* dimension, there is a significant difference between the students in Turkish language teaching department and ones in guidance & psychological counseling department in favour of the ones in Turkish language teaching department. There is also a significant difference between the students in pre-school teaching department and ones in guidance & psychological counseling department in favour of the ones in Turkish Language Teaching department. In terms of *persistence* dimension, a significant difference was found between the students in Turkish language teaching department and ones in guidance & psychological counseling department in favour of the ones in Turkish Language Teaching department. Again at the same dimension, there is a significant difference between the students in pre-school teaching department and ones in guidance & psychological counseling department, social sciences and math in favour of the ones in pre-school teaching department. In terms of *environmental structuring* dimension, a significant difference was reached between the students in Turkish language teaching department and ones in primary school teaching department in favour of the ones in Turkish language teaching department. When it comes to the general mean scores, a significant difference was revealed between the students in Turkish language teaching department and ones in guidance & psychological counseling, primary school teaching, social sciences and math departments in favour of the ones in Turkish language teaching department. Similarly, a significant difference was found between the students in pre-school teaching department and ones in guidance & psychological counseling, primary school teaching, social sciences and math departments in favour of the ones in Turkish language teaching department.

A GRADE-BASED COMPARISON OF SELF-DIRECTED ONLINE LEARNING SCORES OF UNDERGRADUATE STUDENTS

A grade level-based distribution of self-directed online learning scores of undergraduate students is presented in Table 8.

Table 8. *A grade level-based distribution of self-directed online learning scores of undergraduate students*

Dimensions	*Grade level*	*N*	$\overline{X}$	*sd*
	1	39	92,7949	16,66888
Metacognitive skills	2	163	93,4969	18,40000
	3	120	87,8083	20,29832
	4	77	84,5065	22,31097
	Total	399	89,9825	19,89071
	1	39	13,1795	3,06827
Help seeking	2	163	13,0368	3,22009
	3	120	13,8333	3,18962
	4	77	13,8831	3,47538
	Total	399	13,4536	3,25966
	1	39	27,8718	6,43665
Time management	2	163	28,0245	6,04913
	3	120	26,8583	6,39629
	4	77	27,6883	5,68993
	Total	399	27,5940	6,12480
	1	39	26,5385	6,99190
Persistence	2	163	26,3742	6,33342
	3	120	24,6333	6,15341
	4	77	25,0519	6,00635
	Total	399	25,6115	6,31477
	1	39	25,8205	5,79415
Environmental	2	163	26,3436	5,63540
structuring	3	120	25,3583	6,09973
	4	77	24,2857	6,36573
	Total	399	25,5990	5,96469
General mean	1	39	186.21	5.17
	2	163	187.28	2.47
	3	120	178.49	2.95
	4	77	175.42	3.92
	Total	399	182.24	1.64

When the scores of the students are examined based on the grade-level, it is seen that the highest mean score belongs to the second grade students ($\overline{X}$ = 93,4969) at metacognitive skills dimension. At help seeking dimension, it belongs to the fourth grade students ($\overline{X}$ = 13,8831). The highest mean score at time management dimension belongs to the second grade students ($\overline{X}$ = 28,0245). The highest mean score in persistence dimension belongs to the first grade students ($\overline{X}$ = 26,5385). At environmental structuring dimension, it belongs to the second grade students ($\overline{X}$ = 26,3436). In general mean, the highest mean score belongs to the second grade students ($\overline{X}$ = 187.28). To understand whether the difference among the grade-level based is significant or not, One-Way Analysis of Variance (ANOVA) were made and the results are presented in Table 9.

Table 9. *One-Way Analyses of Variance (ANOVA) results for grade level-based distribution of self-directed online learning scores of undergraduate students*

	Source of Varience	*SS*	*df*	*MS*	*F*	*Sig.*
Metacognitive skills	Between-groups	5197,931	3	1732,644	4,495	,004
	Within-groups	152266,946	395	385,486		
	Total	157464,877	398			
	Between-groups	62,755	3	20,918	1,983	,116
Help-seeking	Within-groups	4166,137	395	10,547		
	Total	4228,892	398			
Time management	Between-groups	98,854	3	32,951	,878	,453
	Within-groups	14831,372	395	37,548		
	Total	14930,226	398			
	Between-groups	267,264	3	89,088	2,255	,081
Persistence	Within-groups	15603,523	395	39,503		
	Total	15870,787	398			
Environmental structuring	Between-groups	232,029	3	77,343	2,193	,088
	Within-groups	13927,810	395	35,260		
	Total	14159,840	398			
General mean	Between-groups	10019,274	3	3339,758	3,182	,024
	Within-groups	414537,629	395	1049,462		
	Total	424556,902	398			

Table 9 reveals that the students' scores differ significantly for the metacognitive skills dimension and the general mean score. To reveal the source of significant differences, the multiple comparison (LSD) analysis are made and presented in Table 10.

Table 10. *Results of Multiple Comparisons (LSD) of the scores related to grade levels*

Dependent Variable	*(I) Grade Levels*	*(J) Grade Levels*	*Mean of Differences (I-J)*	*Sig.*
Metacognitive Skills	1	2	-,70206	,997
		3	4,98654	,514
		4	8,28838	,140
		1	,70206	,997
	2	3	5,68860	,077
		4	8,99044*	,006
		1	-4,98654	,514
	3	2	-5,68860	,077
		4	3,30184	,658
	4	1	-8,28838	,140
		2	-8,99044*	,006
		3	-3,30184	,658
General Mean	1	2	-1,07095	,853
		3	7,71346	,197

		4	10,78954	,091
	2	1	1,07095	,853
		3	8,78441*	,025
		4	11,86049*	,008
	3	1	-7,71346	,197
		2	-8,78441*	,025
		4	3,07608	,516
	4	1	-10,78954	,091
		2	-11,86049*	,008
		3	-3,07608	,516

* $p<0.05$

Table 10 shows there is a significant difference in favour of the second grade students to fourth grade students in terms of *metacognitive skills* dimension. When it comes to the general mean scores, there is a significant difference in favour of the second grade students to third and fourth students

FINDINGS FROM QUALITATIVE DATA ANALYSES

THE IMPLEMENTATIONS USED BY THE FACULTY MEMBERS TO SUPPORT THE SELF-DIRECTED ONLINE LEARNING SKILLS

The faculty members explained their own implementations about how to support their students' self-directed online learning skills. Their explanations were presented based on the pre-determined themes determined in accordance with the Self-Directed Online Learning Questionnaire.

SUPPORTING THE STUDENTS' METACOGNITIVE SKILLS

The faculty members explained that they asked questions during the courses (f:10), informed students about course aims/objectives (f:7), made relations between the subject and daily life (f:7), enabled them thinking on the subject (f:3), gave various examples (f:2), and applied teaching methods/techniques enabling critical thinking (f:2) to support the students' metacognitive skills.

The faculty members frequently indicated the importance of asking questions to increase students' self-directed online learning skills. For example; FM-7 uttered that "*I always ask questions about important subjects*" and FM-4 said "*I ask questions to make them think on it [the subject]*. The faculty members also indicated they are eager to inform students about the course aims/objectives by uttering "*At the beginning of the term, I certainly explain the course aims and every week, I make explanations about course objectives*" FM-3. Another frequently explained implementation is to make relations between the subject and daily life. FM-7 explained his implementation and its importance as follows:

> *"In general, I want students to relate these lessons and topics to their daily lives. I support them by giving current examples in relation to the content and topics of the courses I teach, and I believe the more the course content and topics are associated with current issues, the higher and more positive perspectives and interests the students have in the course." (FM-7)*

SUPPORTING THE STUDENTS' HELP SEEKING SKILLS

The faculty members explained that they guided and encouraged the students to seek help from the course instructors (f:7). They also indicated they shared sources, materials, online tools about course content (f:2) to support the students' help seeking skills.

The faculty members regarded themselves as the main source for direct communication when the students need help. FM-9 indicated that "*I express that they can ask verbally at points that are often not understood. I try to respond promptly to the questions asked. I often show examples in difficult* *situations and provide resources that they can use in assignments*." And FM-5 expressed "*My mobile phone and e-mail are open 24 hours, they know that they can reach me whenever they want*."

SUPPORTING THE STUDENTS' TIME MANAGEMENT AND ENVIRONMENTAL STRUCTURING SKILLS

When the faculty members were asked about how to support their students' time management and environmental structuring skills, they frequently explained its difficulty especially during online learning (f:8). For instance, FM-5 explained "*It is difficult to control their time management in distance education. I know that they have problems with this*." And FM-7 enlighted "*The distance education process offers the opportunity to do more work in a short time. However, I do not think that students use this opportunity positively enough*." On the other hand, a few faculty members explained their implications as reminding student via mobile, e-mails about the course schedule and assignments (f:3) and making motivational conversations to explain importance of time management and environmental structuring (f:2). FM-10 explained in detail how she encouraged students about time management and environmental structuring by uttering:

> *"First, I ask about their time management and study environment. I make an effort for them to notice their strengths or weaknesses. I offer ideas about better quality time management and study environments. Then, they can choose the appropriate ones or adapt themselves."* FM-10

SUPPORTING THE STUDENTS' PERSISTENCE SKILLS

When the faculty members were asked about how to support their students' persistence skills, some of the faculty members mentioned about the difficulty of getting persistence skills especially in online learning environment and a few views focusing on their regular study habits and how to improve students' persistence skills were explained (f:4). For example; FM-4 explained "*Since I find a research-based assessment more effective, I ask comprehensive research questions, so that they have to study regularly*." And FM-12 uttered "*During the course, the materials that should be ready weekly are presented. In addition, extra readings are presented during the week and included in the evaluation process."*

RELATING THE QUANTITATIVE AND QUALITATIVE FINDINGS

The mixed method research included more detailed quantitative findings and some general qualitative findings. To remind here, the undergraduate students' scores are as the follows in order: Time Management (%78,82), Persistence (%73,17), Environmental Structuring (%73,11), Metacognitive Skills (%71,71), and Help Seeking (%64,04). When the qualitative findings were examined, it can be said that the faculty members gave more specific interest to metacognitive, and help seeking skills while they less focused on time management-environmental structuring, and persistence skills. Based on the faculty members' implications, it can be said that they are aware of the importance of metacognitive-help seeking skills and their students' needs, so they tried to increase their students' those skills. On the other hand, it takes attention that the students have the highest scores on time management dimensions but the faculty members frequently explained they believed their students had problems about it. The same situation is valid for both persistence and environmental structuring skills.

DISCUSSION, CONCLUSION AND IMPLICATIONS

In the present study, self-directed online learning skills of undergraduate students were firstly examined and discussed comparatively based on gender, grade level, and department differences. Then, the implications used by the faculty members to support the skills were examined. The results obtained are discussed below.

The students' general mean score of the scale was above the scale average, which can be regarded as satisfactory. In other studies, carried out on undergraduate students like Cook et al.

(2017), Çelik (2012), Swart, (2018), Turan (2009), and Yen et al. (2005), the level of self-directed online learning skills was determined as moderate or high. On the other hand, Winne (2017) has reported that undergraduate students appear to be undereducated in terms of self-regulation.

When the results are examined based on the dimensions of the applied scale, it is concluded that the students had the highest mean score at time management dimension and the lowest one at help seeking dimension. Another study with similar sample has resulted in quite different results. In Özdemir & Önal's (2021) study, they concluded that undergraduate students' skills are the highest in the factor of environmental structuring whereas their skills are the lowest at the time management dimension. These contradictory results can be a sign of personal difference and different contexts where these studies were carried out.

Another result of this study about the gender-based differences in self-directed online learning skills of undergraduate students is that female students have higher scores in general, metacognitive skills, persistence, and environmental structuring dimensions. There are similar studies concluding that female students have a higher level of self-directed skills in general (Cadorin et al., 2017; Guglielmino et al., 1987; Hutto, 2009; Özdemir & Önal, 2021; Slater et al., 2017; Swart, 2018; Weis et al., 2013) and there are other similar studies such as Aydemir (2007), Caprara et al. (2008), Üredi and Üredi (2005), Saban (2008), and Zimmerman & Martinez Pons (1986) about the metacognitive skills. To Aşkın Tekkol and Demirel (2018), female students have higher cognitive and affective characteristics, which are critical for applying self-directed learning. On the other hand, there are some studies reaching out that gender difference does not cause any significant differences (Gömleksiz & Demiralp, 2012; Yukselturk & Bulut, 2009). Although in our study, we did not reach any significant difference in terms of time management, Demirtaş and Özer (2007) conclude that female undergraduate students have more effective time management skills and Karasakaloglu and Saracaloglu (2009) state that female students have higher academic self-design, which can be related to time management dimension of our study.

These aforementioned studies carried out at different times and contexts have reached conflicting results. But it is noteworthy that Gestsdottir et al. (2014) have reported their longitudinal study conducted in European context revealed contradictory results, namely female students have outperformed males in Iceland whereas the opposite was valid for French and German contexts. They reached out that the effect of cultural settings may cause such a contradiction. As also emphasized by Özdemir and Önal (2021), females are thought as being "more frequently expected to conform to social norms; thus, their experience and skill in regulating their emotions and behaviors tend to be superior compared to males" (Davis, 1995).

When it comes to the department-based differences, it is noteworthy that there are significant differences in metacognitive skills, persistence, and environmental structuring dimensions in favour of the students at Turkish Language Teaching department. Similarly, Aşkın Tekkol and Demirel (2018) determine students majoring departments related to Turkish-Social Studies (TS) have significantly higher skills scores than other students. Furthermore, the study by Gömleksiz and Demiralp (2012) concludes the students who enter university with a verbal score have higher self-directed learning skills than other score types. In other studies, including a similar sample, any significant differences in terms of department were not found (Özdemir & Önal, 2021).

In terms of the grade level-based differences, it is remarkable that there is a significant difference in favour of the sophomore students to senior students in terms of metacognitive skills dimension. In another study carried out on Turkish medical students, Turan (2009) reaches out freshmen students have higher levels of self-directed skills than sophomores and juniors. Similarly, Özdemir (2018) also concludes that freshmen students have higher levels of self-directed skills than senior students at nine different faculties in Turkish context. Conversely, Aşkın Tekkol and Demirel (2018) determine no positive correlation between grade level and self-directed skills level. Some other studies in the literature also corroborate our study result (Acar, 2014; Kiliç and Sökmen, 2012; Salas, 2010; Sarmasoglu and Görgülü, 2014), which all show that there is an inverse proportion between grade-level and self-directed learning levels. But it is expected that these skill levels increase as the grade level increases because skills associated with self-directed learning continue to develop as individuals progress through early adolescence into adulthood (Wilmshurst, 2013).

In the qualitative part of this mixed method study, the implications used by the faculty members to support the skills were examined. Based on the faculty members' views, it was found out that they gave more specific interest to metacognitive skills and help seeking while they focused less on time management-environmental structuring, and persistence skills. Based on the faculty members' implications, it can be said that they are aware of the importance of metacognitive skills help-seeking and their students' needs, so they made various implications to increase their students' those skills. On the other hand, the faculty members frequently explained they believed their students had problems with time management, environmental structuring and persistence. But it can be concluded that the faculty members' implications to support these skills of self-directed online learning are limited to some kind of encouragement.

It is widely accepted that faculty members play an important role in helping students develop and apply self-directed learning skills (Lunyk-Child et al., 2001). Especially in online learning environments, recent research studies proved that the skills of learners, especially the low academic achievers, can be improved by using self-directed instructional methods (Young, 1996). Additionally, faculty members must carefully balance the type and amount of support provided to students as they learn to take responsibility for their own learning with the goal of being independent learners (Morris, 2019).

Learners can be described as self-directed in relation to the degree that they are metacognitively, motivationally and behaviorally active participants in their own learning process (Zimmerman, 1990). For that reason, the faculty members in our study should also give specific interest to their students' time management-environmental structuring, and persistence skills. So that the students can be active motivationally and behaviorally active in their own learning process, too. In two different studies conducted nearly three decades before at Canadian community colleges and in another study, it was found that a few faculty members included in these studies were reached out as supportive of self-directed learning (Wilcox, 1996).

Self-directed learning is a process of learning in which learners function autonomously, taking responsibility for planning, initiating, and evaluating their own learning efforts. When the learning efforts are changed into online, it takes much more interest and importance because self-directed learning seems to promise a reasonable solution to the immediate and very real problem of providing high quality educational experiences with less demand on public resources in distance education process (Wilcox, 1996).

As Calıkoğlu and Gumus (2020) emphasized, in distance education process, there are some factors which prevent effective learning experiences. Besides the changing and diversifying expectations from higher education, as an important key to solving such problems experienced distance education process, self-directed learning skills should be supported at higher education. It should be noted here that to make such support systematic and ongoing, we should use curriculum at higher education institutions. Being aware of that fact, self-directed learning has been introduced into curricula and mentioned frequently in the mission's statements/program objectives in many higher educational institutions. But the introduction of SDL into undergraduate curricula and/or involvement in the objectives have not always been successful (Levett-Jones, 2005) in efforts to improve educational quality in higher education. The main responsibility of increasing students' SDL skills belong to the students themselves and the responsibility of directing them is to the faculty members.

Based on the results of the study, the following suggestions are presented;

1. Contemporary educational approaches and rapid increase of distance higher education make it more urgent to have self-directed skills, so there should be experimental studies to determine/apply teaching/learning methods to support students' SDL skills.

2. SDL includes different skills sets. In the current study, it is determined that the students should be supported in terms of metacognitive and help-seeking skills especially. So further studies can be conducted on analyzing and supporting such skills.

3. In this study, the faculty members explained their own ways of supporting SDL skills and it is clear that they have some limited implementations, especially in terms of time management-environmental structuring, and persistence skills. So further studies may be applied to increase the awareness and practical information of faculty members.

AUTHOR CONTRIBUTION

The authors both equally contributed to the conception, design and implementation of the research, to the analysis of the results and to the writing of the manuscript apart from data collection process in which they carried out separate roles. The first author collected the quantitative data while the second author took the lead in interviewing process, so she had the main responsibility in collecting qualitative data. They both gave final approval of the version to be published.

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Teachers' Epistemological Beliefs and Lifelong Learning Tendencies: A Correlational Study

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Abstract

The aim of this research is to examine the correlation between teachers' epistemological beliefs and lifelong learning tendencies. The research was carried out according to the quantitative method and was designed in the correlational survey model. The sample of the study consisted of 284 teachers teaching in a district of Bursa in the spring term of the 2020-2021 academic year and selected according to the simple random sampling method, one of the probability sampling types. Data were obtained with the "Epistemological Belief Scale" and the "Lifelong Learning Tendency Scale". The data were analyzed with the SPSS v.22 software package. During the analysis process, the descriptive statistical values of the data were examined; Pearson correlation and multiple linear regression analyses were performed. It has been determined that the highest mean score of the teachers in the sub-dimensions of epistemological beliefs is in Belief that Learning Depends on Effort, and that their highest mean score in the sub-dimensions of lifelong learning tendencies is in Openness to Improvement. A moderate and positive significant correlation has been found between "Belief that Learning Depends on Effort", one of the sub-dimensions of epistemological beliefs, and both the "Willingness to Learn" and "Openness to Improvement" sub-dimensions of lifelong learning tendencies, at the highest level. Thus, it is suggested that teachers should be supported to improve their epistemological beliefs and, accordingly, to improve themselves more through lifelong learning.

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INTRODUCTION

Philosophy is concerned with trying to answer the reason for the existence of man in the universe he is in, with various researches. Therefore, philosophy can be characterized as a process of seeking knowledge through various methods. However, it is not enough just to wonder, think, ask questions and seek answers to them. In addition to these processes, it is also important to present systematic explanations for these issues. As Cevizci (2015) stated, philosophy expresses the systematic and questioning way of thinking about the nature of existence, the nature of knowledge and the way of sustaining life. Philosophy consists of three main components or branches, namely metaphysics, epistemology and axiology (Yazıcı, 2016). It can be said that epistemology stands out among these three branches of philosophy. According to many philosophers, epistemology is a source for the other branches of philosophy (Cevizci, 2015). Looking at the root word of epistemology, it is understood that epistemology is formed by the combination of the Greek words "episteme" and “logos” (Baç, 2011, p. 21). In Greek, the word “episteme” means “knowledge”, while the word “logos” means “examination” or “science”. In this context, it is possible to define epistemology as “examination of knowledge” (Özemre, 2011, p. 221). Moser (2018, p.21) defines epistemology as “the study of the nature of knowledge and justification”. In summary, it can be said that epistemology refers to inquiries about what knowledge is and which sources it is fed from (Arslan, 2017). On the other hand, belief expresses the acceptance by individuals about the events they have experienced throughout their lives, other individuals and the phenomena they encounter (Nespor, 1987). In this direction, as Hofer (2001) also states, epistemological belief refers to individuals’ beliefs about what knowledge means, how it is structured, and its source.

When the developmental stages of epistemological beliefs are examined, it is understood that they first emerged in a structure consisting of one dimension. In other words, epistemological belief studies initially focused on the nature and quality of knowledge. Afterwards, epistemological beliefs began to be examined and designed in a multidimensional structure (Hofer, 2000; Hofer & Pintrich, 1997; Schommer-Aikins, 2004). One of the multidimensional epistemological beliefs models belongs to Schommer (1990). In this model, not only the nature of knowledge is emphasized, but also the nature of knowing, that is, learning. According to the model, individuals who believe that knowledge is unchangeable and that learning depends on ability have naïve epistemological beliefs, while individuals who believe that knowledge is relative and that learning depends on the learner’s effort have sophisticated epistemological beliefs (Schommer, 1993). According to Gutek (2006), epistemology is important for teachers in terms of preparing lesson plans and implementing the curriculum. In this respect, it can be said that teachers’ epistemological perspectives are important for the learning-teaching process. As a matter of fact, epistemological beliefs are related to many factors such as teaching styles (Soleimani, 2020), teaching understandings (Tezci, Erdener & Atıcı, 2016), learning approaches (Phan, 2008), learning attitudes (Altay, 2021), educational philosophy trends (Aytaç & Uyangör, 2020), mathematical thinking skills (Rott, 2021) and academic success (Lonka, Ketonen & Vermunt, 2021) in the learning-teaching process. Furthermore, the epistemological perspectives of individuals stand out as a variable that can affect the improvement of lifelong learning skills as well as the learning-teaching processes at school (Kanadlı & Akay, 2019).

Modern social structures have brought lifelong learning to the agenda, as well as concepts such as “education for all”, “adult education”, and “continuous education” related to the understanding of continuing education (Boyadjieva & Petkova, 2005). Resulting from the globalizing economy and various social changes, lifelong learning (Czeglédi & Juhász, 2013) emerged as a new trend and broad policy in the late 1960s and early 1970s (Field, 2001). Lifelong learning has also become important in terms of both promoting learning and adapting to the changing market demands of countries in the life cycle (Gudănescu & Cristea, 2009). The emergence of the concept of lifelong education, on the other hand, points to the improvements in social life in societies that have experienced modernization recently and requires that the changes experienced in this process become permanent (Boyadjieva & Petkova, 2005).

The purpose of lifelong learning can be expressed as people's continuous acquisition of knowledge and skills in their daily lives and making it a culture. Therefore, although learning is not limited to educational institutions, it needs to be protected and renewed (Gudănescu & Cristea, 2009). Lifelong learning that occurs with lifelong education can be realized through many different activities such as individuals participating in workshops, being a member of professional organizations, participating in various training courses, and learning through informal and non-formal education (Fitzpatrick & Smith, 2007; Frackowiak, 2017; Tamme, 2018). For example, for students, learning and these self-education activities do not end with graduation; on the contrary, thanks to lifelong learning, they come across various career paths and achieve various gains for an active labor market (Czeglédi & Juhász, 2013). It is considered important for teachers to follow a certain sequence and cycle in the lifelong learning process, which is an important element for their continuous professional improvement (Wolde, 2021). As a matter of fact, in the teacher education improvement program prepared in Finland by Lavonen, Mahlamäki-Kultanen, Vahtivuori-Hänninen and Mikkola (2020), three strategic competency goals were determined for teachers' pre-service, in-service and continuous life-long professional learning. These are listed as a broad and solid knowledge base, competences for generating new ideas and educational innovations, and competences for teachers to improve their own expertise alongside their school.

Teachers need to use various active learning methods such as personal reading, action research and reflection, which empower and liberate them in their professional improvement process (Wolde, 2021). For example, Lizačić and Bačlija-Sušić (2020) state that preschool teachers contribute to both their professional improvement and lifelong learning by actively participating in the musical and creative activities of their students in the lessons. However, in this process, objective evaluation of teachers' motivation and quality is considered as an important need for lifelong learning (Panev & Barakoska, 2015). Furthermore, it is important for senior teachers to plan classroom observations in schools correctly in order to transform schools into a learning organization structure, to help teachers improve their knowledge and skills by providing various guidance services through these observations, and to support their professional improvement (Krajnc & Valenčič-Zuljan, 2014).

It is possible to say that beliefs are the basis of the decisions that individuals take throughout their lives and the practices they carry out in this direction (Nespor, 1987; Pajares, 1992). Epistemological beliefs, which constitute the acceptance by individuals about the nature of knowledge and knowing (Schommer, 1990), have a central role in influencing their perspectives on the concepts of learning and teaching (Hofer & Pintrich, 1997). In this respect, the epistemological beliefs of individuals shape many variables of the learning-teaching process (Green & Hood, 2013). Individuals with sophisticated epistemological beliefs have critical, creative and scientific thinking skills (Demir & Akınoğlu, 2010). In this respect, it is possible to say that individuals who believe that knowledge is relative, that is, that it can change over time, can be open to change and willing to learn. On the other hand, it can be said that individuals who believe that knowledge is certain and unchangeable are more resistant to change and to learning new knowledge. In summary, the theoretical framework provides clues that the epistemological beliefs of individuals can affect their perspectives on lifelong learning.

When the relevant literature is examined, the limited number of studies examining the correlation between epistemological beliefs and lifelong learning (Bath & Smith, 2009) reveals that there is a need to examine the correlation between these two variables with further studies. In this respect, it is thought that this study will contribute to the related literature. In addition, examining the correlation between teachers' epistemological beliefs and lifelong learning tendencies can provide important information to policy makers. The COVID-19 pandemic process has required the continuation of the learning-teaching process with distance education tools (Munoz-Najar, Gilberto Sanzana, Hasan, Cobo Romani, Azevedo & Akmal; Reimers, Schleicher, Saavedra & Tuominen, 2020). In this process, it has been understood how important it is for teachers to master the use of technological tools. In this context, it is possible to say that teachers who improve themselves integrate into the distance education process more quickly. As a matter of fact, although there is no other research on this subject in the literature, Aytaç's (2021) study found that teachers with a high perception of lifelong learning have higher motivation to acquire and use digital technologies. In this respect, examining the correlation between teachers' epistemological perspectives and their tendencies towards lifelong learning can be a guide for policy makers who design in-service training programs. In conclusion, the aim of this study is to examine the correlation between teachers' epistemological beliefs and their lifelong learning tendencies. In this context, answers to the following questions have been sought:

1. What is the level of teachers' epistemological beliefs and lifelong learning tendencies?
2. Is there a significant correlation between teachers' epistemological beliefs and lifelong learning tendencies?
3. Do teachers' epistemological beliefs significantly predict their lifelong learning tendencies?

METHOD

RESEARCH MODEL

In this study, the correlational survey model has been preferred because the aim has been to examine the relationship between teachers' epistemological beliefs and lifelong learning tendencies. "A correlational study seeks to ascertain relationships between two or more variables. Simply put, it examines whether an increase or decrease in one variable corresponds to an increase or decrease in another variable" (Tan, 2014, p. 269). In this context, the present study investigates whether the increase or decrease in teachers' epistemological beliefs corresponds to an increase or decrease in their lifelong learning tendencies.

SAMPLE

The sample of the research consists of 284 teachers teaching in a district of the Bursa province of Turkey in the spring semester of the 2020-2021 academic year. There are a total of 780 teachers working in the district where this sample group was selected. In the process of determining the research sample, .95 as the confidence level and .05 as the sampling error were taken into consideration. Based on these values, 284 teachers in the sample group are sufficient for the sample size to be drawn from the population (Yazıcıoğlu & Erdoğan, 2004). The simple random sampling method, which is one of the probability sampling types, has been preferred in the selection of the sample. This type of sampling is preferred when every individual in the current population or samples of a certain size have an equal chance of being included in the sample group to be selected (West, 2016). In this context, the demographic characteristics of the teachers participating in the research are as follows: 195 of the teachers are female and 89 are male. The professional seniority of 61 of the teachers is between 0-5 years, while 72 of them have between 6-10 years, 43 of them have between 11-15 years, 43 of them have between 16-20 years and 65 of them have 21 or more years of professional seniority. In addition, 105 of the teachers work in primary school, 113 teachers work in secondary schools and 66 teachers work in high schools.

DATA COLLECTION TOOLS

Epistemological Belief Scale (EBS): The Epistemological Belief Scale used in the study was developed by Schommer (1990) and adapted into Turkish by Deryakulu and Büyüköztürk (2002). As a result of the validity analyses, a scale consisting of three sub-dimensions and 35 items was revealed. The sub-dimension of the scale called *Belief that Learning Depends on Effort* consists of 18 items, the sub-dimension called *Belief that Learning Depends on Ability* consists of 8 items, and the sub-dimension called *Belief that There is One Truth* consists of 9 items. The total variance explained by the scale was determined as 28.09%. As a result of the reliability analysis, Cronbach's alpha values were determined as .83, .62, and .59 in order of sub-dimensions. Afterwards, the validity and reliability study of this scale was carried out by Aydın, Selçuk, Çakmak, and İlğan (2017). As a result of the analyses carried out, it was determined that the 35-item structure of the scale was also suitable. On the other hand, as a result of the analysis, it was determined that the scale turned into a more reliable and valid structure after some items were removed from the scale. In this respect, it was emphasized that the 23- and 29-item forms of the scale could also be used. In this context, since the number of items is low, it was decided to use the shortened form of the scale with 23 items in order to facilitate implementation. Evaluation of the scale is carried out in terms of the sub-dimensions. *The Belief that Learning Depends on Effort* sub-dimension is reverse coded, while the other two dimensions are positively coded. However, in this study, as Eren (2006) did in his study, a different path has been followed and the sub-dimension of *Belief that Learning Depends on Effort* has also been positively coded. In the interpretation of the dimensions of the scale, a method suitable for this process has been followed. Therefore, high scores from sub-dimensions indicate high belief in that sub-dimension, and low scores indicate low belief in that sub-dimension (İlhan, Demir & Arslan, 2013). In addition, as a result of the reliability analyses carried out within the scope of this research, Cronbach alpha values have been determined as .81 for the "Belief that Learning Depends on Effort" sub-dimension, .85 for the "Belief that Learning Depends on Ability" sub-dimension, and .77 for the "Belief that There is One Truth" sub-dimension. The Cronbach's alpha values show that the scale is within acceptable ranges (Özdamar, 2016).

Lifelong Learning Trends Scale (LLLTS): The Lifelong Learning Trends Scale used in the research was developed by Gür-Erdoğan and Arslan (2015). The sample of the study consisted of 1644 students studying at the faculty of education of a university. The first part of the study was the literature study. As a result, the item pool was formed in line with the opinion of 7 experts, and 49 items constituted the draft scale. As a result of the analysis, a scale consisting of two sub-dimensions and 17 items emerged. The sub-dimension of the scale called *Willingness to Learn* consists of 11 items, and the sub-dimension called *Openness to Improvement* consists of 6 items. As a result of the criterion validity analysis, a high level of positive correlation was found. The total variance explained by the scale was determined as 43.44%. As a result of the reliability analysis, Cronbach's alpha values were determined as .86 for the whole scale and .82 for both dimensions. The test-retest reliability of the scale was determined as .76. In addition, as a result of the reliability analyses carried out within the scope of this research, the Cronbach alpha values have been determined as .86 for the "Willingness to Learn" sub-dimension, .82 for the "Openness to Improvement" sub-dimension, and .89 for the whole scale. The Cronbach's alpha values show that the scale is within acceptable ranges (Özdamar, 2016).

DATA COLLECTION AND ANALYSIS

The data of the study were collected at the beginning of March 2021. First of all, the necessary permission was obtained from the researchers who developed the scales to be used in the research. After that, the data began to be collected. After the data were collected, they were coded into the SPSS program in the computer environment. As such, 292 data were coded into the relevant statistical program. As a result of the extreme value analysis, three items of data were excluded from the scope of the research. In the next step, the normality assumptions of the data were examined. In this context, the kurtosis and skewness values of the data obtained from the sub-dimensions of the scales used in the research were examined. As a result of the examination, it was determined that the kurtosis and skewness values of the data were between -1 and +1. Moreover, it was determined that the descriptive statistics values were close to each other. Accordingly, it was assumed that the data were normally distributed. In this context, it was decided to use parametric tests in the analysis of the data. Therefore, descriptive statistics, Pearson correlation analysis and multiple linear regression analysis were used in the analysis of the data (Büyüköztürk, 2007). Mahalanobis distances were checked to examine the presence of multivariate outliers among the data. Accordingly, five items of data were excluded from the scope of the research. In this context, it can be said that the data comply with the multivariate variability assumptions. As a result, the analyses continued with 284 data. In the Pearson correlation analysis, values below .30 were accepted as “low”, values between .30-.69 as “moderate”, and values above .70 as “high” correlation (Çokluk, Şekercioğlu & Büyüköztürk, 2014). In the evaluation of the arithmetic means, 1.00-1.79 was accepted as “very low”, between 1.80-2.59 as “low”, between 2.60-3.39 as “medium”, between 3.40-4.19 as “high” and between 4.20-5.00 as “very high”.

FINDINGS

In this section, the findings obtained from the analysis of the data related to the research questions are given under sub-headings, respectively.

DESCRIPTIVE STATISTICS RELATED TO VARIABLES

Under this sub-heading, descriptive statistics related to the teachers’ epistemological beliefs and lifelong learning tendencies are included. Findings in this context are presented in Table 1 below.

Table 1. *Descriptive Statistics Related to Variables*

Scales	*Sub-Dimensions*	*N*	*Mean (M)*	*Mode*	*Standart Deviation (SD)*	*Kurtosis*	*Skewness*
Epistemological Belief Scale	(1) Belief that Learning Depends on Effort	284	4.38	4.90	0.45	-.62	-.19
	(2) Belief that Learning Depends on Ability	284	2.02	2.00	0.70	.67	.33
	(3) Belief that There is One Truth	284	2.39	2.00	0.89	.33	-.64
Lifelong Learning Trends Scale	(1) Willingness to Learn	284	4.48	5.00	0.42	-.85	.27
	(2) Openness to Improvement	284	4.51	5.00	0.49	-.82	.11

In Table 1 above, descriptive statistics related to the variables are given. Accordingly, within the scope of the Epistemological Belief Scale, the highest mean score belongs to the Belief that Learning Depends on Effort sub-dimension (M= 4.38, SD= 0.45). This is followed by the Belief that There is One Truth sub-dimension (M= 2.39, SD= 0.89) and the Belief that Learning Depends on Ability sub-dimension (M= 2.02, SD=0.70). Within the scope of the Lifelong Learning Trends Scale, the highest mean score belongs to the Openness to Improvement sub-dimension (M= 4.51 SD= 0.49). This is followed by the Willingness to Learn sub-dimension (M= 4.48, SD= 0.42). In addition, it is seen that the kurtosis and skewness values are between -1 and +1. According to Morgan, Leech, Gloeckner and Barrett (2004), data within these value ranges show normal distribution. In addition, since it is seen that descriptive statistical values such as mean, median and mode do not diverge too far from each other, it can be said that the data show a normal distribution (Büyüköztürk, 2010).

CORRELATIONS BETWEEN VARIABLES

Under this subheading, Pearson correlation analysis findings regarding the correlation between teachers' epistemological beliefs and lifelong learning tendencies are included. Values in this context are presented in Table 2 below.

Table 2. *Pearson Correlation Analysis Findings for the Correlations between Variables*

Sub-Dimensions	*Belief that Learning Depends on Effort*	*Belief that Learning Depends on Ability*	*Belief that There is One Truth*
Willingness to Learn	.375**	-.332**	-.020*
Openness to Improvement	.358**	-.224**	-.095*

*p>.05, **p<.01

The Pearson correlation analysis findings showing the correlations between the variables are given in Table 2 above. According to the table, there is a positive, moderate and significant correlation (r= .375, p<.01) between the Willingness to Learn and the Belief that Learning Depends on Effort sub-dimensions but there is a negative, moderate and significant correlation (r= .-.332, p<.01) between the Willingness to Learn and the Belief that Learning Depends on Ability sub-dimensions. On the other hand, there is no significant correlation (r= -.020, p>.05) between the Willingness to Learn and Belief that There is One Truth sub-dimensions. There is a positive, moderate and significant correlation (r= .358, p<.01) between the Openness to Improvement and the Belief that Learning Depends on Effort sub-dimensions but there is a negative, low and significant correlation (r= .-.224, p<.01) between the Openness to Improvement and the Belief that Learning Depends on Ability sub-dimensions. On the other hand, there is no significant correlation (r= -.095, p>.05) between the Openness to Improvement and the Belief that There is One Truth sub-dimensions.

PREDICTIVE RELATIONSHIPS BETWEEN VARIABLES

Under this subheading, the predictive levels of teachers' epistemological beliefs on their lifelong learning tendencies have been examined. The findings of the multiple linear regression analysis regarding the predictive levels of Epistemological Beliefs on the Willingness to Learn sub-dimension are presented in Table 3 below.

Table 3. *Findings Regarding the Prediction of the Willingness to Learn Dimension*

Variable	*B*	*Standart Error*	*β*	*t*	*p*	*Zero-order*	*Partial*
Constant	3.420	.245		13.949	.000		
Belief that Learning Depends on Effort	.295	.050	.317	5.883	.000	.375	.332
Belief that Learning Depends on Ability	-.197	.036	-.327	-5.494	.000	-.332	-.312
Belief that There is One Truth	.068	.028	.143	2.457	.015	-.020	.145
R= .474	R^2= .224	$F_{(3-280)}$= 27.010	p= .000				

In Table 3 above, the findings of the multiple linear regression analysis regarding to what extent Epistemological Beliefs predict the Willingness to Learn sub-dimension are given. As can be seen from the table, all dimensions of Epistemological Beliefs together have a moderate and significant correlation with the sub-dimension of Willingness to Learn (R= .474, R^2= .224). Epistemological Beliefs explain 22.4% of the variance regarding the Willingness to Learn sub-dimension. When the standardized regression coefficients are examined, the relative importance of the predictive variables on the Willingness to Learn dimension is respectively: Belief that Learning Depends on Ability (β= -.327, p<.01), Belief that Learning Depends on Effort (β= .317, p<.01) and Belief that There is One Truth (β= .143, p<.05). The regression equation is as follows:

Willingness to Learn= (0.295 x Belief that Learning Depends on Effort) + (-0.197 x Belief that Learning Depends on Ability) + (0.068 x Belief that There is One Truth)

The findings of the multiple linear regression analysis regarding the predictive levels of Epistemological Beliefs on the Openness to Improvement sub-dimension are presented in Table 4 below.

Table 4. *Findings Regarding the Prediction of the Openness to Improvement Dimension*

Variable	*B*	*Standart Error*	*β*	*t*	*p*	*Zero-order*	*Partial*
Constant	3.195	.298		10.722	.000		
Belief that Learning Depends on Effort	.352	,061	.325	5.772	.000	.358	.326
Belief that Learning Depends on Ability	-.107	.044	-.153	-2.452	.015	-.224	-.145
Belief that There is One Truth	-.003	.034	-.006	-.099	.921	-.095	-.006
R= .389	R^2= .151	$F_{(3-280)}$= 16.607	p= .000				

In Table 4 above, the findings of the multiple linear regression analysis regarding to what extent Epistemological Beliefs predict the Openness to Improvement sub-dimension are given. As can be seen from the table, all dimensions of Epistemological Beliefs together have a moderate and significant correlation with the sub-dimension of Openness to Improvement (R= .389, R^2= .151). Epistemological beliefs explain 15.1% of the variance regarding the Openness to Improvement sub-dimension. When the standardized regression coefficients are examined, the relative importance of the predictive variables on the Openness to Improvement dimension is respectively: Belief that Learning Depends on Effort (β= .325, p<.01), Belief that Learning Depends on Ability (β= -.153, p<.01) and Belief that There is One Truth (β= -.006, p>.05). The regression equation is as follows:

Openness to Improvement= (0.352 x Belief that Learning Depends on Effort) + (-0.107 x Belief that Learning Depends on Ability) + (-0.003 x Belief that There is One Truth)

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

The aim of this study has been to examine the correlation between teachers' epistemological beliefs and lifelong learning tendencies. In this section, the findings are discussed according to the order of the research questions and suggestions are given in line with the conclusions obtained. In this context, firstly, the conclusions and discussions on the descriptive statistical findings related to the variables are included. Secondly, the conclusions and discussions about the correlations between the variables are included. Thirdly, the conclusions and discussions on the predictive status between the variables are included.

Firstly, within the scope of the first question of the research, the level of teachers' epistemological beliefs have been examined. Accordingly, it has been determined that the highest mean score among the epistemological belief sub-dimensions belonged to the "Belief that Learning Depends on Effort", followed by the "Belief that There is One Truth", and then the "Belief that Learning Depends on Ability" sub-dimensions. In this context, it is possible to say that teachers' beliefs that learning depends on effort are at a *very high* level, while their beliefs that knowledge is unchangeable and learning depends on ability are at a *low* level. In other words, teachers have sophisticated epistemological perspectives about the idea that learning depends on effort. From this point of view, it can be said that teachers believe that knowledge can change over time, that it has a relative structure, and that acquiring knowledge depends on the effort of the learner rather than innate abilities. The reason for this can be explained by paradigm changes. The concept of genetic epistemology put forward by Piaget (1984) and the theses of Kuhn (2018) on the structure of scientific changes have brought about paradigm changes about the nature of knowledge. In this direction, the epistemological view that knowledge is relative and can change according to time and place has come to the fore. It was inevitable that this epistemological change would also affect the epistemological perspectives of teachers, who are at the center of the learning-teaching process and are responsible for fostering knowledge in the learner. Similar results have been obtained with studies in the literature (Baydar, 2020; Chai, Khine & Teo, 2006; Chan, 2004, 2008; Chan & Elliott, 2004; Gürkan & Kahraman, 2020; Lee, Zhang, Song & Huang, 2013; Whitaker, 2020; Yalçın & Yıldız, 2020). However, in a limited number of studies (Chan & Elliott, 2000; Saeed, Reza & Momene, 2014), it has been found that participants have naïve epistemological beliefs. It can be said that this difference is due to cultural factors.

Secondly, within the scope of the first question of the research, the level of teachers' lifelong learning tendencies have been examined. Accordingly, it has been determined that the "Openness to Improvement" sub-dimension has the highest mean score among the sub-dimensions of lifelong learning tendencies. In addition, both the "Openness to Improvement" sub-dimension and the "Willingness to Learn" sub-dimension have *very high* mean scores. In this context, it can be said that teachers are willing to improve themselves professionally and learn new knowledge. The reason for this can be explained by the conditions of the current era. The rapid improvement of technology has affected many areas of human life. One of these areas is undoubtedly education. In this direction, the use of technological tools in education has been accelerated. It can be said that the importance of the use of technological tools in education has further increased, especially during the COVID-19 pandemic process. In this context, teachers may have attended various online courses or seminars on the use of technological tools in education and acquired up-to-date knowledge. In other words, the conditions of the current age may have encouraged teachers to improve themselves. This situation may have affected teachers' lifelong learning tendencies in a positive way. Similar results have been obtained in studies conducted in the related literature (Akyol, 2014; Ayaz, 2016; Bath & Smith, 2009; Gökyer, 2019; İzci & Özden, 2020; Kozikoğlu & Altınova, 2018; Tanatar & Alpaydın, 2019; Yılmaz, 2016). However, it has been determined that teachers' lifelong learning tendencies are not at a high level in a limited number of studies (Ekşioğlu, Tarhan & Çetin-Gündüz, 2017; Gökyer & Karakaya-Cirit, 2018). As a result, when the research studies are evaluated as a whole, it is possible to say that the results of the current research are compatible with the literature and that the lifelong learning tendencies of teachers are at a high level.

Within the scope of the second question of the research, analyses have been carried out on the correlation between teachers' epistemological beliefs and lifelong learning tendencies. According to the results of the Pearson correlation analysis, a moderately positive and significant correlation has been found between the "Willingness to Learn" sub-dimension of lifelong learning tendencies and the "Belief that Learning Depends on Effort" sub-dimension of epistemological beliefs. However, a moderately negative and significant correlation has been found between the same sub-dimension of lifelong learning tendencies and the “Belief that Learning Depends on Ability” sub-dimension of epistemological beliefs. On the other hand, no significant correlation has been found between the “Willingness to Learn” sub-dimension of lifelong learning tendencies and the “Belief that There is One Truth” sub-dimension of epistemological beliefs. After the analyses, a moderately positive and significant correlation has been found between the “Openness to Improvement” sub-dimension of lifelong learning tendencies and the “Belief that Learning Depends on Effort” sub-dimension of epistemological beliefs. However, a low-level, negative and significant correlation has been found between the same sub-dimension of lifelong learning tendencies and the “Belief that Learning Depends on Ability” sub-dimension of epistemological beliefs. On the other hand, no significant correlation has been found between the “Openness to Improvement” sub-dimension of lifelong learning tendencies and the “Belief that There is One Truth” sub-dimension of epistemological beliefs. In this context, it is possible to say that as teachers’ beliefs about the relativeness of knowledge increase, they become more willing to learn and more open to improvement. In addition, as teachers’ belief that learning depends on innate abilities increases, their willingness to learn and their tendency to be open to improvement decrease. It can be said that these results coincide with the research results of Bath and Smith (2009).

Within the scope of the third question of the research, multiple linear regression analyses have been applied. In this context, it has been determined that epistemological beliefs significantly predict “Willingness to Learn”, one of the sub-dimensions of lifelong learning tendencies. In addition, the “Belief that Learning Depends on Effort” and the “Belief that There is One Truth” sub-dimensions of epistemological beliefs positively predict the “Willingness to Learn” sub-dimension of lifelong learning tendencies. On the other hand, the “Belief that Learning Depends on Ability” sub-dimension of epistemological beliefs predicts the “Willingness to Learn” sub-dimension of lifelong learning negatively. Secondly, it has been determined that epistemological beliefs significantly predict “Openness to Improvement”, one of the sub-dimensions of lifelong learning tendencies. In addition, the “Belief that Learning Depends on Effort” sub-dimension of epistemological beliefs positively predicts the “Openness to Improvement” sub-dimension of lifelong learning tendencies, whereas the “Belief that Learning Depends on Ability” sub-dimension of epistemological beliefs negatively predicts the “Openness to Improvement” sub-dimension of lifelong learning tendencies. On the other hand, the “Belief that There is One Truth” sub-dimension of epistemological beliefs does not significantly predict the “Openness to Improvement” sub-dimension of lifelong learning tendencies. In this context, it can be said that teachers who believe that knowledge is relative and that learning depends on effort are willing to learn new knowledge and are open to improvement. On the other hand, it can be said that teachers who believe that learning depends on innate abilities are not willing to learn new knowledge and are not open to improvement. These results can be explained by the theoretical basis of the concept of epistemological belief and the results of epistemological belief research. According to Schommer (1990), individuals who believe that knowledge is relative have sophisticated epistemological beliefs. Conversely, individuals who believe that learning depends on innate abilities and that knowledge is unchangeable have naïve epistemological beliefs. According to Schommer-Aikins and Hutter’s (2002) research results, individuals with sophisticated epistemological beliefs care about the opinions of individuals who have different perspectives from their own and change their thoughts when necessary. Bacanlı-Kurt (2010) found in her research that individuals who believe that learning does not depend on effort are resistant to change. In other words, individuals with naïve epistemological beliefs do not have a structure that is open to learning new knowledge and improving themselves. According to Demir and Akınoğlu (2010), individuals with sophisticated epistemological beliefs have critical, creative and scientific thinking skills. In other words, individuals with sophisticated epistemological beliefs tend to learn and adopt new knowledge. In this respect, it is possible to say that individuals who believe that knowledge is relative, and that it can change over time, can be open to change and willing to learn. On the other hand, it can be said that individuals who believe that knowledge is certain and unchangeable are more resistant to change and to learning new knowledge. These results are in line with the research results of Bath and Smith (2009). However, the fact that the "Belief that There is One Truth" sub-dimension of epistemological beliefs positively predicts the "Willingness to Learn" sub-dimension of lifelong learning tendencies constitutes an interesting result of the present study. From a theoretical point of view, an individual who believes that knowledge is unchanging and certain is not expected to be willing to learn, because, as Schommer-Aikins (2002) states, individuals who have naïve epistemological beliefs, that is, those who believe in the immutability and certainty of knowledge, prefer to refer to the memorized knowledge presented to them rather than researching it thoroughly by thinking deeply about a subject. On the other hand, although a positive prediction has been found between the "Belief that There is One Truth" and the "Willingness to Learn" sub-dimensions in the current study, it should be taken into account that the coefficient of prediction is relatively low. Nevertheless, it is possible to say that it is important to review this correlation with further studies.

In conclusion, the results of this research have revealed that teachers have sophisticated epistemological beliefs and a high level of lifelong learning tendencies. Another prominent result of the research is the effect of teachers' epistemological beliefs on their lifelong learning tendencies. In this direction, it has been determined that teachers' perspectives on the nature of knowledge and acquiring knowledge have an important place in understanding their lifelong learning tendencies. Therefore, it is possible to say that teachers who have sophisticated epistemological beliefs are more open to self-improvement and willing to learn throughout their lives. These results provide important information to policy makers in designing in-service training programs. In this direction, programs can be designed to improve teachers' epistemological beliefs within the scope of in-service training. As a matter of fact, many studies in the literature (Brownlee, Purdie & Boulton-Lewis, 2001; Hong & Lin, 2010; Kienheues, Bromme & Stahl, 2010) have revealed that individuals' epistemological beliefs can be developed. In-service training activities are carried out in a very short period of time, and not in the long term. In this respect, experts who design in-service training programs can design an "epistemological improvement program" by carefully examining the research conducted by Howard, McGee, Schwartz, and Purcell (2000). In the mentioned study, a 4-week program aimed at the improvement of teachers' epistemological beliefs was prepared and positive results were obtained. On the other hand, considering that the studies examining the correlation between epistemological beliefs and lifelong learning tendencies are limited, it can be said that this study draws attention to the correlation between these two variables. In this respect, it can be said that the research is also a guide for researchers working in the related field. In this study, it has been determined that the "Belief that There is One Truth" sub-dimension of epistemological beliefs positively predicts the "Willingness to Learn" sub-dimension of lifelong learning tendencies, albeit at a low level. When this situation is examined from a theoretical point of view, it can be said that this is an unexpected result. This indicates that more research is needed to examine the correlation between these variables. In addition to correlational studies, this subject can also be examined with mixed method studies in order to provide a more in-depth analysis. Teachers should be aware of epistemology so that their lifelong learning tendencies can be high.

AUTHORS' CONTRIBUTIONS

- The first author contributed to the drafting of the article, writing the introduction, and collecting and analyzing the data.
- The second author contributed to the drafting of the article, writing the introduction, analyzing the data and writing the findings section.
- The third author contributed to the drafting of the article, writing the discussion, conclusion and recommendations sections, and the final approval of the version to be published.

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Problematic Factors on Students' Learning in Higher Education

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Abstract

It is quite important to know and analysis the problems and gaps in students' learning to operate quality management system in higher education. In order to determine the problematic factors in students' learning in higher education, a long-term survey was conducted among university students and they were asked an open-ended question. Content analysis was used on students' reflections about the problematic factors of their own learning.
At the end of the content analysis, twelve main problematic issues about students' learning were determined. After analysing the reflections of higher education students, it was found that there were 141 problematic statements reflected about the issues that create problems on their learning and affect them negatively. Based on these statements totally 12 main-themes and 18 sub-themes were determined. When the main themes that emerged are examined, it is seen that they can be divided into two main groups. While the first four main problematic themes are related to the institutional dimension, the remaining eight themes consist of issues arising from the individual characteristics of the students. The most important problematic factor in students' learning in higher education is related to qualifications and behaviours of lecturers.

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INTRODUCTION

Knowledge gives individuals a chance to develop their own life and social life in many respects. As institutions of learning, universities seek ways to improve how we use and share knowledge. The using and sharing knowledge are getting accelerated depending on the rapid development of science, technology and knowledge. For this reason, all societies try to develop their educational system, especially designing effective learning-teaching system for their citizens to maintain their own sustainable development. Thus, gaining knowledge, which means learning, is a crucial issue for not only individuals but also society. It is known that university has two main functions: the first one is related to searching for meaning of phenomenon and the second one is related to teaching students (Elton 2008; Matthew 2009; Thibodeaux, Harapnuik, & Cummings, 2009). University, as a learning institution for students, lecturers and societies, must stimulate and facilitate learning-teaching process in formal education bases. An academic staff who is working at a university is also responsible for searching the meaning of phenomenon and teaching to students. Academic staff have the main skills to carry out many research about the quality of higher education related to excellence in higher education, and they must also have competencies regarding how to teach students ways of sharing knowledge and management of learning-teaching environment. However, teachers' and students' characteristics, learning-teaching environment and management system of university can create barriers to sharing and generating knowledge in higher education and affect both the quality of higher education and students' learning.

The barriers to sharing and generating knowledge in higher education can be removed by focusing on the quality and excellence of higher education. Quality of higher educational system should be improved by analysing the views of partners from different perspectives such as teachers, students and administers who have experiences. Some systems are going to be applied in many countries in order to get feedback from partners. It is known that there are different ways of improving the quality of higher education. The most popular ways are taking the experiences and views of students into account to achieve excellence in higher education. According to McDowell et al (2010, 76), "collecting feedback from students on their experiences of teaching and learning has become one of the central pillars of the quality process." Students' reflections about their experiences related to quality of higher education system can be collected on a regular basis. In order to evaluate the learning-teaching process and performances of lecturers, some basic types of questionnaires were used to apply to students in each semester not only in Turkey but also in many countries. Students mostly would not behave seriously while reflecting their experiences by means of that questionnaire because they get familiar with this tool. And also, students believed that results of the questionnaire are not put into practice in real life in order to improve the quality of higher education system. Moreover, the results of the questionnaire could not be discussed with partners for modification or development of the system. Now, only European Credit Transfer System (ECTS) questionnaire is applied to students to evaluate and decide the total ECTS credit in Turkey and European countries. However, these evaluations are not adequate for students to reflect their views and experiences about the quality of higher education. These evaluations mostly provide feedback on teaching process of courses but not on students' learning.

A quality management system should be developed in higher education by means of free reflections of students. Reflection in learning-teaching environment has a long history with reference to the work of Dewey, Polanyi, Habermas, Kolb, Schön, Mezirow, Boud et al and Moon (Bulpitt & Peter 2005). Students' free reflections of their own experiences about learning-teaching in higher education should be improved by means of getting phenomenological views of them. Tudor et al (2010) stated that structured questionnaire cannot give students much chance for free reflection of experiences, and it is based on the output or results of learning-teaching process. In order to operate quality management system in higher education, the reasons of problems and gaps about students' learning should be known and analysed thoroughly. Thus, in this research, the students were asked a phenomenological open-ended question. This question may provoke students to reflect their own experiences about problematic factors in their learning-teaching process in higher education. It may also provide students with the opportunity for bringing out the reasons behind their own learning problems.

The quality of higher education system can only be enhanced based on the voice of staff, teachers, students and also researchers' feedback for the system. However, the students of higher education are the disadvantaged group in giving feedback as their voice are not heard well enough in this system. Results of the research by Lin, Pan, & Ching 2015, 14) show that the common problems of higher education students are related to health, lessons and examinations, learning difficulties, interpersonal difficulties, time management, stress, career issues, self-efficacy issues and causing issues. According to the results of the research in Turkey, university students; they have many problems such as economic, academic, education, adaptation, social, psychological, cultural, economic, health, life, communication, emotional, employment and leisure time" (Donat, Bilgiç, Eskiocak, & Koşar, 2019; Erkan, Özbay, Cihangir-Çankaya & Terzi; Kacur & Atak, 2011; Korkmaz, 2000; Şahin et.al, 2009).

There is a wide variety of definitions and explanations of the concept "students' voice. However, it is very important to detect the student voice and transfer it to the system. Listening to student voices and adding these voices to the system can take many forms. In this way, the diversity of the student's voice can be transferred to the system and the systems can be improved in many ways (Carey 2013). According to McLeod (2011), student voice is a very complex and comprehensive concept. The function of the student voice in school education is to call for inclusive education, to value diversity and to create democratic practices that respond to and reflect these voices. "Student voice' (mainly about student representation, input and feedback), which is passive, to a focus on 'active student engagement' in teaching and learning, where students are partners, collaborators and change agents" (Jensen, Adams & Strickland 2014, 39). Students' voice reflects their own experiences and ideas about the problematic factors on students learning in higher education.

This study aimed at revealing problematic factors in students' learning in higher education through free reflections of students' own experiences.

METHOD

Qualitative research was conducted in order to determine the problematic factors in students' learning in higher education. Delphi method was applied in this research. Data were collected with a one-step written Delphi tour (Powell, 2003). The data of the research was acquired through an open-ended question thought seven years period from the first grade to fifth grade at the university. Content analysis was conducted on students' reflections about the problematic factors related to their own learning.

PARTICIPANTS

The survey was conducted between 2006 and 2013 in Turkey. From 28 faculties and five vocational schools at ten universities, 660 students participated in the study in total. The participants of the research consist of those studying at faculties and colleges of universities. In the research, opinions were taken students from all grade levels studying at two-year, four-year and five-year colleges and faculties. 51% of the students participating in the research are female and 49% male. 74% of the participants consisted of students studying in various faculties and 26% in two-year colleges. Considering the distribution of students from faculties participating in the research; 34% of the students are from health sciences (medicine, nursing, pharmacy, dentistry, health sciences faculties), 32% from social sciences (law, economics, business, education, history, sociology, communication faculties) and 34% from science (science and engineering faculties) participated in the research. 28% of the students from the faculties who participated in the research were first grade, 20% second, 19% third, 21% fourth and 12% fifth grade students. Schools of health, social sciences and sciences were tried to be represented in the research sample. 44% of the students studying in two-year colleges are first-year students and 56% are second-year students.

DATA COLLECTION

The purpose of the research and the procedure of participation in the research were explained to the higher education students willing to participate. Those who wanted to participate in the research were sent to the researcher by writing their answers. Students were asked an open-ended question during the survey. The question was "What factors do you think have negative effects on your learning in higher education? Please write these factors briefly." In eight years, period between 2006 and 2013 in Turkey, the same question was answered by different students in different universities. Students write their own problematic factors about their learning based on their own learning.

Data were collected from students both face-to-face and remotely via e-mail. A form in which the open-ended question was written and a consent form were given. Before answering the open-ended question, they were asked to read the consent form stating that they participated in the research voluntarily and to mark their participation, and not to write the names of the forms and student numbers. The Consent Form showing that they voluntarily participated in the research and the form in which the student responses were written were taken together. During the data collection period a code was given for each student's writing in order to facilitate data analysis.

ANALYSIS OF DATA

The data coded and themes created by the researcher were reviewed together with a different researcher who had knowledge of the subject, codes and themes were rearranged and thus validity was tried to be ensured. Afterwards, for the reliability of the analysed data, two experts other than the researcher were assisted in the analysis and coding of the data.

All of the students' views were covered in the process of the content analysis to determine the thematic frame of the problematic factors of students' learning in higher education. Micro-level coding keys were created by analysing a 10% sample taken from the written texts of the students by the researcher and an expert. While conducting content analysis at the macro level, the suitability of the generated codes for analysis was tested. Then, analyses were made on the basis of different programs. By discussing the results of the analysis, it was examined whether the main themes and sub-themes differ according to different programs. Macro analyses were made separately according to program types, undergraduate level and graduate programs, but it was determined that the themes emerged as a result of these analyses were gathered under similar headings. Since the themes are similar according to the programs, the results of the analysis were reviewed and it was decided to analyse under the title of higher education instead of the type and level of the program. After the macro level analyses were completed, it was decided how to analysis the micro analysis.

The micro level content analysis conducted with two experts and the researcher during the research period after the macro level analysing. The researcher and experts derived problematic factors in students' learning by means of analysing the students' writings. They tried to organize themes, sub-themes and statements or definitions about problematic factors related to students' learning. All problematic factors from the students' writings were coded and written under the themes as statements. The micro level content analysis was carried out in two different stages. The first stage covered initial content analysis and the second stage included reanalysing the initial content analysis results to clarify themes that was the results of the first stage content analysis.

- In the first stage of the content analysis, students' reflections were analysed in detail. Totally 28 themes revealed after the initial content analysis process based on 141 statements. However, the results of the initial content analysis were very complex and confusing for comprehension of the thematic structures of problematic factors in students' learning in higher education. The experts and researcher decided that the initial content analysis results should be reanalysed to refine the thematic frame as problematic factors of students' learning in higher education. At the end of the first phase, 141 items and 28 themes that emerged as a result of the analysis made by the researcher and two experts were discussed. It was decided that some items under the main themes were not suitable for the main theme and that some main themes should be converted into sub-themes. After this decision taken in the first stage, it was decided to conduct a new analysis on the main and sub-themes and the items under these themes in the second stage.
- In the second stage, the thematic analysis was carried out based on the results of the initial content analysis to review and refine the thematic frame of the problematic factors in students' learning in higher education. It is clearly seen that some initial themes, which occurred in the initial content analysis, seemed to be collected under the same themes. For example, "housing", "nutrition", "living expense" and "sleeping" were determined as different themes in the initial content analysis results. However, in the second stage of the content analysis, these themes were collected under the same themes such as "living conditions of students".

After reanalysing the results of the initial content analysis, the main problematic issues about students' learning were determined in the second stage and twelve main themes revealed. The researcher and experts concluded that the twelve themes reflect the problematic factors in students' learning in higher education. The frequencies were calculated by taking into account the students' views and experiences on their learning problems. At the end of the second stage of content analysis, the intercoder reliability of the study was found as %90 among the researcher and two experts. "In Table 1" the results of the content analysis related to the thematic structures of problematic factors in students learning are presented as frequency and percentage.

FINDINGS

The main sources of problems in students' learning in higher education can be "seen in Table 1" and the twelve themes posing problems in students' learning were put in order from the most problematic theme to the least one with regard to the theme percentages. Accordingly, sub-themes of the themes were ranged from the most problematic one to the least.

Table 1. The main problematic factors on students' learning in higher educations (N=660)

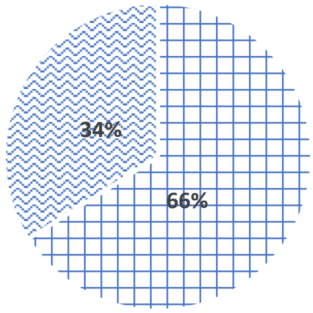
Themes and Sub-themes about Problematic Factors	f *	%	Number of Problematic Statements
Qualifications and behaviours of lecturers	5.75	22.00	30
Lack of professional qualifications of lecturers			
Autocratic behaviours of lecturers			
Insufficient classroom management			
Learning-teaching process	5.02	19.00	25
Quality of learning-teaching activities			
Learning-teaching methods and techniques			
Students' participation in learning-teaching process			
Curriculum	3.72	14.00	24
Content of courses			
Evaluation of students' performances			
Design of curriculum			
Physical environment of learning-teaching	2.992	11.00	13
Students' individualistic features	1.524	6.00	13
Emotional problems of students	1.52	6.00	8
Anxiety/panics/excitement of students			
Motivation/interest of students			
Hopelessness of students			
Living conditions of students	1.39	5.00	7
Nutrition of students			
Sleeping of students			
Sheltering of students			
Study habits of students	1.32	5.00	7
Study environment of students			
Time management of students			
Ability of learning to learn of students			
Socio-cultural backgrounds of students	1.18	4.00	5
Economic backgrounds of students	1.17	4.00	4
Relations with friends	0.58	2.00	3
Relations with family	0.46	2.00	2
Total	26.61	100,00	141

** Frequency of repetition of problematic statements in the theme*

After analysing the reflection of higher education students, it was found that there were 141 problematic statements reflected about the issues that create problems on their learning and affect them negatively. Based on these statements totally 12 main-themes and 18 sub-themes were determined. Six themes did not have sub-themes whereas each of the other six themes had three sub-themes, comprising eighteen sub-themes in total.

When the main themes that emerged are examined, it is seen that they are divided into two main groups. The first four main problematic themes constitute the institutional dimension. The remaining eight themes constitutes student dimension as seen in Figure 1.

Figure 1. *Sources of higher education students' learning problems*



As seen in Figure 1, twelve main themes are separated into institution and student-related Problems.

"Table 2" are related to the institutional dimension. This dimension includes four main themes such as "*Qualifications and behaviors of lecturers, Curriculum, Learning-teaching process, Physical environment of learning-teaching*" which are stated as problems in student learning process and can be "seen in the Table 2" below.

Table 2. *Student views on problematic factors under main and sub-themes related to intuitional dimension (N=660)*

Problematic factors related to intuitional dimension	%
Qualifications and behaviours of lecturers	
Lecturers were not democratic	81.00
Lecturers had communication problems in any learning-teaching situation	76.30
Lecturers didn't have comprehensive knowledge of the subject they taught	66.20
Lecturers had aggressive and threatening attitudes during the lectures	64.00
Lecturers criticized students negatively and injuriously	51.20
Learning-teaching process	
Lectures were given based on completely theoretical knowledge	74.32
Learning-teaching process wasn't entertaining and interesting	70.20
Lectures were based on memorizing the topics	69.20
Mentioned that lectures were given through slide projection	63.00
Appropriate teaching methods and techniques weren't applied in the learning-teaching process	59.00
Curriculum	
The number of applied courses was insufficient	78.00
Course content included superficial field knowledge and didn't develop any skills	48.00
Exams were based on memorization	45.00
Student performances weren't measured by means of applied projects and homework assignments	44.00
Course hours were excessive	40.00
Physical environment of learning-teaching	
Classrooms were very crowded	81.00
Physical environment of classroom wasn't appropriate for courses and exams	67.00
Laboratories were insufficient	60.30
Technology infrastructures were insufficient	52.20
Course materials were insufficient	38.00

The students reflected 30 different problematic statements in the first theme in total. In the first theme, the first five mostly repeated problematic situations affecting students' learning negatively are as follows: 81 % of the students stated that “lecturers were not democratic”,76.30 % stated that “lecturers had communication problems in any learning-teaching situation”, 66.20 % claimed that “lecturers didn’t have comprehensive knowledge of the subject they taught”, 64.00 % mentioned that “lecturers had aggressive and threatening attitudes during the lectures” and 51.20% expressed that “lecturers criticized students negatively and injuriously.” More than 50.00% of the students stated that behaviours of the instructors affect their learning in a negative way.

The students reflected totally 25 different problematic statements in the second theme which is related to “learning-teaching process” and has three sub-themes. The first five mostly repeated problematic situations affecting students’ learning negatively are as follows: 74.32 % of the students stated that “lectures were given based on completely theoretical knowledge”, 70.20 % claimed that “learning-teaching process wasn’t entertaining and interesting”, 69.20 % pointed out that “lectures were based on memorizing the topics”, 63.00 % mentioned that “lectures were given through slide projection” and 59.00 % asserted that “appropriate teaching methods and techniques weren’t applied in the learning-teaching process.” The students pointed out that these affected their learning negatively. More than 59.00% of the students stated that they have problems in their learning due to the problems arising from the learning-teaching process.

In the third theme, which is about curriculum, 24 different problematic statements were reflected by students in total. With regard to this theme, the first five mostly repeated views of students are very important. 78.00 % of the students maintained that “the number of courses including implementations was insufficient”, 48.00 % claimed that “course content included superficial field knowledge and didn’t develop any skills”, 45.00 % stated that “exams were based on memorization”, 44.00 % indicated that “student performances weren’t measured by means of projects and homework assignments that require active participation of students and 40.00 % complained that “course hours were excessive” and it affects their learning negatively. At least 40.00% of the students stated that they had difficulties due to the problems arising from the curriculum. That higher education institutions should be aware of and sensitive to the changes in the content of the school curriculum (William 1994, 36).

Thirteen different problematic statements about students’ learning were reflected by students in total in the fourth theme. The first mostly repeated problematic statements in students’ learning were mentioned 81.00 % and these students stated that “classrooms were very crowded”, 67.00 % asserted that “physical environment of classroom wasn’t appropriate for courses and exams”, 60.30 % claimed that “laboratories were insufficient, 55.20 % expressed that “technology infrastructures were insufficient” and 38.00 % maintained that “course materials were insufficient”, and students stated that these affected their learning negatively. At least 38.00 % of the students stated that they had difficulties due to the problems arising from the physical environment of learning-teaching.

The remaining eight main themes consisting of problematic factors related to the students themselves are “given in Table 3”.

Table 3. *Student views on problematic factors under main and sub-themes related to main dimension of students (N=660)*

Problematic factors related to individual dimension of the students	% *
Students' personal characteristics	
Inability to focus on and school studies due to their daily problems	73.00
Inability to follow lessons carefully	49.20
Their laziness about school studies	45.50
Inability to reading habit of them	30.30
Students' resistance about their own learning	25.80
Emotional problems of students	
Anxiety of inability to understand lessons	38.20
Hopelessness about future	30.50
Ineffective counselling services for students	27.30
Stress of exams and homework	25.30
They were reluctant to lessons because of the attitudes of lecturers	23.30
Living conditions of students	
Inappropriate sheltering	65.20
Unhealthy nutrition	54.20
Sleep-wake lessness	54.20
Insufficient lunches provided by school	32.00
They had to have lunch outside school	12.50
Study habits of students	
Studying for the aim of passing courses rather than learning	60.00
Inappropriate living environment for studying	39.20
Insufficient study habits	46.30
Insufficient knowledge of learning	42.00
Ineffective time management	17.00
Socio-cultural backgrounds of students	
They don't like the city which their universities are in	41.30
They weren't able to adapt to cities which their universities are in	40.00
Insufficient cultural activities at universities	32.00
Insufficient cultural activities in the city that the university is in	28.30
Insufficient social activities	25.30
Economic backgrounds of students	
Financial difficulties and problems	77.00
Expenses of homework assignments and projects were very high	50.30
Economic problems with acquiring the course-related materials	35.00
Have to work at any job to earn some money	32.30
Lecturers had communication problems in any learning-teaching situation	76.30
Relations with Friends	
Problems with friends	45.00
Emotional problems with girl/boyfriends	37.00
Their loneliness/friendlessness	15.30
Relations with family	
Longing for family members	58.30
Family problems	19.00

**Frequency of repetition of Student views on problematic factors related to individual dimension of the students*

The fifth theme is about "students' individualistic features" and it does not have any sub-themes. Totally eight different problematic statements were reflected by students in this theme. 73 % of the students mentioned that "inability to focus on and school studies due to their daily problems", 49.20 % mentioned "inability to follow lessons carefully", 45.50 % pointed out "their laziness about school studies", 30.30 % expressed "insufficient reading abilities" as the fourth factor and 25.80 % maintained that "students' resistance about their own learning" affected their learning negatively. At least 38% of the students stated that they had difficulties due to the problems arising from the "students' individualistic features"

The sixth theme is related to "emotional problems of students" and it has three sub-themes. Totally sixteen different problematic statements were reflected by students. 38,20 % of the students put forward that "anxiety of inability to understand lessons", 30.50 % addressed "hopelessness about future" affected their learning in a negative way. 27.30 % claimed that "an effective counselling service for students wasn't provided", 25. 30 % pointed out "stress of exams and homework" and 23.30 % explained that "they were reluctant to lessons because of the attitudes of lecturers" and this affected their learning negatively. At least 38.00 % of the students stated that they had difficulties due to the problems arising from the "emotional problems of students".

The seventh theme is related to "living conditions of students", and it has three sub-themes. Seven different problematic statements in total were reflected by students. The most important problematic factor in students' learning related to living conditions of students is "nutrition of students." They mentioned that the nutrition of the students and the breakfast, lunch and evening meals were insufficient both in terms of nutritional values and quantity. In addition, it can be summarized as going to school hungry in the morning, since they do not have the opportunity to have breakfast. The second important problematic factor is "sleeping patterns of students" and the third one is related to "sheltering of students." Three of these statements were related to nutrition of students, four of them were related to sleeping of students and one of them was related to sheltering of students. With respect to the seventh theme, the first mostly repeated view stated by 65.20 % was "inappropriate sheltering". Both "unhealthy nutrition" and "lack of sleep" were mentioned 54.20 %. 32.00 % of the students claimed that "school lunches were insufficient" whereas 12.50 % maintained that "they had to have lunch outside school" and these affected their learning negatively. They stated that eating outside of school is very expensive and causes a waste of time, which has a negative influence on their learning.

The eighth theme is about "study habits of students", and it has three sub-themes. Totally seven different problematic statements were reflected by students. In the scope of the eighth theme, the first mostly repeated view stated by 60.00 % was "studying for the aim of passing courses rather than learning". Another problematic situation affecting students' learning negatively was "inappropriate living environment for studying" and it was put forward by 39.20 %. In addition, "insufficient study habit" was stated by 46.30 %, "insufficient knowledge of learning" was mentioned by 42.00 %, and "ineffective use of time" was expressed by17.00 % of the students to explain problematic factors on their learning. The ninth theme is related to "socio-cultural backgrounds of students" and it does not have any sub-themes. Totally seven different problematic statements were reflected by students with regard to the ninth theme. The first five mostly repeated views of the students are very interesting. 41,30 % of the students stated that "they didn't like the city which their universities were in". According to the students, the fact that the rents of the houses in the city are very high, the dormitory facilities do not appeal to the students in terms of quality and price, the lack of trust in the students, the inability to find a part-time job, the low wages of part-time jobs and the long working hours, even if there is a job, are the reasons why they don't like the city they live in. 40.00 % of the students claimed that "they weren't able to adapt to cities which their universities were in". 32.00 % put forward that "cultural activities at universities were insufficient", 28.30 % asserted that "cultural activities in the cities they lived were insufficient". Students mention that cultural activities such as theatre, cinema, concerts, panels, talks, recitals and exhibitions are insufficient as well. 25.30 % pointed out that "social activities were not sufficient" and these affected students' own learning negatively. Students stated that social activities such as arts, sports, scientific or professional trips or observations, club activities, competitions, projects or scientific festivals, which are carried out through students' interactions with students or teachers or other people, are insufficient.

The tenth theme is related to "economic backgrounds of students" and has no sub-themes. Totally four different problematic statements were reflected by students. Regarding the tenth theme, the first four mostly repeated views of students are very interesting. 77.00 % of the students mentioned "financial difficulty and problems". 50.30 % stated that "expenses of homework assignments and projects were very high", 35.00 % declared that "they had economic problems with acquiring the course-related materials", 32.30 % expressed that "they were working at any job to earn some money due to economic problems so they couldn't make time for studying" and these affected students' own learning negatively.

The eleventh theme is related to "relations of friends" and three different problematic statements were reflected by students in this theme. In terms of the eleventh theme, the first mostly repeated view of the students was "problems with friends", and it was mentioned by 45.00 % of the students. 37.00 % stated "emotional problems with girlfriends or boyfriends" while 15.30 % reflected "their loneliness/friendlessness" as problematic. The twelfth and the last theme is about "relations of family". Totally two different problematic factors were reflected by students under this theme. With respect to the twelfth theme, the first mostly repeated view is "longing for family members" with 58.30 %. "Family problems" is another view mentioned by 19.00 % affecting students' own learning negatively.

DISCUSSION AND CONCLUSION

The results of research manifest that there are many problems in higher education concerning about students' learning. These problematic factors can be thematized in twelve themes "as seen in Table 1 and Figure 1". It is clearly seen that the first four themes are connected with operation and management of learning-teaching process in higher education. These themes are out of students' control but they affect students' learning directly. And also, the first group may affect the second group problems of student learning.

The problematic factors in the eight main themes in the second group are different from the themes in the first group. The second group theme is related to students' own features, emotional, economic, social and physical environments. It means the first group of themes of problematic factors is out of students' control and it is related to institutional dimension of learning. When the results of this study are reviewed, it can be seen that 66 % of the problems affecting students' learning are related to learning-teaching environment whereas 34 % of the problems result from students' characteristics, behaviours and their own physical and social-cultural environments. When the themes are analysed, institutional bases of learning problems are almost twice as much as the problems related to the students. This result indicated that learning problems mostly derived from institutional dimension of education.

The first group themes composed of "*Qualifications and behaviours of lecturers, learning-teaching process, curriculum, physical environment of learning-teaching*" is the most important of problematic factor of students' learning in higher education. When the four themes in the first group are examined (66 %), it is seen that these themes fall into institutional dimension. However, all of problematic factors related to institutional dimension also related to the characteristics and competencies of lecturers. As the problematic situation with respect to "learning-teaching process" is examined, these situations to a great extent seem to be connected with lecturer qualifications. It is known that teaching staff is responsible for operating the learning-teaching process in the school. Thus, excellence in higher education is mainly connected with professional qualifications of teaching staff. Behaviours, attitudes, knowledge, qualifications and experiences of academic staff should affect students' learning, personality and also students' future. Students clearly stated that their learning is affected by the qualification and behaviours of lecturers. They have many responsibilities that their responsibility not only communicates the scientific message or shares subject-matter context but also helps transforming youth into adults (Iorga 2010) in higher education. For example, the problematic factor about "curriculum" related to institution dimension, but it is very difficult issues related to lecturer' qualifications. Because curriculum is mostly designed, applied and developed by lecturers in tertiary level. "Curriculum '...is dynamic and in flux and is also the site of contested interpretations. A curriculum is fluid and is not - cannot - be caught in any schema or template" (Bovill & Woolme 2019, 412). Curriculum studies in higher education is very confuse and hard topic for the students and teacher. It is very technical study even for curriculum developers. Fraser and Bosanquet's research pointed out that "some academic staff reported finding it difficult to talk about curriculum with colleagues where there existed ingrained understandings of what curriculum is" (Bovill & Woolme 2019, 419). For this reason, issue about higher education curriculum should discuss intensively by expert and lecturer. Effectiveness of students' learning requires high level student engagement in learning-teaching process. Effectiveness of learning-teaching process must improve by means of reflection of learners that lecturers need to search about. Students' reflections of their learning experience can help to detect problems in the learning-teaching environment. Determining the gaps in learning-teaching environment can clarify the reasons of the gaps and also provide evidence for the reasons and solutions of the problems. Students' reflections comprise the ways that may detect students' learning problems and "educators should concern themselves more with the development of a reflective environment" (Bulpitt & Peter 2005, 215). It can be said that designing reflective environment is needed through getting students' and staffs' reflections to get feedback from them.

"*Qualifications and behaviours of lecturers, Curriculum, Learning-teaching process, Physical environment of learning-teaching*" seems to related to institutional dimension but, it is related to qualifications of lecturers. This result shows that to improve learning-teaching process by making the process more effective, to develop and design curriculum and learning-teaching environments in the school so that higher education will be more qualified. In order to do all these, the qualifications of the lecturers must be sufficient.

Students attending two-year programs clearly reflected those characteristics and professional qualifications of lecturers become dominant factors in students' learning in higher education. It is known that lecturers have the most important roles in the operation of the learning-teaching process. The result shows that most of the problems about students' learning are related to teaching staff's inadequacies about management of learning-teaching process. Pedagogical and discipline knowledge of teachers emphasize mentoring the process of learning-teaching. These types of knowledge also become vehicles for professional development and scholarship of teachers (Trask et al, 2009). Lecturers need to improve their own scholarship. Khandelwal stated that college teachers' behavioral profile of teaching differentiate excellences and poor performances of lecturers from the perspective of students, and excellent behaviors can be explained in various behavioral dimensions, such as "rapport with students, course preparation and delivery, spending time with students, and providing encouragement are not very difficult to perform, and the poor behaviors such as treating students unfairly are equally simple to avoid" 2009, 306). It is clearly seen that communication of the lecturers is the main problematic area for students' learning in higher education. According to Iorga (2010, 142) "communication is among the methods through which a teacher becomes a mentor for his students." It means that communication is the main problem related to "qualifications and behaviours of teachers" and "teaching-learning methods and techniques."

The results of this research show that teachers' negative behaviours such as "negative and injurious criticisms of teachers", "authoritarian behaviours of teachers" and "teachers' behaviours about insulting students" cause many problems related to students' learning in higher education. Rotgans and Schmidt's (2011) research results about student perception show knowledgeable teachers can positively affect student achievement and also if students feel that the teacher lacks knowledge, they cannot take a learning task seriously and are not willing to engage in learning in the active-learning classroom.

Competencies, qualifications and behaviours is very hard topics for schools and universities. Selvi (2010, 167) stated that teachers' competencies composed of nine different dimensions such as "*field competencies, research competencies, curriculum competencies, lifelong learning competencies, social-cultural competencies, emotional competencies, communication competencies, information and communication technologies competencies (ICT) and environmental competencies*". These competencies, which are defined as teacher competencies, actually include instructor competencies. These competencies draw the framework of the professional competencies of the instructors working in pre-school education institutions from the university. Competencies, qualifications and behaviours of teacher or academic staff and his/her operation of learning-teaching process comprise the most problematic situations in students' learning and take the first line among the other problematic factors of students' learning. It is very interesting that the behaviours and qualifications of the instructors are the main factors for students to learn in higher education. "Teachers' competencies affect their values, behaviours, communication, aims and practices in school and also they support professional development and curricular studies" (2010, 167). This result about students' learning in higher education is very remarkable because higher education students might follow their own learning aims and apply self-direct learning process without being affected by the behaviours of teaching staff. Barnett (1997) stated that "students are being given more responsibility for their own learning and are able to feel immediately involved in and committed to their own ideas …" in higher education. According to Wingate (2007, p. 393) "… traditional students who enter university from secondary school are not any more adequately prepared for the demands of studying at university.". It is clearly seen that higher education students need to improve their own learning to learn skills and self-direct learning skills and lecturers must also improve their own teaching skills to support their students' learning as mentors. Perry (1994) stated that the numbers of those participating in the higher education system increase, and as that increase is inevitably unmatched by an equal increasing unit funding, the quality and versatility of teaching will become ever more important.

The second group problematic factors compose of "*Emotional problems of students, Students' individualistic features, Living conditions of students, Study habits of students, Socio-cultural background of students, Economical background of students, Relations with friends, Relations with family*" relation with students' individualistic dimension and these are divided into two sub-groups. The first sub-group is composed of problems about the individual's *features* and the second sub-group includes problems arising from the individual's environment.

According to Murray (1991) there are many factors associated with students' learning that lie outside the control of the individual academic or department. For example, `the main factor determining student learning (cited in Harvey & Knight, 1996, 148) such as students' living conditions may not be bound up with academic environment but they affect students' learning negatively. In the research, students' individualistic features, emotional problems of students, living conditions of students, study habits of students, socio-cultural background of students, economical background of students, relations with friends and relations with family are outside the control of higher educational system.

Teaching profession requires moral, emotional and motivational bases to fulfil the qualifications of learning-teaching process. The moral, emotional and motivational bases can be undertaken by both teachers and students while studying together. However, teachers or lecturers become dominant to establish and process the moral, emotional and motivational bases into learning-teaching process. In the planning process, what to teach and how to teach in the classroom are determined by lecturers. The design of a new learning-teaching process is based on teachers' roles and most students reflected that tutor were stimulating their learning. The moral bases in learning-teaching process are very important to students' learning. The research result shows that unethical behaviours of lecturers can decrease students' learning. For example, "lecturers' threatening attitudes during the lectures" and "lecturers criticizing students negatively and injuriously" are related to moral foundations of students' learning. They are also related to emotional and motivational bases of students' learning.

Emotional problems of students are mostly connected with lecturer's communication with students. If a lecturer's communication ways are not favourable for students to share feelings and thoughts, this causes some problems about students' learning. In higher education, motivation of students is an extremely important issue and lecturers may affect students' motivation for learning. Tudor et al (2010) stated that 'when the lecturer 'does enough' and that working through only some of the tutorial problems the lecturer sets is enough, the need to develop self-motivation is removed in some way" (p. 88). Maclellan stated that "motivation is a complex construct which is regulated by students as well as being influenced by tutors" (2005, 203). Lectures must give every student a chance to improve their own motivation for learning by means of reflecting on their own problematic factors about learning. Lecturers must take the diversity among students in the course into account because students have different motivations and different levels of knowledge about title (McGuire, 2008). Students' reflections about their own learning environment, that is their positive and negative experiences, will support learning environment and improve students' motivation for learning. And also, Devlin & Samarawickrema (2010, 113) stated that "teachers should motivate students through displaying their own enthusiasm, encouraging students and providing interesting, enjoyable and active classes".

The results of this research can provide four important feedbacks about learning-teaching in higher education from the students' perspectives. The first result is related to teachers' teaching performance, the second result is related to students' learning strategies and styles. The students stated that they did not have knowledge about their learning and they did not have enough knowledge especially about how they learned. They stated that they had learning problems especially because they did not have information about their own learning styles and the learning strategies they should apply. The third result is connected with students' individualistic features and learning-teaching environment of higher education. The fourth result is related to students' need for more tutorial support from their teachers and teachers' inability to give this support during the learning-teaching process. This leads to a contradictory situation for the students and teachers in higher education. This contradictory situation may create many gaps and problems in the learning-teaching environment. It is concluded that if students have lifelong learning skills, they organize their own learning, apply Self-Directed Learning and do not need teachers who teach them directly. In this case, students only need tutorial support from teachers in order to improve their own learning in higher education. Higher education institutions must organize some courses for students to improve their studying habits. They also must provide some subsistence such as accommodation, economical and nutritional support and sheltering for students to support their learning in higher education.

There are two duties for the lecturers and transferability between the two career routes need to be built at the university (Matthew 2009). One of these duties is researching and the other is related to teaching. A high-quality system of researching and teaching at universities might come out of the recent development of the scholarship of learning and teaching (Elton 2008, 197). Boyer and Schulman discussed the concept of the scholarship. They stated that research and teaching should not be seen as separate entities in an academic's working life (cited in Stein & Walker 2010) because lecturers must design teaching based on research results and the developments in their subject matter area. Teaching, as an action by itself, becomes a research issue for lecturer in order to develop learning-teaching activities and process in higher education. Lecturers must have responsibility for enhancing their students' learning, but they have several limitations.

In this research, which will be described as the voice of students, it is very important that the results, which are based on students' opinions, are made in terms of teachers. Because student and instructor evaluations and demands contribute to the resolution of problems affecting learning in higher education. Hernández stated that "continuous assessment has the potential to support student learning through feedback and to increase students' motivation for learning" (2012, 500 "Learner voice positively influenced learning and the learning environment. When learners are given choice and the ability to develop their voice as a manifestation of these choices, learners become vested in the experience and take ownership of the learning" (Thibodeaux, Harapnuik & Cummings, 2019, 57).

The control of the individualistic factors that make up the second group is not under the control of the student alone. Therefore, the problems in the second group are not only problems that students will solve. Institutional support provided by the university is needed to solve the problems in the second group. For example, if the university can provide scholarships to support the solution of the student's economic problems, provide free or very low-paid food support or accommodation, it can contribute to the solution of most of these problems.

According to Jensen, Adams & Strickland (2014) the effectiveness of teaching staff in higher education has been identified as a dimension of quality and this issue remains a priority in the higher education agenda. If we discussed of the quality of the whole education system, we should consider the quality of an institution and the quality of the individual course (William 1994,36). If universities can focus on solving students' learning problems, they can create solutions to many problems related to student learning. Universities and lecturers have a great influence on the creation of these solutions. For this reason, universities should take an active role in solving students' learning problems. The roles and functions of universities, which should be learning centers, are changing day by day. Being a learning center; it means making efforts to ensure effective learning, and effective resource and time management in order to import new practices and developments to the system. For example, universities should change the current understanding of being a knowledge center. If they can assume functions as centers that will facilitate access to information, many problems stated by the students will be solved.

In order to reduce the problems arising from the teaching qualities of the students in higher education, it is necessary to move away from the teacher-centered approach. There is a need for different perspectives to ensure that the learner participates in the learning-teaching process much more actively. The inclusion of new approaches in higher education that will enable students and learning management systems to participate more effectively in the learning-teaching process will reduce the effect of the teacher-centered approach. If the student has Self-Directed Learning Skills, it will be very effective in providing this transformation. Self-Directed Learning "an individual sets their own learning goals and then attempts to actively monitor, control, and regulate their cognition, motivation, and behaviours in order to achieve those goals” (Nordmann et al, 2019, 1081). A student who benefits from the learning support provided by learning management systems (LMS) can effectively continue his/her Self-Directed Learning. When the results of this research are examined, it is seen that there are many problems that prevent students from learning in the current higher education system. It is clear that most of these problems arise from the university's own structure, operating processes and components. These results reveal that there is a need for a serious paradigm shift in the concepts of student learning in higher education. New studies on education and innovations should be integrated into the university system rapidly, especially considering technology-based learning and e-learning. In order to transfer this change to the system, instructor competencies, roles and responsibilities should be developed and adapted to the new system. When the literature is examined, it is seen that the results of two studies on the qualifications of university teaching staff are related to this research. In a study conducted by Durmuşçelebi (2017) on the subject of teacher competencies in Turkish universities, qualified teacher behaviours were determined by applying a scale. According to the students' opinions, while the qualified teaching behaviours of the instructors were not at the expected level, the faculty members found themselves sufficient. According to these results, the students show that the instructors "sometimes" exhibit qualified teaching behaviours and the level of these behaviours is not sufficient. It is seen that there is a difference between the views of the instructors and the students in the context of the qualified teaching behaviours of the instructors. In the second study, Alimbekov, Yeşil, Yılmaz, Yılmaz, Boobekova, Borkoyev & Mamırova, 2021) examined the teaching competencies of university lecturers working at Turkish Manas University. In the research, it was aimed to determine the views of the faculty members on the problems of university teaching staff regarding their teaching competencies. In the learning-teaching process, the instructors stated that they had few problems in terms of "effectively benefiting from teaching methods and principles, guiding students and communicating". However, this is only about the self-evaluation of the instructor and the student's opinion was not taken. In Turkish universities, it is necessary to take measures to eliminate the learning problems of students by conducting comprehensive and in-depth research on the dimension of students and instructors on the subject of instructor competencies. It is envisaged that such a renewal would form part of an ongoing endeavours to ensure that future developments, trends, understandings, government directions, stakeholder expectations and student needs are continually considered and incorporated into the collective understanding of effective teaching. The notion of effective teaching in higher education can then continue to have resonance and meaning within a changed and changing context (Devlin & Samarawickrema 2010, 122).

It can be said in relation with the research that the results emerged are quite interesting. The problematic factors that hinder student learning revealed in this research overlap to a large extent with the *Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG*), which has made great efforts to be implemented by universities. It is known that European Union (EU) set a lot of internal and external Standards and Guidelines for Quality Assurance in the European Higher Education. Standards for internal quality assurance Such as “*quality policy for quality assurance, Design and approval of programmes, Student-centred learning, teaching and assessment, Student admission, progression, recognition and certification, Teaching staff, Learning resources and student support, Information management, Public information, On-going monitoring and periodic review of programmes and Cyclical external quality assurance* (Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG), 2015). With the implementation of a total of ten basic items in the Standards for internal quality assurance, it can be said that the factors related to the learning problems of the students identified in the research will be eliminated to a great extent. For this reason, the universities in Tur key, taking these standards into account and making new arrangements to realize these standards in universities, will help to solve many problems that constitute the sources of students' learning problems and to make higher education institutions more qualified.

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The Mediating Role of Organizational and Professional Commitment in the Relationship between Teacher Empowerment and Organizational Citizenship Behaviors*

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Abstract

The aim of this research is to determine the perception levels of teachers regarding their own empowerment, organizational commitment, professional commitment and organizational citizenship behaviors(OCBs) and to determine the mediating role of organizational and professional commitment in the relationship between teachers' empowerment and OCBs. The research is in correlational survey model. The sample of the research is 441 teachers working for public secondary schools in the central districts of Denizli during the 2019-2020 academic year. For analyzing the data "*mediation effect analysis*" was performed. It has been determined that teachers have "*very high*" level of perceptions about OCBs, "*high*" level of perceptions about their empowerment, ethical and professional commitment, "*moderate*" level of perceptions of calculative commitment, and "*very low*" level of perceptions of alienative commitment. In the multi-mediation model, in which the effect of teacher empowerment on OCBs was examined through the dimensions of professional commitment and organizational commitment, it was determined that the variables of professional commitment and ethical commitment had a significant partial mediation effect between teacher empowerment and OCBs. As teachers' empowerment increases, OCBs also increase, and 59% of this increase is explained by the positive effects of professional commitment and ethical commitment on OCBs.

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* This study is based on Yeliz Özkan Hıdıroğlu's Doctoral thesis titled "The Effect of Teacher Empowerment on Organizational Commitment, Professional Commitment and Organizational Citizenship at Schools" at Pamukkale University Department of Educational Sciences under the supervision of Prof. Dr. Abdurrahman TANRIÖĞEN.

INTRODUCTION

Teachers have great responsibilities in preserving civilization, developing culture and transferring it to younger generations, strengthening the belief and value judgments of society, raising awareness of development and development as a social consciousness, and establishing a democratic social order. Along with the developing and changing conditions, the opportunity structures, powers and psychology of teachers should be directed in line with the changes. For this reason, teacher empowerment is considered as a subject that should be researched and will always be up to date as long as there is change. The situation where the teacher is both the subject and the object of change, makes teacher empowerment a more remarkable and compulsory field than in previous years (Fandiño, 2010).

Empowering teachers, ensuring that they continue to progress and improve is important for their performance at school. Wallace (1995) and Tannenbaum (1966) state in their research that teachers' desire for further progress results in higher school commitment. In this direction, one of the factors that creates organizational commitment, which is shown as the antecedent of many positive organizational behaviors, is empowerment (Kaplan, 2010). Odabaş (2014) states that the purpose of empowering the employee is to make the employee the owner of his job. Because the employee who considers himself as the owner of his job will be more committed to his institution.

It is important to ensure the organizational commitment of the employees in order for the personnel empowerment and personnel empowerment process, which is defined as the process of helping, sharing, educating the employees and ensuring the teamwork of the employees, increasing their decision-making powers and developing the employees, to function effectively (Doğan & Kılıç, 2007). The fact that the success of schools depends on qualified employees, keeping qualified employees at school and establishing organizational and professional commitment make these concepts important (Karataş & Güleş, 2010). In addition, organizational supervision that supports the minimum efforts of teachers in educational organizations is not sufficient by itself. There is a need for highly motivated teachers who are highly identified with their school. This situation highlights the emphasis on organizational commitment. In the literature, there are studies showing that organizational commitment positively affects organizational performance, motivates employees and makes them determined to stay in the organization (Balay, 2014; Doğan & Kılıç, 2007). Cunningham and Hyman (1996) stated that high levels of organizational commitment can be reached by empowerment and managerial support. Joo and Shim (2010) also state that empowerment is related to organizational commitment. There are also studies showing that organizational commitment reduces the turnover rates and absenteeism behaviors, and increases job satisfaction and OCBs (Meyer, Stanley, Herscovitch, & Topolnytsky, 2002; Tett & Meyer, 1993).

While examining the studies on organizational commitment, another concept that has been encountered recently is the concept of professional commitment. Professional commitment is of great importance in a profession such as teaching, which is based on gaining knowledge and skills to the individual and society. It has been determined that individuals who are committed to their profession show more research activities to improve their profession, work more and are motivated by intrinsic rewards (Morrow, 1983). For this reason, professional commitment, which is an important variable for the school organization, was determined as another variable in this study.

Organizational commitment is one of the most important topics of organizational behavior and organizational psychology. The attitudes and behaviors of employees towards their professions and organizations have been the subject of many studies in the last 50 years. The hypothesis that professional individuals are more committed to their professions rather than their organizations is put forward by many researchers (Çöl, 2004). Blau and Holladay (2006) also state that employees shift their commitment to their profession, which they see as more stable, and that they bring professional commitment to the forefront over other types of commitment. This situation is interpreted as that professional commitment has a meaning above organizational commitment for some employees. Balay (2014), on the other hand, states that professional and organizational commitment are mutually exclusive attitudes and that the norms and values of professional and organizational commitment are fundamentally incompatible. Thornton (1970), on the other hand, states that it is not necessary to sacrifice one of organizational and professional commitment, and that employees can show commitment to both their organizations and their professions at the same time. These different findings regarding these two important variables make the research important.

The basic element of organizational success is qualified manpower. Teachers are expected to be willing to do more than their job descriptions for the effective functioning of the school, whose field of activity is to train and transform people. The manpower that today's organizations should have is employees who are empowered and exhibit OCBs (Camgöz, 2018). Camgöz (2018) states that employees who have an advanced sense of duty, have a culture of cooperation, have expanded their sphere of influence, act as an extra role for the benefit of the organization beyond the expected, are solution-oriented, and can take risks, also ensure success in the education sector. For this reason, it is thought that exhibiting OCBs is important for the school organization. The reasons that push individuals to exhibit OCBs emerge with the shaping of their needs such as belonging, being successful, being useful, being honored, etc. (Kendirligil, 2006). Individuals whose needs are met show more effort to contribute to the collaborative work in the organization (Aydın, 1993).

When the studies on teacher empowerment were examined, the teacher empowerment scale developed by Short and Rinehart (1992) was encountered. The original name of this scale is "School Participants Empowerment Scale". This scale was adapted into Turkish by Mete (2004) as “School Participants Empowerment Scale” and as “School Stakeholders Empowerment Scale” by Baloğlu, Karadağ and Gavuz (2009). In addition, there are studies in which structural empowerment scales and psychological empowerment scales are used separately. Somech (2005) states that considering each form of empowerment separately is insufficient to fully explain the phenomenon of empowerment. In this study, a more comprehensive, up-to-date, local and useful scale with high validity and reliability values related to the empowerment of teachers, developed by Özkan Hıdıroğlu and Tanrıöğen (2020), was used. In addition, Etzioni's (1961) classification of organizational commitment, which is ethical commitment, alienative commitment and calculative commitment, was used in this study, unlike other studies examining the relationship between organizational commitment and OCBs. Although the interest in the subject of professional commitment, which is another variable of the research, has increased recently, there are only a limited number of theses (Zedef, 2017; Uştu, 2014) and articles (Jan & Khan, 2018; Utkan & Kırdök, 2018; Kırdök & Doğanülkü, 2018, Bashir, 2017; Kozikoğlu, 2016; Somech & Bogler, 2002) on this subject. A limited number of studies have been encountered in which teacher empowerment and professional commitment are discussed together (Bogler & Somech, 2004; Wu & Short, 1996). In addition, only one study (Bogler & Somech, 2004) was found in which the relationship between professional commitment and OCBs was examined. The lack of research on these concepts, which are thought to be important from an organizational point of view, draws attention. For these reasons, it is thought that the research will contribute to the literature and that the research findings may have important effects for teachers, principals and therefore all educational organizations.

The main question was developed as follows: “What is the effect of empowering teachers on organizational commitment, professional commitment and organizational citizenship in schools?” In order to answer this question, the following sub-questions were asked:

a) What are the teachers' perceptions of their empowerment, organizational commitment, professional commitment and OCBs?

b) Do teachers' perceptions of their empowerment significantly explain their perceptions of OCBs through organizational commitment and professional commitment?

METHOD

The study, which investigates the effect of teacher empowerment on organizational commitment, professional commitment and OCBs in schools, is in the correlational survey model, which is one of the quantitative researches in this respect. According to Fraenkel and Wallen (2000) and Karasar (2005), the research model that aims to determine the existence and degree of change between variables is the correlational survey model.

POPULATION AND SAMPLE

The population of the research consists of 2276 secondary school teachers working for public schools in Merkezefendi (1159) and Pamukkale (1117) central districts in Denizli province during the 2019-2020 academic year. Due to Covid 19 process, the convenience sampling was used in the research. Convenience sampling is to choose the sample from easily accessible and applicable units due to the limitations in terms of time, money and labor (Büyüköztürk, 2012). The data of the research were collected online only from the volunteer teachers working in public secondary schools in both districts. The number of samples to represent the universe was calculated by taking into consideration the following formula suggested by Şahin (2014).

$$n=\frac{\frac{t^2 \cdot (PQ)}{d^2}}{1+\frac{1}{N}\cdot\frac{t^2\ (PQ)}{d^2}}$$

N= Population size
n= Sample size
d= Degree of freedom
t= The table value of confidence level (t: 1.96)
PQ= (.50).(.50)=.25 Sample percentage for maximum sample size

According to the sample calculation formula, it is considered sufficient to reach a sample group of 329 people for a population of 2276 people. This research was carried out with 473 volunteer teachers. The study was carried out on 441 teachers by not including the forms from different provinces, different school levels, the forms filled by the school principals and the forms filled by associate degree graduates.

The demographic characteristics of the teacher group included in the study are given in Table 1.

Table 1. *The demographic characteristics of the teachers*

Variables		*n*	*%*
Gender	Female	262	%59.4
	Male	179	%40.6
	Total	441	%100
School type	Secondary	413	%93.7
	Primary-Secondary	28	%6.3
	Total	441	%100
Age	20-30	34	%7.7
	31-40	228	%51.7
	41-50	141	%32
	51 and above	38	%8.6
	Total	441	%100
Branch	Sciences	185	%42
	Social	151	%34.2
	Art	25	%5.7
	Spot	26	%5.9
	Foreign Languages	54	%12.2
	Total	441	%100
Seniority	0-5 years	22	%5
	6-10 years	76	%17.2

	11-15 years	127	%28.8
	16-20 years	106	%24
	21 years and above	110	%25
	Total	441	%100
Working duration in the same school	0-2 years	138	%31.3
	3-5 years	123	%27.9
	6 years and above	180	%40.8
	Total	441	%100
Educational Status	Under Graduate	393	%89.1
	Graduate	48	%10.9
	Total	441	%100
Union status	Yes	324	%73.5
	No	117	%26.5
	Total	441	%100
School District	Merkezefendi	250	%56.7
	Pamukkale	191	%43.3
	Total	441	%100

DATA COLLECTION

"*Personal Information Form*", "*Teachers Empowerment Scale*", "*Organizational Commitment Scale*", "*Professional Commitment Scale*" and "*Organizational Citizenship Behaviors Scale*" were used to collect the necessary data for the purpose of the research.

TEACHER EMPOWERMENT SCALE

The "*Teacher Empowerment Scale*" developed by Özkan Hıdıroğlu and Tanrıöğen (2020) was used in the research. The Teacher Empowerment Scale consists of four dimensions and 37 items. The "*Trust*" dimension of the scale consists of 12 items (12,21,22,23,24,25,26,27,28,29,35,37); "*Professional Development*" consists of 11 items (1,2,3,4,5,6,7,8,9,10,11); "*Status*" consists of 8 items (13,14,15,16,17,18,19,20) and "*Cooperation*" consists of 6 items (30,31,32,33,34,36). The Cronbach alpha reliability coefficient of the scale was calculated as 0.97.

ORGANIZATIONAL COMMITMENT SCALE

The "*Organizational Commitment Scale*" developed by Penley and Gould (1988) based on Etzioni's (1961) organizational commitment theory and adapted into Turkish by Ergün (2017) was used in the research. Organizational commitment scale consists of 15 items, three dimensions and five items in each dimension. The dimensions of the scale are moral commitment (items 3,6,9,12,15), alienative commitment (items 2,5,8,11,14), and calculative commitment (items 1,4,7,10,13). The Cronbach alpha reliability coefficients of the scale in Ergün's (2017) study were found to be 0.94 for moral commitment, 0.92 for alienative commitment, and 0.93 for calculative commitment.

In this study, the reliability of the ethical commitment dimension was 0.77, the reliability of the compulsive commitment dimension was 0.78, and the reliability of the calculative commitment dimension was 0.58. Since a total score could not be obtained from the Organizational Commitment Scale, dimensions-based reliability were included instead of total reliability.

PROFESSIONAL COMMITMENT SCALE

"*Teachers' Professional Commitment Scale*" developed by Ergen (2016) was used in the research. The scale consists of 14 items and 3 dimensions. These are "*professional pleasure*" (items 1,2,3,4,5,6), "*social gain*" (items 7,8,9,10,11), "*professional career*" (items 12,13,14) dimensions. The Cronbach's alpha value of the scale was calculated as 0.84. In this study, the reliability of the Professional Commitment Scale was calculated as 0.87.

ORGANIZATIONAL CITIZENSHIP BEHAVIORS SCALE

The "*Organizational Citizenship Behaviors Scale*" developed by Podsakoff, MacKenzie, Moorman, and Fetter (1990) and adapted into Turkish by Polat (2007) was used. The original 5-dimensional scale was collected in 4 dimensions. These dimensions are "*cooperation*" (items 1,2,3,4,5,6,7,8), "*kindness*" (items 9,10,11,12), "*conscientiousness*" (items 13,14,15,16) and "*civil virtue*" (items 17,18,19,20). All of the items in the "*helping*" and "*kindness*" dimensions of the scale were gathered under the dimension of helping each other. The Cronbach Alpha reliability coefficient of the scale was found to be 0.89. In this study, the reliability of the OCBs scale was determined as 0.77.

ANALYSIS OF DATA

Descriptive statistics were used to determine the perception levels of teachers' empowerment, organizational commitment, professional commitment and OCBs. In addition, a mediation analysis was conducted to determine the mediating role of organizational and professional commitment in the relationship between teacher empowerment and OCBs. In mediation analyzes, the indirect relationship between dependent and independent variables in situations where no direct dependent relationship is seen is examined and revealed (Baron & Kenny, 1986). In the research, the mediation effect was tested using the PROCESS macro of SPSS developed by Hayes (2017). Model 4 was applied. With this method, within the scope of the research, the relationship between the independent variable (teacher empowerment), the mediating variables (professional commitment, moral, alienative and calculative commitment) and the dependent variables (OCBs) were examined and the role of the mediating variable was questioned at the last phase.

FINDINGS

FINDINGS AND COMMENTS RELATED TO FIRST SUB-QUESTION

The degree of participation of the teachers to the items in the scale was calculated with the n-1/n formula. Since all scales are in 5-point Likert type, the interval width between 1 and 5 was determined as 0.8 as a result of the calculation. In Table 2., the levels of participation in the scale items, the level of these participation and the arithmetic mean ranges related to this level are given.

Table 2. *Level ranges for scale items*

Teacher Empowerment Scale	*Organizational Commitment Scale*	*Professional Commitment Scale*	*OCBs Scale*	*Level*	*Arithmetic Mean Range*
Strongly Disagree	Never Agree	Never	Strongly disagree	Very Low	1.00-1.80
Disagree	Little Agree	Seldom	Disagree	Low	1.81-2.60
Partially Agree	Moderately Agree	Sometimes	Not Sure	Average	2.61-3.40
Agree	I Agree a lot	Generally	Agree	High	3.41-4.20
Strongly Disagree	Completely Agree	All the time	Completely agree	Very High	4.21-5.00

TEACHERS' PERCEPTION LEVELS ON EMPOWERMENT

In line with Table 2, teachers' participation and empowerment levels were determined. Empowerment levels ranged from high to very high. Data on teacher empowerment and its sub-dimensions are given in Table 3.

Table 3. *Teachers' Perceptions on Teacher Empowerment*

Dimensions	*n*	*x̄*	*df*	*Level of Agreement*	*Degree*
Professional Development		4.22	0.671	Strongly Agree	Very High
Status		3.51	0.822	Agree	High
Trust	441	4.08	0.791	Agree	High
Cooperation		4.06	0.746	Agree	High
Teacher Empowerment		3.99	0.608	Agree	High

When Table 3 is examined, they have a very high (x̄=4.22) perception of teachers' empowerment in the dimension of "*professional development*". On the other hand, it was determined that their perceptions regarding the dimensions of "*status*" (x̄=3.51), "*trust*" (x̄=4.08) and "*cooperation*" (x̄=4.06) were high. According to teacher perceptions, the existing conditions contribute the most to professional development among the dimensions of teacher empowerment, while they contribute the least to the status dimension. Professional development refers to the perception that school provides opportunities for teachers to develop professionally, continue learning, and improve their educational skills during their work at school (Short, 1994). In this respect, it can be said that teachers perceive their schools as supportive of their professional development. Although teachers generally have a high level of perception about their empowerment, it is seen that they have a lower perception of status than other dimensions. In other words, teachers perceive their status as lower than other dimensions.

PERCEPTION LEVELS OF TEACHERS REGARDING THEIR ORGANIZATIONAL COMMITMENT

In accordance with Table 2, teachers' participation and commitment levels were determined. Commitment levels range from very low to high. Since a total score could not be obtained from the scale, only the data for its sub-dimensions are given in Table 4.

Table 4. *Teachers' Perceptions of Organizational Commitment*

Dimensions	*n*	*x̄*	*df*	*Agreement Levels*	*Agreement Degree*
Moral Commitment		3.98	0.730	Strongly Agree	High
Alienative Commitment	441	1.56	0.684	Strongly Disagree	Very Low
Calculative Commitment		3.29	0.734	Moderately Agree	Average

When the means of the data in Table 4 are examined, teachers perceive their "*moral commitment*" (x̄=3.98) as high, their "*calculative commitment*" (x̄=3.29) at medium level and their "*alienative commitment*" (x̄=1.56) at very low level. In other words, according to teachers' perceptions, teachers have a high level of moral commitment, a very low level of alienative commitment, and a medium level of calculative commitment. Organizational values and norms are internalized in moral commitment (Ergün, 2017, Penley & Gould, 1988). So, it can be said that teachers perceive themselves as having adopted the values and norms of the school. Calculative commitment refers to the teacher's development of commitment to the school because it requires the interests of the teacher (Hornung, 2010). Teachers perceive their commitment to the school as medium due to their interests. The least preferred type of commitment in organizations is alienative commitment. Because compulsory commitment can be considered as the lowest form of commitment (Duska, 2008). In alienative commitment, the person does not feel any commitment to the organization and forces himself to stay in the organization (Bayram, 2006). Teachers perceive their alienative commitment as very low. For this reason, it can be said that teachers think that they do not show commitment to their organizations due to obligations.

PERCEPTION LEVELS OF TEACHERS REGARDING THEIR PROFESSIONAL COMMITMENT

Table 2 shows the participation and commitment levels of teachers. Accordingly, teachers' professional commitment levels ranged from high to very high. In this section, data on teachers' professional commitment and its sub-dimensions are given in Table 5.

Table 5. *Teachers' Perceptions of their Professional Commitment*

Dimensions	*n*	*x̄*	*df*	*Agreement Levels*	*Agreement Degree*
Professional Pleasure		4.33	0.651	Always	Very High
Social Gain		3.52	0.776	Mostly	High
Professional Career	441	3.58	0.765	Mostly	High
Professional Commitment		3.88	0.575	Mostly	High

When the means of teachers' perceptions regarding their professional commitment are examined, it is seen that they have a very high perception in the dimensions of "*professional pleasure*" (x̄=4.33) but their perceptions are high regarding following dimensions: "*social gain*" (x̄=3.52) and "*professional career*" (x̄=3.58). Teachers perceive their professional commitment (x̄=3.88) at a high level. Occupational pleasure is expressed as satisfaction with the profession and desired results (Hoy & Tarter, 2011). In line with the above data, teachers stated that their professional satisfaction, in other words, their satisfaction with their profession is at a very high level. When the data were examined, it was determined that teachers perceived their social gain levels, which means their prestige in the society and working conditions, and their professional career levels, which means their success and expertise in the profession, as high. In addition, it was determined that teachers perceived their professional commitment at a high level. When interpreted on the basis of items related to the scale, teachers; It can be said that they love and accept their profession, follow professional developments, contribute to the development of their profession and are proud of being in the profession. When the scale is interpreted on the basis of the items, it can be said that teachers like and accept their profession, follow professional developments, contribute to the development of their profession and are proud of being in the profession.

TEACHERS' PERCEPTION LEVELS OF ORGANIZATIONAL CITIZENSHIP BEHAVIORS

In accordance with Table 2, teachers' levels of participation and OCBs were determined. Accordingly, teachers' perceptions of OCBs range from high to very high. In this section, data on OCBs and dimensions are given in Table 6.

Table 6. *Teachers' Perceptions on OCBs*

Dimensions	*n*	*x̄*	*df*	*Agreement Levels*	*Agreement Degree*
Helping		4.19	0.546	Agree	High
Sportmanship		4.31	0.745	Strongly Agree	Very High
Conscientiousness	441	4.40	0.633	Strongly Agree	Very High
Civic Virtue		3.99	0.652	Agree	High
ÖVD		4.22	0.486	Agree	Very High

When Table 6 is examined, according to teachers' perceptions, while the behaviors of sportmanship (x̄=4.31) and conscientiousness (x̄=4.40) are found at a very high level, the behaviors of (x̄=4.19) and civil virtue (x̄=3.99) are found at high level. Teachers perceive their OCBs as very high (x̄=4.22). While the organizational citizenship behavior perceived by the teachers at the highest level is conscientiousness (x̄=4.40), the organizational citizenship behavior perceived at the lowest level is civil virtue (x̄=3.99).

Teachers have a very high level of perception of conscientiousness, which means their willingness to behave beyond what is expected of them, and of sportmanship, which is defined as avoiding negative behaviors that will cause tension in the school, and expressing positive behaviors related to the school despite the negativities (Organ, 1990). Teachers have high-level perceptions of helping, which means voluntary behaviors to help other employees in tasks and problems related to their schools, and civic virtue, which means collecting information about what is happening in their schools and participating in the political life of their schools as responsible and constructive individuals. In other words, teachers perceive themselves as helpful, responsible and constructive individuals in school-related work. In addition, teachers perceive that they exhibit organizational citizenship behavior at a very high level. In other words, it can be said that teachers think that they exhibit roles and behaviors in line with the goals and needs of the school.

FINDINGS REGARDING THE SECOND SUB-QUESTION

The second sub-problem of the study was formed as "*Does teachers' perceptions of their empowerment significantly explain their perceptions of organizational citizenship behaviors through organizational commitment and professional commitment?*". In order to find an answer to this sub-problem, first of all, the data related to the measurement model were examined. According to Jöreskog (1973), structural equation models consist of two parts. The first of these is the "measurement model", which is applied by connecting the observed variables to the latent variables with confirmatory factor analysis, and the second is the "*structural model*", which is applied by connecting the latent variables to each other with simultaneous equation systems. The measurement model forms the beginning of the structural equation model analysis. Model parameters were calculated from the available data (χ^2=321.65; df=69; χ^2/df=4.66, RMSEA=0.091). Despite the modifications, the model could not be provided as a measurement model and structural relations could not be established. Instead, the PROCESS macro for SPSS developed by Hayes (2017) was used to test the mediation effect of the associated norms and the mediation effect was examined with the regression model.

For the second sub-problem, it was examined whether the variables of moral, alienative, calculative commitment and professional commitment have a mediating effect together in the multiple mediation model established between the independent variable of teacher empowerment and the dependent variable of OCBs. The bootstrap method was used in the mediation analysis and the coefficients related to the direct and total effect obtained as a result of the analysis are given in Table 7.

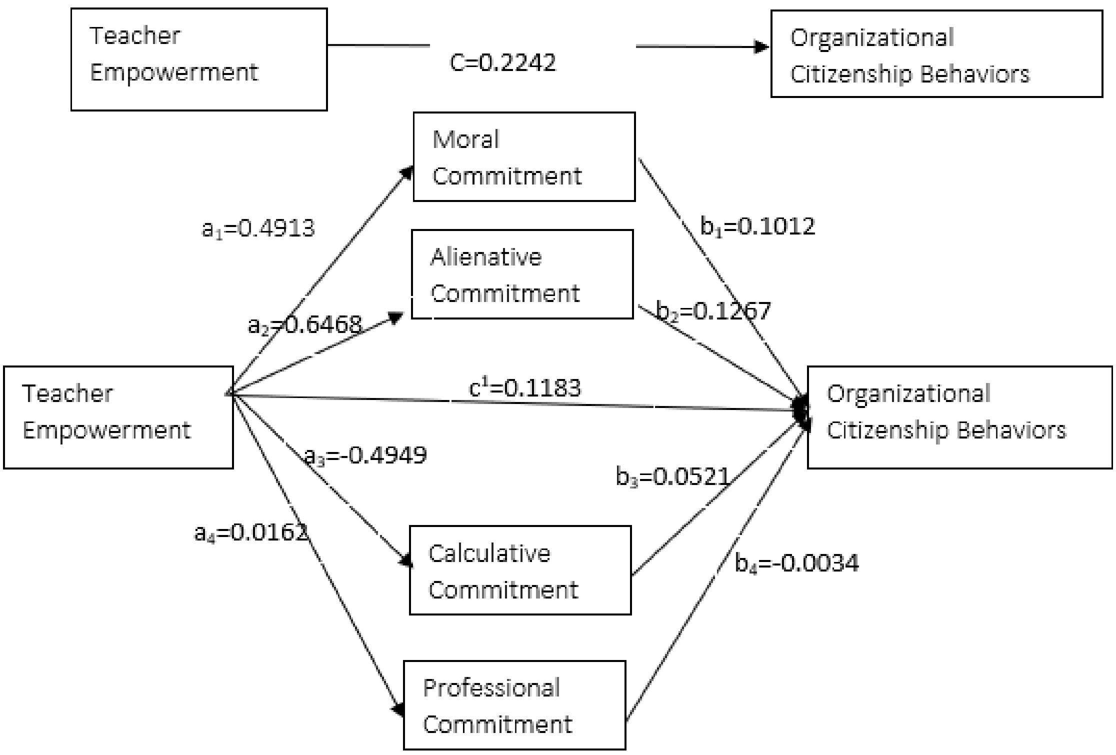
Table 7. *Multiple Mediation Model Impact Coefficients*

Parameter	*B*	*SH_B*	*t*	*p*
a_1	.4913	.0386	12.7408	.0000
a_2	.6468	.0483	13.3940	.0000
a_3	-.4949	.0482	-10.2640	.0000
a_4	.0162	.0576	.2811	.7788
b_1	.1012	.0326	3.1072	.0020
b_2	.1267	.0278	4.5616	.0000
b_3	.0521	.0262	1.9782	.0485
b_4	-.0034	.0211	-.1619	.8715
c	.2242	.0257	8.7413	.0000
c'	.1183	.0315	3.7536	.0002

Parameters a_1, a_2, a_3 and a_4 indicated in Table 7 are non-standardized regression coefficients representing the effect between the teacher empowerment independent variable and the mediator variables of professional commitment, moral, alienative and calculative commitment, respectively. The b_1, b_2, b_3 and b_4 parameters are non-standardized regression coefficients representing the effect between the variables of professional commitment, moral, alienative and calculative commitment, and OCBs, respectively. According to the findings presented in Table 7, there is a positive and significant relationship between teacher empowerment and OCBs (c=0.2242; t=8.7413; p=0.0000). A single-unit increase in teacher empowerment causes an increase of 0.2242 units in organizational citizenship behavior scores. There is a positive correlation between teacher empowerment and professional commitment (a_1=0.4913; t=12.7408; p=0.0000), teacher empowerment and moral commitment (a_2=0.6468; t=13.3940; p=0.0000). there are significant negative correlations between teacher empowerment and alienative commitment (a_3=-0.4949; t=-10.2640; p=0.0000). There was no significant relationship between teacher empowerment and calculative commitment (a_4=0.0162; t=0.2811; p=0.7788). When the effects of mediator variables on dependent variables are examined, there is a difference between professional commitment and OCBs (b_1=0.1012; t=3.1072; p=0.0020), between moral commitment and OCBs (b_2=0.1267; t=4, 5616; p=0.0000), there are positive significant relationships between alienative commitment and OCBs (b_3=0.0521; t=1.9782; p=0.0485). There is no significant relationship between calculative commitment and OCBs (b_4=-0.0034; t=-0.1619; p=0.8715). A single-unit increase in professional commitment leads to a 0.1012-unit increase in organizational citizenship behavior scores; one unit increase in moral commitment leads to an increase of 0.1267 units in organizational citizenship behavior scores; A one-unit increase in alienative commitment scores causes an increase of 0.0521 units in organizational citizenship behavior scores. There is no significant relationship between calculative commitment and OCBs (b_4=-0.0034; t=-0.1619; p=0.8715). A single-unit increase in professional commitment causes an increase of 0.1012 units in OCBs scores, a single-unit increase in moral commitment causes an increase of 0.1267 units in OCBs scores, and a single-unit increase in alienative commitment scores causes an increase of 0.0521 units in OCBs scores.

In the multiple mediation model established between teacher empowerment independent variable and OCBs dependent variable, the effect coefficients were calculated as follows: a_1=0.4913, a_2=0.6468, a_3=-0.4949, a_4=0.0162 and b_1=0.1012, b_2=0 .1267, b_3=0.0521, b_4=-0.0034. In Figure 1, the model for the mediation effect of professional commitment, moral commitment, alienative commitment and calculative commitment variables between teacher empowerment and OCBs and the effect coefficients in this model are presented.

Figure 1. *Model of Mediation Effect and Effect Coefficients*



When the coefficient c(c=0.2242), which represents the total effect between teacher empowerment and OCBs, and c'(0.1183), which represents the direct effect between these two variables, is compared, it is seen that teacher empowerment has a decrease in the predictive power of OCBs under the influence of mediator variables. This decrease in the mediator variable effect means that there is partial mediation (Baron & Kenny, 1986). After determining the direct and total effects, the indirect effects between the variables were determined. Confidence intervals for the significance of indirect effects with 95% accuracy were examined with 5000 bootstrap samples. Related findings are listed in Table 8.

Table 8. *Multiple Mediation Model Indirect Effect Coefficients*

			95% Confidence Interval	
Parameter	*Effect*	*SH_B*	*Lower*	*Upper*
$\sum ab$	.1059	.0254	.0564	.1535
a_1b_1	.0497	.0204	.0072	.0894
a_2b_2	.0820	.0217	.0401	.1267
a_3b_3	-.0256	.0163	-.0610	.0045
a_4b_4	-.0001	.0014	-.0034	.0030

When the confidence intervals and indirect effects in Table 8 are examined, it is seen that the mediation effects of the variables of professional commitment and moral commitment between teacher empowerment and OCBs are confirmed. This is because the confidence interval for the indirect effect of a_1b_1 with 95% accuracy does not include 0 (a_1b_1=0.0497; C^I=[0.0072-0.0894]; a_2b_2=0.0820; C^I=[0.0401-0.1267])). It is seen that the confidence interval for the alienative and calculative commitment variables includes 0 (a_3b_3=-0.0256; C^I=[-0.0610-0.0045]; a_2b_2=-0.0001; C^I=[-0.0034-0.0030]. This is interpreted as coercive and calculative commitment does not have a significant mediating effect between teacher empowerment and OCBs. The confidence interval for the total indirect effect also does not include 0 ($\sum ab$=0.1059; C^I=[0.0564-0.1535). This shows that the variables of professional commitment and moral commitment have a significant mediating effect between teacher empowerment and OCBs (Jose, 2013; MacKinnon, 2008).

Effect size values were obtained according to the ratio-proportion approach regarding the mediation effect of the variables of "*professional commitment*", "*moral commitment*", "*alienative commitment*" and "*calculative commitment*" within the scope of OCBs. Accordingly, the mediation effect size values obtained by the ratio of the indirect effect to the total effect (ab/c) are 0.2217 for the "*professional commitment*" variable and 0.3657 for the "*moral commitment*". On the other hand, “*alienative*” and “*calculative commitment*” do not have a significant mediating effect. These rates show that 22% of the total effect of teacher empowerment on OCBs is explained by the "*professional commitment*" variable, and 37% by the indirect effect created by "*moral commitment*". As a result, as teachers' perceptions of their empowerment increase, OCBs also increase, and 59% of this increase is explained by the positive effect of teacher empowerment on OCBs.

DISCUSSION, CONCLUSION AND IMPLICATIONS

THE RESULTS OF DESCRIPTIVE ANALYSIS AND DISCUSSION

Teachers perceive their level of empowerment as high. When the literature is examined, different results are encountered in the perceptions of teachers regarding their empowerment. Similar to this research, Cheasakul and Varma (2016), Ganiban, Belencia, and Ocampo (2019), Mehmet and Yılmaz (2017), Odabaş (2014), Tindowen (2019) determined that they perceive teachers' empowerment levels to be high. On the other hand, Marks and Louis (1999) determined that teachers perceive the level of empowerment as moderate, Squire Kelly (2012) at low level, and Al-Yaseen and Al-Musaileem (2013) as very low level.

The empowerment of teachers in schools are being achieved by school administrators delegate their authority to teachers, involve teachers in their decisions, create “*awareness of us*” in schools, communicate by spending time together in different parts of the school including canteen, garden, teachers' room, cafeteria and classrooms, encourage teachers for professional and personal development and taking into account the special situations of teachers in their curriculum preparations and shifts (Kıral, 2019). Within the scope of this study, teacher empowerment is carried out by increasing their professional development, ensuring their confidence in their schools, and increasing their status and cooperative behaviors. Employees with high perceptions of empowerment are more willing to achieve organizational goals and have the belief that ensuring the efficiency of the organization is effective in meeting their personal needs (İhtiyaroğlu, 2017). An important reason for the growth of developed countries is education investments made in human capital (Tunç, 1993). Investments made in education by empowering teachers will enable teachers to be more productive and productive, both themselves and the individuals they are in contact with; high productivity means higher profit (Üstün, 2006). Developments in information processing technology, increase in competition, increase in the level of education and expectations of individuals in the society, and the formation of a globalizing and constantly changing external environment make it important for teachers to be empowered and to perceive themselves as empowered.

In this study, teachers' perceptions towards their organizational commitment were examined. According to teachers' perceptions, teachers have a high level of moral commitment, a very low level of alienative commitment, and a medium level of calculative commitment. Unlike the results of this study, Ergün (2017) found the moral commitment of teachers at a moderate level, while they found their alienative and calculative commitment at a below-moderate level. Similarly, Uludağ Kodal (2019) determined teachers' commitment levels as "*moral commitment*", "*calculative commitment*" and "*alienative commitment*", from high to low respectively. Yavuzkılıç (2019), on the other hand, determined the moral and calculative commitment of teachers at a very high level, while she determined their alienative commitment at a very low level. Alienative commitment dimension has the lowest average among organizational commitment dimensions. In this direction, it can be said that teachers show loyalty to their schools according to their own wishes, not because they have to work. In this study, it was revealed that teachers had the highest moral commitment. This is a desirable situation for the school organization. Because, high moral commitment shows that employees develop a sense of belongingness to their institutions, internalize their sense of duty at school, and thus embrace their institutions. The content of moral commitment parallels the "*Creation of Shared Vision"* in Senge's Fifth Disciplin laws. The law of "*creating shared vision*" is that people should strive to gather around a common sense of identity and togetherness without being under pressure, and show all their talents sincerely in order to ensure that the organization achieves its goals. The research also reveals that teachers have a moderate level of calculative commitment. The reasons for their calculative commitment to their school may be the financial losses they will face if they leave their school and the responsibilities they feel towards the institution they work for. Teachers stay in their institutions and earn salary, health insurance, retirement, etc. and their desire to stay in their institutions may stem from these reasons.

When the perceptions of teachers regarding their professional commitment are examined, teachers perceive their professional commitment as high. In this case, it can be said that teachers love their profession. In different studies, it has been determined that teachers' professional commitment is at different levels. For example, Bogler and Nir (2014), Khan and Hussain (2014), Ergen (2016), Sorensen and McKim (2014) and Tindowen (2019) have high professional commitment, Çalık (2019), Soon and Anand (2010) medium, Blau (1985), Uştu and Tümkaya (2017) determined it as low. Professional commitment of teachers is one of the most important factors for the success of education and schools. In addition, less professional commitment has an impact on the effectiveness of schools, causing teachers to decrease their professional performance or leave the profession in extreme cases (Shukla, 2018).

When teachers' perceptions of OCBs were examined, it was determined that teachers generally perceived their OCBs as very high. Studies have shown that teachers' OCBs are generally "*very high*" (Alğan, 2011; Karakuş, 2008; Köprülü, 2011) and "*high*" levels (Baş & Şentürk, 2011; Coşkun & İsmailoğlu, 2020; Çevik & Can, 2020; Koşar & Yalçınkaya, 2013); Polat, 2007; Somech & Ron, 2007; Sönmez & Cemaloğlu, 2017). This situation indicates that teachers are willing to work voluntarily in their schools; show that they exhibit OCBs such as helping, conscientiousness, sportsmanship and civic virtue (Çetin, Korkmaz, & Çakmakçı, 2012). There is a direct relationship between teachers' OCBs and student achievement (DiPaola & Tschannen-Moran, 2001, Somech & Ron, 2007). In other words, the success of schools depends on teachers' willingness to do what needs to be done beyond their duties in order to achieve the goals of the organization (Somech & Ron, 2007). For this reason, it is important for teachers to make extra contributions to their schools in order for the school to reach its goals effectively (Sezgin & Kılınç, 2008).

THE RESULTS OF MEDIATION EFFECT AND DISCUSSION

Teacher empowerment, professional commitment, moral, alienative and calculative commitment variables were discussed in the research conducted to determine the factors that directly or indirectly affect OCBs according to teachers' perceptions. Direct and indirect effects were determined by performing mediation analyzes for multi-mediation models and multi-level mediation models.

In the multi-mediation model, in which the effect of teacher empowerment on OCBs is examined through the dimensions of professional commitment and organizational commitment, it is revealed that the variables of professional commitment and moral commitment have a significant mediating effect between teacher empowerment and OCBs, and this mediation effect has a partial mediation effect. In other words, professional commitment and moral commitment have a partial mediating effect in the relationship between teacher empowerment and OCBs. Alienative and calculative commitment does not show a significant mediating effect between teacher empowerment and OCBs.

Teacher empowerment positively affects OCBs both directly and indirectly. This situation is in parallel with other studies in the literature (Bogler & Somech, 2004; Herawaty et al., 2019; Wall and Rinehart, 1998; Tindowen, 2019). In this direction, it can be said that as teachers become stronger and feel stronger, they help their colleagues with their work problems, show them realistic courtesy, and share their work resources (technology, materials, equipment, etc.) with their colleagues. In addition, it can be stated that strong teachers support the social image of the organization, think beyond the job requirements, think about the future of the organization, protect the organization from possible problems, adapt more quickly to new developments in the organization, and cooperate and help their organization.

The increase in teachers' professional and organizational commitment, especially moral commitment, also increases their OCBs. This situation shows parallelism with other studies in the literature. Although Etzioni's organizational commitment classification was not used in these studies, they contain similar dimensions that mean adopting organizational values, which include the meaning of moral commitment, working for the benefit of the organization, being proud of being a member of the organization, etc. Atakan Duman, Paşamehmetoğlu and Poyraz (2013); Çelik and Üstüner (2020); Cetin (2011); Mogotsi, Boon and Fletcher (2011); Ozcan (2008); Özdem (2012) and Yılmaz and Bökeoğlu (2008) state that there are positive and significant relationships between teachers' organizational commitment and OCBs. Demirel and Aslan (2008), Cohen (2006), Dennis and Katherine (2006), Özdem (2012) determined positive significant relationships between professional commitment and OCBs.

In this study, as teachers' empowerment increased, OCBs also increased, and 59% of this increase was explained by the positive effects of professional commitment and moral commitment on OCBs. Özdem (2012), who examined the relationship between organizational commitment, professional commitment and organizational citizenship, determined that professional commitment and organizational commitment together explained 26% of OCBs. He determined that only professional commitment explains 33% of organizational citizenship and only organizational commitment explains 9% of organizational citizenship (Özdem, 2012). According to the standardized regression (beta) coefficient, the relative importance of the predictive variables related to OCBs was revealed as professional commitment and organizational commitment (Özdem, 2012). According to the literature, it can be suggested that measures should be taken in schools to increase teachers' professional commitment, organizational commitment and their moral commitment, which is one of the organizational commitment types.

SUGGESTIONS

SUGGESTIONS FOR RESEARCHERS

In this study, organizational and professional commitment, which are types of commitment, are discussed. By considering other types of commitment, their relationship with teacher empowerment can be revealed. This study is limited to the central districts of Denizli in the sample of Turkey. Studies can be carried out in different countries and cultures and the results can be discussed. In addition, this study was carried out with teachers working in secondary schools. The study can be repeated with teachers working at different teaching levels. In this study, no distinction was made between individual and team empowerment in the concept of teacher empowerment. In future studies, the effects of teacher empowerment on other variables can be investigated in line with this distinction.

SUGGESTIONS FOR PRACTITIONERS

One of the most important roles in empowering teachers belongs to school administrators. School administrators can ensure teachers' empowerment by using their power resources correctly and effectively. With the empowerment of teachers, it is possible for teachers to be more prone to extra-role behaviors (Altınkurt et al., 2016). For this reason, school administrators need to use their managerial and leadership skills more effectively. Schools can be served by developing a detailed repertoire of empowerment practices. In order for teachers to increase both their professional commitment and moral commitment, needs analyzes can be made and various applications can be made and trainings can be given in this direction. In addition, longitudinal survey studies can be carried out in order to monitor the change in teachers' perceptions of their empowerment, organizational commitment, professional commitment and OCBs.

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The Association of Career Talent Self-Efficacy, Positive Future Expectations and Personal Growth Initiative

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Abstract

In this study, the association between positive future expectation and personal growth initiative as predictors of career and talent development self-efficacy is examined. Convenience sampling method was used for sampling and the research sample consisted of 419 voluntary students. Career and Talent Development Self-Efficacy Scale, Positive Future Expectations Inventory, Personal Growth Initiative Scale were used as data collection instruments. The predictive relationship between the variables was examined by multiple linear regression analysis. According to the results of the analysis, there were significant and positive relationships between career and talent development self-efficacy, positive future expectation and personal growth initiative. Positive future prospects and personal growth initiative explain 32% of career and talent development self-efficacy.

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INTRODUCTION

College students have many developmental tasks to deal with. One of the most important of these is to deal with problems related to career development (Gizir, 2005). In studies examining the psychological counseling needs of university students, it has been determined that the area in which students need help the most is related to career development (Doyle, 2011; Hinkelman & Luzzo, 2007; Yerin Güneri, & Çapa Aydın, 2010; Yılmaz & Gündüz, 2018). According to higher education statistics for the 2020-2021 academic year announced by the Council of Higher Education (YÖK), the total number of students enrolled in universities in Turkey is 8 million 240 thousand 997. In Turkey, with a total population of around 83 million 614 thousand, 9.85 out of every 100 people are university students. The data shows that the number of university students is increasing every year (YÖK, 2021).

Herr and Cramer (1988) define career development as the development of a career pattern, the decision to pursue a career, and the integration of career-related life roles, and define it as a lifelong process that involves processes such as uncovering individual differences, interests, talents, and values. It lasts for a long time and is subject to change throughout the process (Yeşilyaprak, 2011). Considering the fact that career development is a very important part of life and career development has far-reaching effects, it is important to understand and support the career development of university students. Career and talent self-efficacy is one of the key components of individuals' career planning and development (Gushue & Whitson, 2006).

Self-efficacy is a person's belief that he or she is capable of completing a task and achieving the desired outcome (Bandura, 1986). Self-efficacy beliefs are an effective factor in determining how much effort an individual will exert in a given situation. Clearly, this level of effort can be quite crucial to the events in an individual's life. One can speak of both "general competence beliefs" and "field-specific competence beliefs" (Schwarzer, 1994). Coping self-efficacy (CSE) is a field-specific competence belief and a particular form of self-efficacy, which is considered to be the belief in a person's ability to cope with life's threats (Chesney et al., 2006). Therefore, CSE plays a fundamental role when people face stressful events in their lives. Since the future is inherently full of unknown components, future expectations could be influenced by individuals' CSE beliefs.

Hackett and Betz (1981) presented the concept of career and talent self-efficacy based on the concept of self-efficacy. Career and talent self-efficacy, which is a field-specific competence belief, refers to the degree to which individuals feel competent and comfortable about their career plans. This level is a very important factor in determining career choice, academic achievement, and motivation for these preferences, as well as the career field pursued. Yuen et al. (2010) explain career and talent development as an approach that helps students strengthen and use their skills to prepare for the necessary technical skills needed to work in a particular field. Self-efficacy in career and talent development has three factors. These include abilities that are critical for (1) developing one's talents (2) acquiring and applying positive work habits, and (3) exploring career opportunities. Personal talent development is about students' ability to develop their skills to the fullest. Acquiring positive work habits and values, such as working consistently without supervision, taking full responsibility for studies, time management, and peer support when needed, is important. Career exploration involves the proactive ability to discover alternative career paths and make new plans and decisions based on one's qualifications (Yuen et al., 2010).

Personal growth is a process in which individuals understand themselves and gain awareness, and this experience leads to a change in the individual's feelings, beliefs, attitudes, and behaviors (Wright et al., 2006). Personal growth initiative is defined as active and engaged participation in the process of seeking to gain a metacognitive structure as a guide for purposeful participation (Martin, 2009; Ryff & Keyes, 1995). Personal growth initiative has two main components: cognitive and behavioral (Robitschek, 2003). A person with high personal growth initiative may choose to learn from experiences about stressful life and overcome problems by striving to change. A person with low personal growth initiative may not strive to improve perceived self-awareness, but instead may want to return to basic emotional levels that make it easier to feel better (Martin, 2009). At this point, personal growth initiative may be an important element related to career and talent self-efficacy.

Individuals' future expectations can be either positive or negative (Scheirer & Carver, 1985). Individuals with a positive future orientation are quite optimistic and look to the future with hope. From this point of view, individuals with a positive future orientation make efforts to achieve their future goals compared to individuals with a negative orientation (MacLeod & Byrne, 1996). Parents and other family members influence young people's future expectations by acting as role models, directly communicating their expectations, and establishing criteria for success (McCabe & Barnett, 2000). In addition, teachers and peers are among the important factors that shape young people's future expectations (Givvin, 2001). Consequently, adults' values about life in general affect young people and they take adults' values as a model when setting their goals (Giyvin, 2001). McCabe and Barnett (2000) indicate that the most important expectation of young people for the future is to have a good job and career. In this sense, future expectations are closely related to young people's self-efficacy in terms of career and talent.

The role of self-efficacy in career and talent has not been adequately addressed in the literature. In this regard, high career self-efficacy is related to high self-determined motivation and satisfaction with the field of study among students (Komarraju, Swanson, & Nadler, 2014). Self-efficacy in career decisions has been reported to be related to career adaptability (Hou, Wu, & Liu, 2014), gender and ethnic differences (Chung, 2002), career adjustment (Betz & Luzzo, 1996), career exploration behavior (Blustein, 1989), and several psychological variables such as internal locus of control beliefs (Taylor & Popma, 1990) and global self-esteem (Betz & Klein, 1996). Self-efficacy beliefs are the best predictor of career indecision and emotional difficulties are predictors of career decision making (Saka, Gati, & Kelly, 2008). From these perspectives, the present study seeks to understand the career and talent development efficacy of college students using coping self-efficacy and positive future expectations. Therefore, the association between positive future expectation and personal growth initiative as predictors of career and talent development self-efficacy is examined in the current study. Research’s question is as presented:

(1) Are positive future expectations level and personal growth initiative level of the university students significant predictors of career and talent development self-efficacy?

METHOD

RESEARCH DESIGN

This research is a correlational design model, which is one of the quantitative research methods.

SAMPLE

The sample was drawn by using convenience sampling method and consisted of 419 volunteer students from the Faculty of Education at Muğla Sıtkı Koçman University, Turkey. The participants were randomly selected among the fourth-grade students and the students of the pedagogical training program. This is because they are about to make a career decision. 270 (64.6%) of the participants were female and 148 (35.4%) were male and their ages ranged from 20 to 29 years (Mean: 22.88, Sd: 1.42).

DATA COLLECTION

CAREER AND TALENT DEVELOPMENT SELF-EFFICACY SCALE (CTD-SES)

The scale was developed by Yuen et al. (2010) and adapted for Turkish population by Turan, Çelik, and İskender (2015). CTD-SES has 18 items rated and it is a 6-point scale. It has three subscales: talent development self-efficacy, habits and values self-efficacy, and career exploration self-efficacy.

Cronbach's Alpha reliability and split-half reliability is reported as being good enough. Confirmatory factor analysis is examined with chi-square ($\chi 2$ = 719.30, Sd = 130, p = .00) and fit indices shows good fit. As a result, the factor structure of the scale in the Turkish form has a good fit as in the original factor structure. The internal consistency reliability of the scale is .92. In addition, the split-half reliability is .86. Furthermore, the corrected item-total correlations ranged from .49 to .67.

POSITIVE FUTURE EXPECTATIONS INVENTORY (PFEI)

This scale measures positive expectations about individuals' personal future. PFEI was developed by İmamoğlu (2001). PFEI is a five-item Likert-type scale and items are scored between 1 (do not agree at all) and 5 (completely agree). There are no reverse items in the scale. The Cronbach's alpha of the PFEI was .85 and test retest reliability is .72. Higher scores obtained from the inventory indicate higher expectation of a positive future.

PERSONAL GROWTH INITIATIVE SCALE (PGIS)

PGSI is developed by Akın and Anlı (2011). The sample of research consists of 336 high school students. Exploratory factor analysis results present a 9 items loaded one factor structure. The total variance is 37% and factor loadings are between .48 to .70. The model shows good fit as fit (RMSEA=.055, NFI=.96, CFI=.98, IFI=.98, GFI=.97, AGFI=.94). For concurrent validity the correlations between PGIS and Self-Compassion Scale were calculated and there is a positive relationship between the variables. The internal consistency reliability coefficient is of the scale is .90 and the test-retest reliability coefficient is .94.

DATA ANALYSIS

In the study, data data were collected from participants during lecture time at the university by obtaining permission from the instructor. During data collection, consent was obtained from the participants on the principle of voluntariness. Information about the purpose of the study was first given, and then scales were provided to participants who wished to participate in the study. When necessary, additional explanations were provided to participants. The application of the measurement instruments took between 35-40 minutes.

The data were analyzed with the SPSS 23 package program. The predictive relationship between the variables was examined by multiple linear regression analysis. While analyzing the data in the research, the items that should be reverse coded first were reverse coded. Then, the total scores were calculated and converted to standard z-scores and outliers in the data set were removed.

FINDINGS

Descriptive statistics data including N, mean, median and df are given in Table 1. There are no extreme deviations between the measures of central tendency, and the kurtosis and skewness values are in the range of [-1, +1]. According to these results, it can be said that the data are normally distributed.

Table 1. *Descriptive Statistics of the Variables*

	Career and Talent Development Self-Efficacy	*Positive Future Expectations*	*Personal Growth Initiative*
N	418	418	418
Mean	88.6	17.5	40.5
Median	90.0	18.0	41
Sd	12.9	2.47	7.33

According to Table 1, participants' mean of the career and talent development self-efficacy level is 88.6 (Sd = 12.9); positive future expectations level is 17.5 (Sd = 2.47); personal growth initiative level is 40.5 (Sd = 7.33).

Correlations between all the variables are presented in Table 2.

Table 2. *Correlations Between the Variables*

	1	*2*	*3*
Career and Talent Development Self-Efficacy	1	.38*	.42*
Personal Growth Initiative		1	.36*
Positive Future Expectations			1

*p< 0.001

According to Table 2, in order for the regression analysis to give accurate results, it is expected that the variables do not have a high correlation (multi-collinearity) among themselves. In order to examine this situation, VIF and tolerance values were calculated. Since VIF values are less than 10 (1.40) and tolerance values are greater than 0.2 (.71), it can be said that there is no multicollinearity. Correlations between the variables are meaningful and in the positive directions as presented in Table 2.

Multiple regression analysis was conducted to determine the variables that predicted career and talent development self-efficacy. Regression analysis results are given in Table 3.

Table 3. *Regression Analysis*

Variables	*B*	*SE*	*Beta*	*T*	*p*
Intercept	39.63	4.29		9.23	.00*
Personal growth initiative	.46	.08	.26	5.73	.00*
Positive future expectations	1.73	.23	.33	7.27	.00*

R= 0.49, R^2=0.24

$F_{(2-415)}$= 66.82, *p < .001

As can be seen in Table 3, personal growth initiative and positive future expectations explain about 24% of the total variance for career and talent development self-efficacy (R= 0.49, R^2=0.24). According to the standardized regression coefficients, the order of importance of the predictor variables on career and talent development self-efficacy are positive future expectations and personal growth initiative (F(2-415)= 66.82, p<.001). According to the t-test results regarding the significance of the regression coefficients, positive future expectations and personal growth initiative variables are a significant predictor of career and talent development self-efficacy.

DISCUSSION, CONCLUSION AND IMPLICATIONS

This study examined the relationship between career and talent development self-efficacy, positive future expectations, and personal growth initiative. Regression analysis revealed that positive future expectations and personal growth initiatives predicted 24% of self-efficacy in career and talent development.

One of the variables contributing to the regression analysis is positive future expectation. Positive future expectation significantly predicted career and talent development self-efficacy. This result is consistent with some previous studies. As MacLeod and Byrne (1996) found, individuals with positive future expectations are more motivated to invest in their career goals. McCabe and Barnett (2000) state that the most important expectation young people have for the future is to have a good job and career. Individuals who have a more positive outlook on the future feel more confident in making their future career plans. Therefore, the new steps they take towards their career will contribute to their self-efficacy about their career and talents.

Another variable contributing to the regression analysis is personal growth initiative. Personal growth initiative significantly predicted career and talent development self-efficacy. This result is consistent with some previous studies. According to Martin (2009), commitment to career development problems may decrease when the level of personal growth initiative is low. Although there are notable studies predicting the relationships between career self-efficacy and career adaptability (Hou et al., 2014), career self-efficacy and gender and ethnic differences (Chung, 2002), career self-efficacy and career adaptation (Betz & Luzzo, 1996), career self-efficacy and career exploration behavior (Blustein, 1989; Gushue & Withson, 2006; Makki, Salleh, Memon, & Harun, 2015), career self-efficacy and various psychological variables such as internal locus of control (Taylor & Popma, 1990). There are not many studies that examine the relationships between personal growth and self-efficacy in career and talent development. The finding of this study is that personal growth initiative significantly predicts self-efficacy in career and talent development. Personal growth initiative is an active participation in the process of striving for gain. It is therefore logical that individuals who have high levels of personal growth initiative are more likely to feel effective in terms of their careers.

As an implication of this study, it will be meaningful to develop policies to support the personal growth of individuals in social and educational environments. Thus, the career choices of individuals will be stronger. In the long run, this power will increase the number of professionals in business life who can demonstrate their potential. As an another implication of the study, positive future expectations is a meaningful factor on career and talent self-efficacy. Positive future expectations are influenced by social and individual-level situations (Stoddard & Pierce, 2015). On the one hand, community-oriented resources are need to be developed. Ensuring better social conditions is essential for young people to develop positive future expectations. Individuals, with increased positive expectations for the future, can reveal their potential in their career development at a high level. On the other hand, individual-oriented resources must be supported by developing all life skills of young people starting with their first childhood years. Expanding the goals in the field of personal development in the guidance programs of the schools and strengthening the practices of guidance programs will provide support to individuals in this sense.

This study has some limitations. First, it discusses two of the variables that are predictors of career and talent development self-efficacy. However, the reasons for this predictive relationship are not known. Therefore, studies could be designed to causally examine career and talent development efficacy. In addition, longitudinal studies are believed to be highly effective in understanding how career and talent development effectiveness evolves. Longitudinal studies can provide clarity on how career and talent development effectiveness evolves over the course of development. The second limitation of the study is that the participants were only university students. However, career development can be completely different for individuals with different levels of education. In future studies, it may be more helpful for understanding career and talent self-efficacy to reach out to individuals with different levels of education as well as individuals who are not in education.

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Analysis of the Effect of Mind Mapping Studies on the Acquisition of the Concept of Time Among 60-72 Month-Old Children

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Abstract

This study aims to analyze the effect of mind mapping studies on the acquisition of the concept of time among 60-72 month-old children. The research was conducted with 30 children who attend a preschool in Istanbul. The Mind Mapping: Concept of Time Program was applied to 15 children in the experimental group of the study, for 12 weeks. Pre-test and post-test data for the study were gathered through the Time Concept Achievement Assessment Scale. It was found that the total post-test scores of the children in the experimental group obtained using the scale and their total post-test scores obtained from the Sub-Scales of Before-Now-After, Morning-Noon-Evening-Night, Month, Year, and Time Indicator Tools were significantly higher than those of the children in the control group. As a result of the study, it was set forth that mind mapping studies are an effective strategy for children's acquisition of the concept of time.

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INTRODUCTION

The acquisition of concepts, which are the basis of thinking and learning, begins in the first years of life and continues intensively in the preschool period (Gelman, Coley & Gottfried, 1994). Time is one of the concepts that young children cannot comprehend easily due to its abstract structure and is learned through experiences which progress from simple to complex phases. Although understanding time is an innate social skill (Kol, 2010), the maturity of the concept of time is not fully realized until adulthood (Naylor & Diem, 1987).

Studies indicate that children under 3 years old have a primitive sense of time. Babies can learn the time intervals of two events, distinguish different periods related to events and form habits (Droit-Volet, Delgado & Rattat, 2006; Droit-Volet, 2011; Droit-Volet, 2013; Provasi, Rattat & Droit-Velet, 2011). As children grow up, their responsiveness towards time increases. Freidman (1990) demonstrated that three-year-old children are successful in comparing the period of daily activities by marking a scale which extends from a very short time to a very long time. In addition, children under the age of four know that the terms of the concept of time have a common category in the dictionary. Even though children gave wrong answers to the question "How long did an event last?", they responded by using appropriate terms of time (Shatz, Tare, Nguyen & Young, 2010). Children begin to adjust their behaviors according to time between the ages of four and six years old (Pouthas, Droit & Jacquet, 1993). Children at these ages become increasingly familiar with patterns relating to time. They can list seasons or basic daily activities in the proper way. Children at the age of seven and eight learn to list the days of the week or months of the year and start to get to know the weekly or yearly school routines as well as the daily ones (Freidman, 1990).

For children, the concept of time is shaped by personal experiences, social events and cultural terms. Personal experiences cover past, present and future. Children reveal their perception of time in their personal experiences with phrases such as "last night", "when I was younger" and "when I grow up" (Charlesworth & Lind, 2010). Being able to correlate the events in the past, in the present and in the future allows for the development of a consistent sense of self among children as well as helping them to interpret the concept of time (Michon & Jackson, 1985). With respect to social events, the concept of time is shaped within the daily order and routine. For example, children who come to school first take off their coats and hang them up, greet their teacher and then go to the activity center. They are inclined to behave in line with this layout and routine. However, the learning and interpreting of time with regard to social events require experience for children. On the other hand, cultural terms are represented by standard units of time. Although children use terms such as hour, minute, day and month in their daily speech, they can comprehend such constant terms as late as their concrete operational stage (Charlesworth & Lind, 2010). A real understanding in terms of date, time and the calendar can form only with maturity (Beneke, Ostrosky & Katz, 2008).

The development of the concept of time contain the skills such as identifying time during speech, measuring time, organizing time-dependent events and adjusting the planning period. Using terms of time may give rise to various difficulties for children whose language skills did not develop sufficiently (Tillman & Barner, 2015). Children generally use patterns of the present tense in their daily conversations. During pre-school period, mathematical skills of children, such as classification, sorting, the part–whole relationship and comparison should be supported and children should be involved in the activity processes of concepts such as before-after and past-present-future (Tillman, Marghetis, Barner & Srinivasan, 2017). In addition to this, a class diary containing field trips, play times, project work and documentations, along with a timetable showing the timing of daily activities, supports children in learning the concept of time (Dogan-Temur & Inan, 2011). It can be said that it is vital for children to receive stimuli related to time concepts from preschool period, thus they can understand the concept of time and correlate the events.

We believe that one of the important tools to be used for generating, discussing and interpreting ideas about the concept of time is mind mapping. Mind mapping is an effective technique that actively uses numerous skill regions of the brain (e.g. attention, words, numbers, logic, imagination, rhythm, pictures, lists, details, colors and spatial awareness, analyzing, establishing cause and effect relationship, planning, memory and emotions) (Buzan & Buzan, 1996; Wen-Cheng, Chung-Chieh & Ying-Chien, 2010). Mind mapping is a form of visualization in which lines, colors, numbers, pictures, symbols or key words are used to associate and integrate a concept with the former ones, and detail it (Buzan & Buzan, 1996). The visualization techniques applied in mind mapping such as colors, codes and symbols make the learning process more efficient and permanent (Buzan, 1989; Margulies, 1991). Mind maps eliminate specifically the gaps and deficiencies in the teaching of abstract concepts and by providing the opportunity to visualize the ideas it facilitates cognitive activity and recall (Hardy & Stadelhofer, 2006; Nesbit & Adesope, 2006). Furthermore, the visual structure of mind maps helps in detailing knowledge and concepts and in doing so revealing deeper facts regarding the relevant subject (Hardy & Stadelhofer, 2006).

The subject or concept to be highlighted is visualized centrally in mind maps. The main themes about the subject, which are in the form of a picture or a key word spreading as branches from the central image. Subordinate subjects are represented by being linked to upper branches. In this way, all branches generate a structure of interconnected nodes (Buzan & Buzan, 1996). Complex relationships of the concepts or themes in such a diagram are represented visually. It becomes easier to understand and recall these relationships and analyze components. Thus, while it becomes easier to represent the information, learning which was previously superficially becomes much deeper (Mayer & Gallini, 1990).

Mind mapping is a substantial technique that promotes learning skills of preschoolers (Bilasa, 2015). There are several studies which indicate that mind mapping activities support the development of children’s mathematical and science skills (Polat, Aksin Yavuz & Ozkarabak Tunc, 2017), critical thinking skills (Polat & Aydın, 2020), the development of their skills of understanding what has been read, and language skills (Koster, van der Wilt, van Kuriustum & van der Veen, 2017; van der Veen, van der Wilt & Boerma, 2018), value acquisition (Polat & Aydın, 2021) and of their attention skills (Daghistan, 2016). Even though there have been various studies revealing the positive effects of mind mapping on different skills of preschoolers, studies analyzing the effectiveness of mind mapping on children’s acquisition of the concept of time have not been conducted. Mind maps present a deeper and more permanent understanding by assisting children in the embodiment of abstract concepts, so we believe that they will affect children’s acquisition of the concept of time in a positive way. In the literature, the limited number of the mind mapping studies performed with preschoolers, stands out. Based on these reasons, this research aims to analyze the effect of mind mapping studies on the acquisition of the concept of time among 60-72 month-old children. In line with this, the hypotheses to be tested as follows:

H0 (null hypothesis): There is no improvement in time concept [sub-scale/total] scores for children in the treatment group following participation in a mind mapping intervention, when compared to the scores of children in the control group.

H1 (alternative hypothesis): Children in the treatment group show increased time concept [sub-scale/total] scores following participation in a mind mapping intervention, when compared to the scores of children in the control group.

METHOD

RESEARCH DESIGN

In the study, an experimental design with pre-test post-test control group was used to examine the effect of mind mapping on children's acquisition of concept of time (Büyüköztürk, 2016a). The research was designed using a 2x2 mixed pattern. As part of this design, the first factor indicates the independent process groups (1 experimental group and 1 control group) while the other factor indicates the repetitive measurements of the dependent variable (pre-test and post-test). In line with this, the acquisition of the concept of time among the children in the experimental group subjected to mind mapping, and the children in the control group who continued with the existing curriculum were assessed.

A private preschool in Istanbul whose teachers received mind mapping training made up the work group of the study. The work group was chosen from preschool teachers who attended mind mapping training given by the researchers and who stated that they wanted to carry out mind mapping activities with children in their institution and requested guidance for this. After the request from school management and teaching staff, the researchers met the teachers and introduce the "Concept of Time" program. The concept of time is abstract, hence the study was limited to only 60-72 month-old children, considering their development. The mean age of the children in the control and experimental groups were 63.13 and 63.06, respectively. The income status indicated by the families of all children was described as middle and high level. The distribution of the children in the work group by experimental and control groups is shown in Table 1.

Table 1. *Distribution of the Children in Work Group by Experimental and Control Groups*

	Gender		
Groups	Male	Female	Total
Experimental	7	8	15
Control	9	6	15
Total	16	14	30

In Table 1, the children in the experimental and control groups and their distribution by gender are shown. As can be seen, in the experimental group there were 7 males and 8 females and in the control group there were 9 males and 6 females. Each of the experimental and control groups contained 15 children each. The study was conducted with 30 children.

DATA COLLECTION TOOLS

Time Concept Achievement Assessment Scale

A total of 72 questions were included in the scale developed by Kurtuluş (1999). The scale comprises of 19 questions for time related listing skills, 36 questions for classification and sorting of units of time and 17 questions for evaluating skills of using the time indicator tools. As a result of the evaluations made to test the validity and reliability of the measurement tool, it was agreed that 4 items from the measurement tools would be excluded and a change in the sub-dimension of an item Thus, the total number of questions was reduced to 68. The final composition of the scale is as follows: 14 questions for time-wise sorting skills, 37 questions for classification and sorting of time units and 17 questions for evaluating skills of using the time indicator tools. Cronbach's alpha internal consistency coefficient of the scale was determined as .95 while consistency of the test-retest performed with 30 children was calculated as .98 (Kurtuluş, 1999).

DATA COLLECTION PROCESS

The research process began with the pre-test practice performed after getting the necessary permissions for using the scale and consent from the families. Researchers gave training to class teachers for the application of the TCAAS. Later the researcher monitored the practices made with 3 children out of the school who were contacted, by each teacher and provided feedback on their evaluation. In this way, measurements regarding the differences which may arise during the application of the scale were taken and the necessary feedback were shared with the teachers to ensure their standard performance. In the middle of October in the 2018-2019 academic year, "Mind

Mapping: Concept of Time Program" developed for 60-72 month-old children was started following the practices of the Time Concept Achievement Assessment scale which was carried out by the teacher of each class and lasted one week.

Mind Mapping: Concept of Time Program

The activities related to the relevant concept of the week were planned and implemented by class teachers after the completion of pre-tests. These activities which were for both experimental and control groups would be performed for 12 weeks for four days a week. Each activity would take 30 minutes. On day five, the experimental group carried out a mind mapping activity while a work sheet was given to the control group. Table 2 contains information on the weeks and goals of the application, and the activities performed.

Table 2. *Mind Mapping: Frame of the Concept of Time Program*

Week	Goal	Group	Application
Week 1	Comprehension of the mind mapping method	Experimental group	Class schedule
			Mind mapping activity
		Control group	Class schedule
Week 2	Use of before-now-after concepts according to their meanings	Experimental group	Class schedule
			Day 1 Games Activities Day 2 Turkish
			Day 3 Experiment
			Day 4 Math
			Day 5 Mind Mapping
		Control group	Class schedule
			Day 5 Work Sheet
Week 3	Use of yesterday-today concepts according to their meanings	Experimental group	Class schedule
			Day 1 Turkish
			Day 2 Drama
			Day 3 Observation
			Day 4 Math
			Day 5 Mind Mapping
		Control group	Class schedule
			Day 5 Work Sheet
Week 4	Use of morning-noon-evening-night concepts according to their meanings	Experimental group	Class schedule
			Day 1 Play-Activity
			Day 2 Turkish
			Day 3 Observation
			Day 4 Math
			Day 5 Mind Mapping
		Control group	Class schedule
			Day 5 Work Sheet
Week 5	Use of the concept of day according to its meaning	Experimental group	Class schedule
			Day 1 Observation
			Day 2 Turkish
			Day 3 Art
			Day 4 Science

			Day 5 Mind Mapping
		Control group	Class schedule Day 5 Work Sheet
Week 6	Proper use of the days of the week and related concepts	Experimental group	Class schedule Day 1 Turkish Day 2 Drama Day 3 Games Day 4 Math Day 5 Mind Mapping
		Control group	Class schedule Day 5 Work Sheet
Week 7	Recognition of months and proper use of related concepts	Experimental group	Class schedule Day 1 Turkish Day 2 Drama Day 3 Games Day 4 Math Day 5 Mind Mapping
		Control group	Class schedule Day 5 Work Sheet
Week 8	Recognition of seasons and proper use of related concepts	Experimental group	Class schedule Day 1 Observation Day 2 Turkish Day 3 Experiment Day 4 Drama Day 5 Mind Mapping
		Control group	Class schedule Day 5 Work Sheet
Week 9	Use of the concept of year and correct use according to its meaning	Experimental group	Class schedule Day 1 Turkish Day 2 Games Day 3 Drama Day 4 Math Day 5 Mind Mapping
		Control group	Class schedule Day 5 Work Sheet
Week 10	Recognition of the time indicator tools and areas they would be used	Experimental group	Class schedule Day 1 Games Day 2 Turkish Day 3 Drama Day 4 Math Day 5 Mind Mapping
		Control group	Class schedule Day 5 Work Sheet

Week 11	Proper use of the time indicator tools	Experimental group	Class schedule
			Day 1 Games
			Day 2 Turkish
			Day 3 Science
			Day 4 Maths
			Day 5 Mind Mapping
		Control group	Class schedule
			Day 5 Work Sheet
Week 12	Repeated practices of the concept of time	Experimental group	Class schedule
			Day 1 Games -Activities-Activity
			Day 2 Turkish
			Day 3 Drama
			Day 4 Maths
			Day 5 Mind Mapping
		Control group	Class schedule
			Day 5 Work Sheet

As is seen in Table 2, the rules of carrying out large group mind mapping were explained to the children in a session, which the experimental group and the researcher participated in in week one. Mind mapping was carried out collectively in this session. A total of four large group mind mapping activities were carried out twice a week in order to teach mind mapping to children. As part of the time related themes, the same activities were conducted with children in the experimental and control groups for 30 minutes, four days a week beginning from week two. Day five was reserved for the individual mind mapping activities about the concept focused by the experimental group (Figure 1, Figure 2).

Figure 1. *Mind Mapping Activity Themed Seasons*

In individual mind mapping processes of the children, their teacher guided them by writing what they drew below their pictures. However, the teacher did not give any direction to children. In control group, individual work sheets regarding the concept focused were provided to the children.

After reading the instructions, the class did not direct the individual work of the children. Instead, they were expected to complete them by themselves.

Following the activities on sub-dimensions of the concepts of time performed for 11 weeks, the program was finalized with the repeated activities about the concept of time in week 12. TCAAS post-test was implemented by teachers of both the experimental and control groups upon completion of the program. Once the study was over, the children in the control group were subjected to mind mapping activities as part of the same program.

Figure 1. *Mind Mapping Activity Themed Days of the Week*

DATA ANALYSIS

Data sets were generated by carrying out the necessary coding in the analysis of data obtained from the study. The distribution of data was examined through an appropriate statistical package program. A homogeneous distribution was detected. For this reason, it was decided to use nonparametric comparison techniques. Comparisons were made using the Mann Whitney-U Test with the aim of testing whether or not the scores attained from the experimental and control groups, which are two unrelated work groups, differ (Büyüköztürk, 2016b). Furthermore, the Wilcoxon Signed Rank Test was applied in the comparisons to test significance of the difference between the scores of the two measurement sets (pre-test and post-test) in the experimental group and the scores of the two measurement sets (pre-test and post-test) in the control group (Büyüközürk, 2016b).

FINDINGS

The results of the Mann Whitney-U Test, performed to test the significance of the difference in scores of TCAAS's Sub-Scales between the experimental and control groups, are provided in Table 3.

According to Table 3, the pre-tests scores of the Before-Now-After Sub-Scale (u=78.50; p>0.05), Yesterday-Today Sub-Scale (u=97.50; p>0.05), Morning-Noon-Evening-Night Sub-Scale (u=67.50; p<0.05), Day Sub-Scale (u=96.00; p>0.05), Week Sub-Scale (u=100.50; p>0.05), Month Sub-Scale (u=102.00; p>0.05), Season Sub-Scale (u=91.50; p>0.05), Year Sub-Scale (u=100.50; p>0.05), Time Indicator Tools Sub-Scale (u=112.50; p>0.05), and the Time Indicator Tools Usage Sub-Scale (u=87.00; p>0.05) obtained from the experimental and control groups do not differ significantly.

Table 4. *Results of Wilcoxon Signed Rank Test for Pre-test and Post-test Scores of TCAAS's Sub-Scales*

		Ranks	N	Mean Ranking	Total Ranking	Z	p
Before-Now-After Sub-Scale							
Experimental	Post-test	Negative S.	0	0.00	0.00	-3.13	0.02
	Pre-test	Positive S.	12	6.50	78.00		
		Equal	3				
		Total	15				
Control	Post-test	Negative S.	2	4.75	9.50	-0.78	0.49
	Pre-test	Positive S.	5	3.70	18.50		
		Equal	8				
		Total	15				
Yesterday-Today Sub-Scale							
Experimental	Post-test	Negative S.	0	0.00	0.00	-2.45	0.01
	Pre-test	Positive S.	6	3.50	21.00		
		Equal	9				
		Total	15				
Control	Post-test	Negative S.	2	5.00	10.00	-0.70	0.48
	Pre-test	Positive S.	5	3.60	18.00		
		Equal	8				
		Total	15				
Morning-Noon-Evening-Night Sub-Scale							
Experimental	Post-test	Negative S.	0	.00	.00	-2.45	0.01
	Pre-test	Positive S.	6	3.50	21.00		
		Equal	9				
		Total	15				
Control	Post-test	Negative S.	3	4.33	13.00	-5.40	0.59
	Pre-test	Positive S.	3	2.67	8.00		
		Equal	9				
		Total	15				
Day Sub-Scale							
Experimental	Post-test	Negative S.	5	5.80	29.00	-0.36	0.72
	Pre-test	Positive S.	6	6.17	37.00		
		Equal	4				
		Total	15				
Control	Post-test	Negative S.	5	4.60	23.00	-0.72	0.47
	Pre-test	Positive S.	3	4.33	13.00		
		Equal	7				
		Total	15				
Week Sub-Scale							
Experimental	Post-test	Negative S.	1	3.00	3.00	-1.24	0.22
	Pre-test	Positive S.	4	3.00	12.00		
		Equal	10				
		Total	15				

Control	Post-test	Negative S.	2	2.50	5.00	-0.00	1.00
	Pre-test	Positive S.	2	2.50	5.00		
		Equal	11				
		Total	15				
Month Sub-Scale							
Experimental	Post-test	Negative S.	0	.00	.00	-3.30	0.00
	Pre-test	Positive S.	14	7.50	105.00		
		Equal	1				
		Total	15				
Control	Post-test	Negative S.	6	7.33	44.00	-0.11	0.93
	Pre-test	Positive S.	7	6.71	47.00		
		Equal	2				
		Total	15				
Season Sub-Scale							
Experimental	Post-test	Negative S.	1	6.50	6.50	-1.32	0.19
	Pre-test	Positive S.	6	3.58	21.50		
		Equal	8				
		Total	15				
Control	Post-test	Negative S.	1	2.00	2.00	-0.48	0.66
	Pre-test	Positive S.	1	1.00	1.00		
		Equal	13				
		Total	15				
Year Sub-Scale							
Experimental	Post-test	Negative S.	0	.00	.00	-2.89	0.00
	Pre-test	Positive S.	10	5.50	55.00		
		Equal	5				
		Total	15				
Control	Post-test	Negative S.	3	3.67	11.00	-0.52	0.60
	Pre-test	Positive S.	4	4.25	17.00		
		Equal	8				
		Total	15				
Time Indicator Tools Sub-Scale							
Experimental	Post-test	Negative S.	0	.00	.00	-3.09	0.00
	Pre-test	Positive S.	12	6.50	78.00		
		Equal	3				
		Total	15				
Control	Post-test	Negative S.	2	1.50	3.00	-1.41	0.16
	Pre-test	Positive S.	0	.00	.00		
		Equal	13				
		Total	15				
Time Indicator Tools Usage Sub-Scale							
Experimental	Post-test	Negative S.	1	6.50	6.50	-3.05	0.00
	Pre-test	Positive S.	14	8.11	113.50		

		Equal	0				
		Total	15				
Control	Post-test	Negative S.	1	2.00	2.00	-1.13	0.26
	Pre-test	Positive S.	3	2.67	8.00		
		Equal	11				
		Total	15				

As is seen in Table 4, there is a significant difference between the pre-test and post-test scores of the experimental group for the Before-Now-After Sub-Scale (z=-3.13; p<0.05), Yesterday-Today Sub-Scale (z=-2.45; p<0.01), Morning-Noon-Evening-Night Sub-Scale (z=-2.45; p<0.01), Month Sub-Scale (z=-3.30; p<0.05), Year Sub-Scale (z=-2.89; p<0.05), Time Indicator Tools Sub-Scale (z=-3.09; p<0.01), and the Time Indicator Tools Usage Sub-Scale (z=-3.05; p<0.01). However, a significant difference between the pre-test and post-test scores of the control group for Before-Now-After Sub-Scale (z=-0.78; p>0.05), Yesterday-Today Sub-Scale (z=-0.70; p>0.05), Morning-Noon-Evening-Night Sub-Scale (z=-5.40; p>0.05), Month Sub-Scale (z=-0.11; p>0.05), Year Sub-Scale (z=-0.52; p>0.05), Time Indicator Tools Sub-Scale (z=-1.41; p>0.05), and the Time Indicator Tools Usage Sub-Scale (z=-1.13; p>0.05) could not be found.

According to Table 4, there is not significant difference between the pre-test and post-test scores of the experimental group for the Day Sub-Scale (z=-0.36; p>0.05), Week Sub-Scale (z=-1.24; p>0.05), and the Season Sub-Scale (z=-1.32; p>0.05). Similarly, it is seen that there is not a significant difference between the pre-test and post-test scores of the control group for the Day Sub-Scale (z=-0.72; p>0.05), Week Sub-Scale (z=-0.00; p>0.05), and the Season Sub-Scale (z=-0.48; p>0.05).

The results of the Mann Whitney-U Test performed to test the significance of the difference in total TCAAS scores obtained from the Time Concept Achievement Scale between the experimental and control groups are provided in Table 5.

Table 5. *Results of the Mann Whitney-U Test for the Total Scores of the Time Concept Achievement Scale*

		N	Mean Ranking	Total Ranking	U	Z	p
Pre-test	Experimental	15	15.47	232.00			
	Control	15	15.53	233.00	112.00	-0.02	0.98
	Total	30					
Post-test	Experimental	15	22.53	338.00			
	Control	15	8.47	127.00	7.00	-4.38	0.00
	Total	30					

According to Table 5, the scores of the Time Indicator Tools Usage Sub-Scale obtained by the experimental and control groups in the pre-tests do not differ significantly (u=112.00; p>0.05). However, it was seen that the post-test scores received from the sub-scale differ significantly and the difference was in favor of the experimental group (u=7.00; p<0.01).

The results of the Wilcoxon Signed Rank Test made to test the significance of the difference in the TCAAS pre-test and post-test scores between the experimental and control groups are given in Table 6.

Table 6. *Results of the Wilcoxon Signed Rank Test for the Total Scores of the Time Concept Achievement Scale*

	Score	Ranks	N	Mean Ranking	Total Ranking	Z	p
Experimental	Post-test	Negative S.	1	1.00	1.00	-3.35	0.00
	Pre-test	Positive S.	14	8.50	119.00		
		Equal	0				
		Total	15				
Control	Post-test	Negative S.	5	10.30	51.50	-4.49	0.63
	Pre-test	Positive S.	10	6.85	68.50		
		Equal	0				
		Total	15				

As is seen in Table 6, there is a significant difference between the total pre-test and post-test scores of the TCAAS for the experimental group ($z=-3.35$; $p<0.01$). However, a significant difference between the total pre-test and post-test scores of the control group could not be found ($z=-4.49$; $p>0.05$).

DISCUSSION, CONCLUSION AND IMPLICATIONS

The present study aims to examine the effect of mind mapping studies on the acquisition of the concept of time among 60-72 month-old children. In this section, we discuss the present interpretations of the main findings, and make suggestions for policy and practice. The results of the research reveal that the Mind Mapping: Concept of Time Program generated a positive and significant difference in children on the acquisition of the concept of time.

In the study, it was concluded that mean scores of the experimental group obtained from the concepts of before-now-after, morning-noon-evening-night, month, year and time indicator tools were significantly higher than those of the control group. In literature, it is specified that children aged three or four can understand that a day consists of morning, noon, evening and night (Smith, 1997). Children aged between four and seven use “before, after, now and later” words to interpret the concepts of beginning, past, present and future (Simchowitz, 1995). However, the children aged about five may have difficulty in deciding whether or an event happened a few months after or one year before (Freidman, 1991). At this point, it can be said that the mind mapping activities performed, support children in using these concepts. Concrete thoughts about time indicator tools such as watches and calendars are formed between the age of six and eight (Freeman, Lehman & Scharer, 1999). Based on the results of this study, it can be stated that the mind mapping studies conducted to promote the concepts of time support the skills of using the time indicator tools among 60-72 month-old children.

In the study, it was concluded that a significant difference between the post-test scores of the experimental and control groups obtained from yesterday and today concepts did not form. Yesterday and today are thought to be the concepts which are most heard by children in their daily social lives. Children should comprehend the transformation and continuity of the day to understand concepts such as, today and tomorrow. However, it is known that children use time-related sentences used in early childhood education by their teachers such as “see you tomorrow”, “we’ll go for a picnic today” or “bring an apple tomorrow”, and it is such expressions help them learn concepts of time (Smith, 1997). On the basis of this information, the children who took part in this study are thought to frequently witness the use of yesterday and tomorrow concepts in daily life.

As a result of this study, it was found out that there is not a significant difference in terms of day, week and season concepts between the pre-test and post-test scores within both the experimental and control groups. According to the researcher, this fact may arise from the weekly curriculum of the preschool included alongside the study. The curriculum of the school contains an activity type determined for each day of the week. For example, Monday and Tuesday were specified as toy day and chess day, respectively. Thus, children can follow the days according to the related activity type. However, it was observed that children usually come across concepts related to the seasons, through the materials and practices in class, included in the existing school curriculum. In this respect, it is thought that children have experiences with seasons, weeks and week days, so therefore, the pre-test and post-test results did not differ significantly.

According to the last finding of the study, the total post-test scores of the experimental group obtained from the Time Concept Achievement Assessment Scale are significantly higher than those of the control group. Various studies in literature indicated the effect of the curriculum supported with different approaches on children's acquisition of the concept of time. The effect of the three-week educational toys program supported with enhanced play materials, on the concept development of preschoolers was examined in a study carried out by Çelik (2005). As a result of the study, it was revealed that there was a significant increase in the skills of the children attending the program in terms of temporal sequencing, classification of time units and using the tools that show time. Yılmaz (2005) proved that a creative activity program which contains duration, before-now-after, morning-evening, yesterday-today-tomorrow, week, month, season, year, calendar and hour dimensions of the concept of time supports children's skills in terms of temporal sequencing, classification of time units and using the tools that show time. A study by Çeliköz and Kol (2016) found that the use of computer-aided instruction is an effective technique for children aged six to acquire the concepts of time and space. In a study by Ergişi Birgül et.al. (2017), it was concluded that the activities prepared on the basis of concepts of time influences children's perception of the concept of time in a positive way. It can be said, based on such studies, that different educational approaches affect the support in learning the concept of time. In this study, the mind mapping technique had an effect on the acquisition of the concept of time.

It was set forth in the research that mind mapping studies generated a positive and significant difference in children's acquisition of the concept of time. By means of mind mapping, children can make correlations between their past learning experiences and the existing materials (Long & Carlson, 2011) and can organize the learning process by recalling the former learning reflections (Wheeldon, 2011). In this context, it can be said that mind mapping activities enable children to correlate past and present, thereby promoting their acquisition of the concept of time. Literature does not contain any studies which examine the effect of mind mapping studies on young children's acquisition of the concept of time. However, Loc & Loc (2020) revealed that mind mapping studies increase the mathematical skills of secondary school students towards the concept of time. These results show that the mind mapping technique increases the knowledge and skills about the concept of time in different age groups.

Mind mapping enables individuals to materialize the associations of ideas about a subject or concept in his/her mind and allow for correlating of the new ideas with their existing knowledge. Mind mapping activities are an entertaining note-taking technique that promotes creativity, both for adults and children. Children develop their memory skills as well as their imagination during mind mapping activities. In such activities, the ideas that children have in their minds deepen, and relationships, concepts and symbols regarding the focus subject are produced. For these reasons, it is thought that the application of mind mapping activities is a useful strategy during the preschool period.

This study contributes to the current knowledge by asserting that mind mapping activities have a positive effect on the acquisition of the concept of time among 60-72 month-old children. We, therefore, recommend the following to researchers and educators:

- In literature, it is stated that mind mapping activities promote various developmental skills in children. To effectively use the mind mapping technique as an educational or assessment method, teachers first should have sufficient knowledge and skills about mind mapping. Therefore, providing the required training to teachers is suggested.

- In literature, the very limited numbers of mind mapping studies performed with preschoolers stands out. It is thought that mind mapping activities promote a wide variety of skills among children. Hence, we believe that the studies which analyze the effect of mind mapping studies on different skills of young children should be increased.
- Research should be increased in order to reveal how children interpret and structure the mind mapping process, through qualitative studies which allow for the deep analysis of children's experiences.

Limitations

The study is limited with the working group. Another limitation is that monitoring tests could not be conducted, because sufficient time was not left for children to comprehend the mind mapping practices, complete the practices and perform the monitoring test. Furthermore, the data which can be presented as findings for the study about the training provided to teachers could not be collected, although teachers gave positive feedback, and the feedback which would contribute to the results of the study could not be included.

AUTHOR CONTRIBUTION

-First author have made substantial contributions to conception and design, analysis and interpretation of data, and given final approval of the version to be published
-The second author have made acquisition and analysis of data, and been involved in drafting the manuscript
-The third author have been involved in drafting the manuscript and given final approval of the version to be published

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PSYCHO-EDUCATIONAL RESEARCH REVIEWS

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Clance Impostor Phenomenon Scale (CIPS): Adaptation and Validation in Turkish University Students

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Abstract

Impostor phenomenon (IP) is the intense feeling of high achieving individuals who cannot internalize their success and attribute it to interpersonal skills, luck, timing, and contacts. The Clance Impostor Phenomenon Scale (CIPS) assesses the fear of failing and being evaluated negatively, not being able to repeat success, fear of the inability to satisfy the expectations of others, and being less capable of others. This study aims to adapt the CIPS into Turkish. Four hundred seven university students enrolled in the study whose average age is 21.12± 1.72 years. Confirmatory factor analysis (CFA) was conducted. The results of the CFA indicated that the first-order one-factor model was a good fit for the data. Criterion validity analysis results showed a strong negative correlation between CIPS and self-esteem and a strong positive correlation between CIPS and trait anxiety. Test-retest reliability was also strong. The Turkish version of the CIPS has good psychometric properties. The scale can be used to assess the IP levels of young adults.

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INTRODUCTION

Achievements and success constitute an essential part of individuals' life. They are desires and goals that individuals struggle to achieve in personal and professional life. By opening wide horizons of knowledge in individuals' lives, college experience may significantly contribute to personal and professional life. Students obtain knowledge, academic, social, and technical skills for a successful career via college experience. College experience may include noteworthy or minor success or failure for students. In other words, the college experience may be considered the total of students' achievements, successes, or failures.

When the students attribute the causes of their success to luck or good timing, and they are not internalizing their achievement, it may be stated that they are experiencing Impostor Phenomenon (IP). Clance and Imes (1978) state that IP is the intense feeling of high achieving individuals who cannot internalize their success and attribute it to interpersonal skills, luck, timing, and contacts. Therefore, IP is regarded as an experience of self-perceived intellectual fraud in terms of success (Hoang, 2013).

A person struggling with IP can develop mental health conditions due to repeated feelings of inadequacy. Negative emotions could lead to generalized anxiety disorder, social anxiety disorder, or depression associated with IP (Clance & Imes, 1978). Although it is not an official diagnosis list in the DSM-5 (APA, 2013), as a type of intellectual self-doubt, some researchers suggested that the experience had to be accepted as a mental illness (Kolligian & Sternberg, 1991). This experience which causes a belief that a person does not deserve his/her achievements and results in anxiety and self-doubt about the achievements is a familiar feeling among college students (Gardner & Holley, 2011; Parkman, 2016). As a result, individuals who experience IP attribute their success to luck, social relationships, and timing rather than ability or intelligence. Clance & Imes (1978) states that regardless of their successful career history, these individuals are constantly afraid of being exposed as incompetent. In a recent systematic review, Bravata et al. (2019) synthesized 62 studies of IP. They found that half of the studies were published within the last six years, much of the research focused on women and ethnic minorities, depression and anxiety were typically comorbid with IP. There is a negative relationship between IP and job satisfaction, job performance, and burnout variables.

In literature, there are IP researches that focus on overcoming it via internalizing one's accomplishments, has been documented in both graduate and undergraduate student populations in the field of higher education (Gardner & Holley, 2011; Hoang, 2013; Hutchins, 2015; Parkman, 2016; Zambrana et al., 2015). Specifically, researchers have identified a positive correlation between IP and perfectionism, perfectionistic cognitions and perfectionistic self-presentation (Cokley et al., 2018; Cowie et al., 2018; Sakulku & Alexander, 2011), depressive mood and anxiety (Wang et al., 2019), state anxiety (Badawy et al., 2018), stress (Parkman, 2016), depression (McGregor et al., 2008), and self-handicapping (McElwee & Yurak, 2007). Conversely, a negative correlation is encountered between IP and self-esteem (Cokley et al., 2018; Ghorbanshirodi, 2012; McElwee & Yurak, 2007; Yaffe, 2020a), entitlement (Ross & Krukowski, 2003), conscientiousness, and extraversion (Bernard et al., 2002), emotional intelligence (Ghorbanshirodi, 2012), lighthearted playfulness (Brauer & Proyer, 2017), a sense of purpose in life, and autonomy (September et al., 2001).

According to King and Cooley (1995), IP may negatively impact students in several ways, such as questioning their admission to academic programs, feeling academically unprepared, inadequacy, anxiety, and stress, attributing examination scores to luck. Felder (1988) states that related to self-efficacy and self-doubt, these processes may cause to change majors or drop out. Thus, experiencing self-doubt and lack of confidence about his/her success can affect students' academic performance. In addition to this, as a significant factor, gender is frequently investigated with IP to explain the feelings of recognition and achievement of females. Clance and Imes (1978) investigated the presence of IP in high-achieving women and suggested that women experience IP more than men. However, the research results have mixed reviews regarding the relationship between IP and gender. While some research results point out a gender difference in the intensity of IP feelings (Bernard et al., 2017; Jöstl et al., 2012; September et al., 2001), others do not (Blondeau & Awad, 2018; Gravois, 2007). Thus, it may be stated that the potential gender effect on IP remains unsolved.

Various measurement scales are used to assess IP in clinical and research applications in the literature. The most commonly used scales are the Harvey Impostor Scale (HIPS; Harvey, 1981), the Clance Impostor Phenomenon Scale (CIPS; Clance, 1985), the Perceived Fraudulence Scale (PFS; Kolligian & Sternberg, 1991), the Leary Impostorism Scale (LIS; Leary et al., 2000) and the State Impostor Phenomenon Scale (SIPS; Fujie, 2010). The HIPS is a 14-item scale that assesses the perceptions and effects of IP for graduate and undergraduate populations. The results of the studies of HIPS revealed that it fails to differentiate impostors from non-impostors (Holmes et al., 1993) and it has psychometric weaknesses (Chrisman et al., 1995), and it has an unacceptable level of internal consistency (Edwards et al., 1987; Kolligian & Sternberg, 1991). Furthermore, there is another issue with the HIPS wording that may prevent accurate self-reporting to statements that respondents may view it as unfavorable.

The most frequently used instrument by researchers and practitioners for measuring IP is the CIPS which assesses the fear of failing and being evaluated negatively, not being able to repeat success, fear of the inability to satisfy the expectations of others and being less capable of others with 20 items and three factors as Fake, Discount and Luck. The factor of “Fake” assesses self-doubt and concerns about intellect and abilities. The factor of “Discount” included items related to fear of the inability to admit a successful performance. “Luck” as the third factor assesses the tendency to attribute success to chance. Higher scores on the CIPS indicate higher levels of experiencing IP (Clance & Imes, 1978). The CIPS is commonly used in IP research as it reveals whether the respondents are experiencing IP and to what degree. Therefore, the CIPS is also more sensitive in differentiating individuals with IP when it is compared to HIPS (Holmes et al.,1993; Mak et al., 2019). The CIPS also has an advantage in wording that minimizes social desirability differently from HIPS (Mak et al., 2019). In addition, the research results demonstrated that CIPS has a high confidence level of internal consistency (Chrisman et al., 1995; French et al., 2008; Holmes et al., 1993).

Kolligian and Sternberg (1991) developed the PFS, which assesses perceived fraudulence and its corresponding personality traits in young adults, is a 51-item instrument measuring IP. In literature, the use of CIPS seems to be more favorable for economic reasons when it was compared to PFS. Another measure to assess IP is the LIS, which is based on a fraudulent component of IP with a seven-item instrument. Unlike other measurement tools, LIS focuses on a sense of being an impostor or fraud with a unidimensional definition of IP (Leary et al., 2000). In addition to these scales, Fujie (2010) developed the SIPS, which measures college students' impostor phenomenon experience with two factors and 12 items. The psychometric properties of the SIPS need to demonstrate with a wide range of populations and applications.

The primary goal of this study is to adapt the CIPS to Turkish culture, test its psychometric properties, and provide evidence for its validity. CIPS was selected for this study for several reasons, such as it differentiates experiencing IP from non-impostor, its administration and scoring are easy, and its wording focuses on success rather than failure. The IP research included the creation of various measurement instruments and increased curiosity about the different populations in which they are most likely to live. A limited number of IP research specifically addressed the IP experience of undergraduate students. It is crucial to understand whether undergraduate students experience IP and how deeply it is experienced because it may cause less involvement in classroom discussion and less attendance to the courses. Several adaptation studies of CIPS in the literature reveal different factor structures for the scale. For instance, CIPS had two dimensions in the German population (Brauer &Wolf, 2016), four dimensions in the Hebrew speaking women population (Yaffe, 2020b), and a unidimensional factor structure in the Austrian doctoral student population (Jöstl et al., 2012). Despite its widespread use in literature, there is no adaptation study of the CIPS on undergraduates in Turkish culture. Özdemir (2015) applied a study that assesses IP by using CIPS on the research assistant population in Turkey. In this study, we intended to enhance the validity and reliability results of the CIPS on undergraduates.

On the other hand, Akın et al. (2015) adapted the LIS on undergraduate students in Turkey, and they reported that the scale is reliable and valid with good fit indices and internal consistency. Thus, it was expected to evaluate the psychometric properties of CIPS by internal consistent and test-retest reliability, convergent validity, and the factor structure by employing confirmatory factor analysis in Turkish-speaking undergraduate students in this study. Understanding IP, which results in psychological distress and influences the career decisions of undergraduate students, can help identify students who suffer from self-perceived intellectual fraud.

METHOD

RESEARCH MODEL

The purpose of this study was to assess the validity and reliability of the Turkish version of CIPS (Clance and Imes, 1978). As a result, the quantitative survey model was used.

PARTICIPANTS

THE SAMPLE GROUP 1

There were 407 undergraduate students [260 (63.9%) females and 147 (36.1%) males] in this group. The participants are from faculties as follows: Faculty of Education, Faculty of Medicine, Faculty of Engineer, Faculty of Health Sciences, Faculty of Science and Literature. Among the participants, 85 (20.9%) were first-year students, 106 (26%) were sophomores, 119 (29.2%) were juniors, and 78 (19.2%) were seniors from different faculties. Additionally, 19 (4.7%) were fifth and sixth-class students enrolled in the Faculty of Medicine. The ages of the participants ranged from 18 to 26 years, and the mean age was 21.12 (SD= 1.72). Students were invited to participate in a web survey via email invitation. The data of this group was used for confirmatory factor analysis and reliability analysis.

THE SAMPLE GROUP 2

The second sample group comprises 56 volunteer participants for the test-retest process. In test-retest process; 40 (71.4%) of the participants were female and 16 (28.6%) were male, 10 (17.9 %) were freshmen, 25 (44.6%) were sophomores, 13 (23.2%) were juniors and 8 (14.3%) were seniours from different faculties. Additionally, their ages ranged between 19 and 29, and the average age was 21.38 (SD= 2.09).

THE SAMPLE GROUP 3

In order to determine the convergent validity of the CIPS, 132 volunteer participants who did not participate in the other two sample groups completed the scales. In this process, 88 (66.7%) participants were female, and 44 (33.3%) were male. The ages of the participants ranged from 19 to 27 years, with a mean age of 21.40 (SD=1.99). In addition, 35 (26.5%) of the participants were freshmen, 45 (34.1%) were sophomores, 40 (30.3%) were juniors, and 12 (9.1%) were seniors.

DATA COLLECTION TOOLS

The participants completed the instruments, including the Demographic Information Form, the CIPS, the State-Trait Anxiety Inventory, and the Rosenberg Self Esteem Scale.

DEMOGRAPHIC INFORMATION FORM

The researchers developed the form and consisted of questions about gender, age, university, and grades.

CLANCE IMPOSTOR PHENOMENON SCALE (CIPS)

CIPS consists of 20 self-report items, and each item is scored on a five-point Likert type which is scored from 1 (not at all true) to 5 (very true). Clance reported that the total point of 40 or less indicates few, 41 to 60 indicates moderate, 61 to 80 indicates frequently, and higher than 80 indicates intense impostor experiences. In addition, higher scores indicate greater impostor experiences on the scale. The original scale comprises three dimensions fake, luck, and discount. The internal reliability coefficient of the scale was reported as .72, and the factors explained the 45.2%, 6.6%, and 6.1% of the variance, respectively (Chrisman et al., 1995).

ROSENBERG SELF-ESTEEM SCALE (RSES)

The scale is commonly used to measure the self-consideration of people about themselves. The RSES, developed by Rosenberg (1965), has ten items; each is scored on a four-point Likert type. The items are answered on a scale from 1 (strongly agree) to 4 (strongly disagree). Higher scores indicate higher self-esteem on the scale. It was adapted into Turkish by Çuhadaroğlu (1986), and the test-retest correlation coefficient was reported as .75 in the adaptation study. The internal consistency coefficient of the scale was calculated as .72 in this study.

STATE-TRAIT ANXIETY INVENTORY (STAI)

Spielberger et al. (1970) developed the STAI with two subscales. The state anxiety dimension measures how respondents feel at that moment, while the trait anxiety dimension indicates how people generally feel anxious aside from current conditions. High scores mean higher anxiety levels. Adaptation of the scale into Turkish was conducted by Öner & Le Compte (1998). Adaptation studies showed that test-retest reliability ranged from .26 to .68. The trait anxiety subscale of the STAI was used in this study. This Likert-type scale consisted of 20 items scored from 1 (not at all) to 4 (very much so). The internal consistency coefficient of the scale was calculated as .84 in this study.

THE SCALE ADAPTATION PROCESS

This study's cross-cultural adaptation and validation steps consist of three steps, as it is specified by Hambleton & Bollwark (1991). Firstly, the items are translated into the target language later, the equivalence of items in the original and adapted versions is determined. Lastly, the validity and reliability of the adapted form of CIPS are investigated. The items of the CIPS were translated into Turkish by three experts who are competent in Turkish and English from the educational science department, including Psychological Counseling and Guidance, Assessment and Evaluation in Education Educational Administration departments. In addition, a bilingual expert from English Language Teaching department also translated the items into Turkish. Then two different experts who did not attend the first translation group checked on the compatibility between the English and Turkish versions and decided the best translation of each item. After the revisions, we asked 20 undergraduate students to evaluate each item in clarity. They were also asked to write down what they understood of each item. Some concepts that are understood differently or inadequately have been changed accordingly. Later, a Turkish language researcher reviewed the translated Turkish form and the final form translated to English by two experts from the School of Foreign Language. The authors discussed the translated English items and decided on the best English items. We sent this form to Dr. Clance, and we obtained her approval.

PROCEDURE

The Ethical Committee of Anadolu University confirmed the study. The data was collected online. The authors shared the research link with their students and requested them to share the link on their social media groups comprising undergraduate members. When a participant clicked the link, they encountered detailed information about the purpose of the research, accessing conditions of the data, the right of privacy, and withdraw from the study at any time of the process. Then, informed consent was obtained online from all participants who attended the study. There were no grants for participation.

DATA ANALYSIS

The current study analyses were conducted using IBM SPSS Statistics 21.0, Lisrel 8.7., and JASP 0.14.1. Initially, 423 university students completed the data tools, the Mahalanobis distance was calculated, and 16 cases were omitted. It was determined that the absolute values of the correlations between the variables ranged from 0.11 to 0.65, and therefore the correlations were lower than the 0.85 (Kline, 2005) criterion for multicollinearity. As a result, it was determined that there was no multicollinearity problem in the data. The skewness values of the items in scale varied between .03 and 1.51, and the kurtosis values between -0.6 and -1.40, indicating that the univariate normality condition was met (Field, 2009).

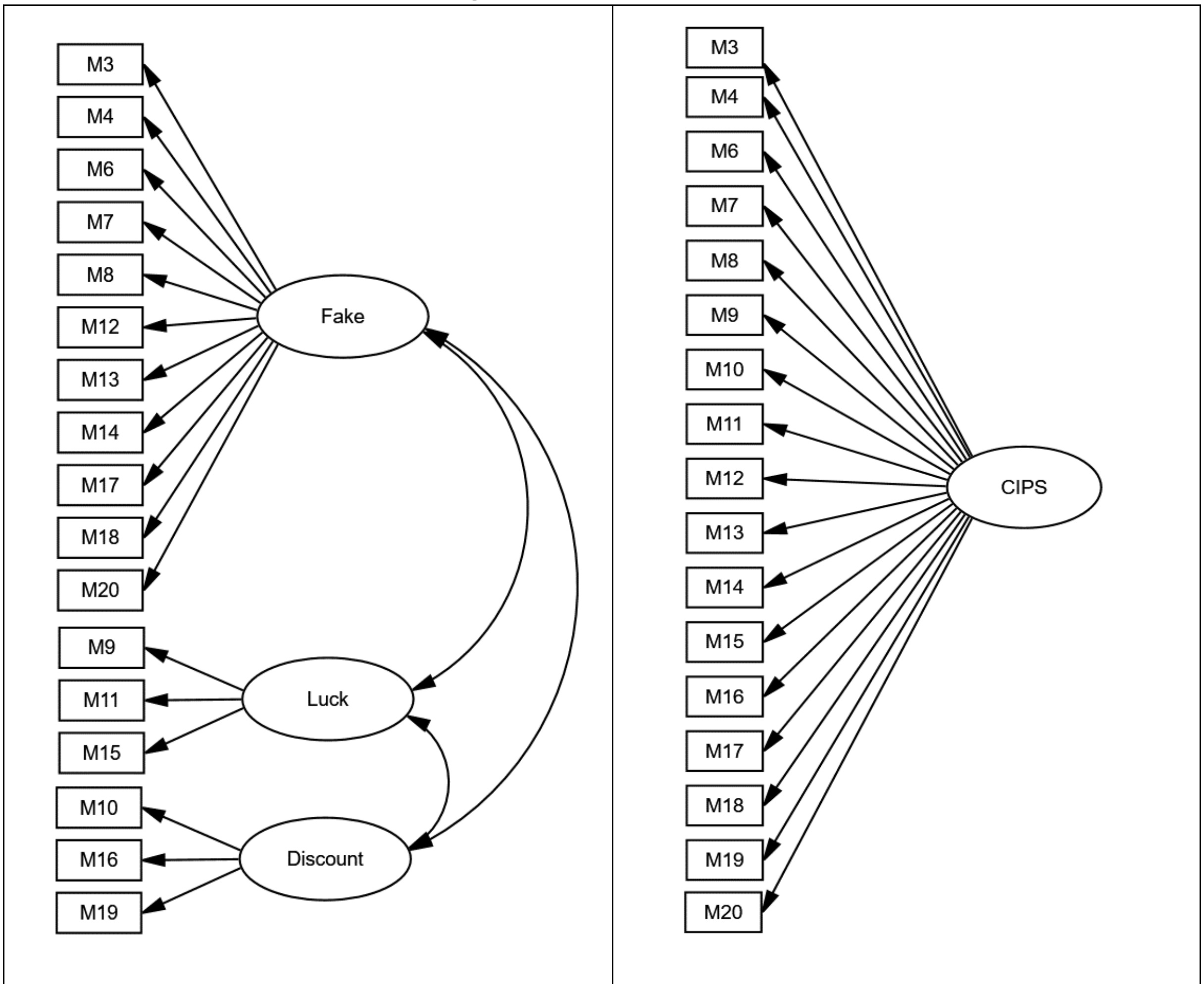
The scale's factor structure was tested with Confirmatory Factor Analysis (CFA). Chi-square/df, Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), GFI (Goodness of Fit Index), Standardized Root Mean Square Residual (SRMR), and Non-Normed Fit Index (NNFI) were used to determine the final model. In this regard, the value of x^2/df smaller than three was accepted as a good fit, and between the values 3 and 5 was an acceptable fit (Kline, 2005). The value of RMSEA smaller than .05 was accepted as a good fit and smaller than .08 as acceptable (Brown, 2006). The values of CFI, GFI, and NNFI higher than .90 were acceptable and higher than .95 was a good fit (Tabachnick & Fidell, 2001). Lastly, the value of SRMR smaller than .05 was accepted good fit, and smaller than .08 was acceptable (Kline, 2005).

The internal consistency coefficient of the scale and the correlations with self-esteem and trait anxiety were also calculated. In this process, additional data was collected (the sample group 3). In order to determine the normality of the distribution, skewness, and kurtosis values were calculated. It was seen that the skewness values were -.28 and .01, and the kurtosis values were -.55 and .27 for self-esteem and anxiety, respectively. These values prove the normal distribution of the variables.

RESULTS

Item total correlations were calculated, and it was seen that Item 1 and Item 2 had no significant relationships, as Clance (1985) stated. Therefore, these items were excluded from the analysis. CFA was implemented to test the original first-order three-factor model of the 18 items scale. It was seen that item 5 did not have a significant factor loading (β = -.00; p>.001). Therefore, it was decided to exclude this item. The CFA was implemented again, and although the goodness of fit statistics was acceptable (as seen in Table 1), the correlations between the factors were higher than expected values (between Fake and Luck was .91, Fake and Discount was .84, and Luck and Discount were .94). Thus, it was decided not to test the higher-order three-factor model, and then this model was compared with an alternative model, which was the first-order one-factor model, as shown in Figure 1.

Figure 1. *Alternative Models*



Higher-order three-factor model	First-order one-factor model

CFA was implemented to test the first-order one-factor model with 17 items. The goodness of fit statistics was seen in Table 1.

Table 1. *Fit Indices of the Competing Models*

	x^2	*df*	*x^2/df*	*RMSEA*	*GFI*	*CFI*	*NNFI*	*SRMR*
First-order three-factor model	526.74	116	4.54	.093	.87	.94	.93	.062
First-order one-factor model	546.15	119	4.59	.094	.86	.94	.93	.063
With a modification between items 9 and 11	432.14	118	3.66	.081	.89	.95	.95	.058
With a modification between items 6 and 13	378.11	117	3.23	.074	.90	.96	.96	.056

When the modification suggestions were examined, it was seen that the error correlations of items 9 (Sometimes I feel or believe that my success in my life or in my job has been the result of some kind of error) and 11 (At times, I feel my success has been due to some kind of luck) which were very close to each other in meaning, were high. Therefore, it was decided to make an error association for these items, and the CFA was repeated. It was seen that the goodness of fit statistics was satisfactory except for the GFI value. The modification suggestions were examined again, and it was decided to make an error association between Item 6 (I am afraid people important to me may find out that I am not as capable as they think I am) and Item 13 (Sometimes I'm afraid others will discover how much knowledge or ability I really lack), and the CFA was repeated. As a result of modification indices, the 17 items first-order one-factor scale satisfied the model fit. The means, standard deviations, t values, standardized factor loadings, and R2 values of the items are presented in Table 2.

Table 2. *Means, Standard Deviations, T Values, Standardized Factor Loadings, and R^2 Values of the CIPS Items*

Item	*Mean*	*Sd*	*t*	*Standardized factor loadings*	*R^2*	*SE*
3	2.38	1.18	10.54	.51	.25	.74
4	2.83	1.28	12.78	.60	.36	.64
6	2.20	1.33	14.37	.66	.39	.57
7	3.13	1.32	11.58	.55	.31	.69
8	2.44	1.11	6.89	.35	.12	.88
9	1.75	1.12	9.02	.44	.20	.80
10	2.44	1.29	9.35	.46	.21	.79
11	1.82	1.09	10.05	.49	.23	.76
12	3.41	1.20	10.92	.53	.28	.72
13	1.89	1.24	16.26	.72	.48	.48
14	2.92	1.27	17.95	.77	.61	.40
15	2.41	1.24	16.26	.72	.52	.48
16	2.41	1.38	7.39	.37	.14	.86
17	2.39	1.30	13.72	.63	.40	.60
18	3.00	1.24	16.69	.73	.55	.46
19	3.29	1.33	8.16	.41	.17	.84
20	2.85	1.26	13.82	.64	.40	.59

In order to examine the convergent validity of CIPS, the relationship between impostor phenomenon and self-esteem was calculated as -.74 ($p < .00$; N=132), and between trait anxiety was calculated as .74 ($p < .00$; N=132). Additionally, the lower 27% and upper 27% impostor groups were compared to support the scale's validity. According to t-test result, a significant difference between the groups occurred ($t(200) = -38.03$. $p < .00$). Moreover, scale points of the participants were compared according to gender, and it was found that there was a significant difference between women and men ($t(405) = 3.26$. $p<.01$). While the mean score of female participants was 45.08 (SD=13.12), male participants' mean score was 40.80 (SD=11.96).

Cronbach's alpha, McDonald's omega, and Guttman's lambda coefficients were computed to reveal the internal consistency reliability. The values were $\alpha = .892$, $\omega = .894$, and $\lambda6 = .904$. respectively. These values indicated strong coefficients. The split-half reliability coefficient was calculated as .83. In order to determine the test-retest reliability, the scale was implemented on 56 university students in two weeks intervals. The correlation was calculated as .91 ($p < .00$), which indicated an acceptable value.

DISCUSSION AND CONCLUSION

This study aimed to test the psychometric properties of CIPS and provide evidence for its validity. As a result of the CFA to test the construct validity of the scale, the items which were insignificant correlations with the total score were excluded, and the 3-factor 17-item model was tested. Since this model did not fit well and the correlation between factors was high, it was decided to test the single-factor model. After the two modification suggestions were applied, the x^2/df value was close to 3. RMSEA value was smaller than .08. GFI. CFI and NNFI values were higher than .90. and SRMR value was smaller than .010. Therefore, the goodness of fit indices for the scale was within acceptable limits (Hu & Bentler, 1999; Kline, 2005). As a result, it was determined that the 17-item single factor model fits well for university students' study group.

In the literature, the adaptation research of CIPS had inconsistent findings. For example, Brauer &Wolf (2016) stated that the scale had two dimensions in the German adult population; on the other hand, Yaffe (2020b) stated that the scale had four dimensions in Hebrew speaking women. In addition, Simon & Choi (2018) explained that one factor model with correlated residuals best explains the factor structure of the CIPS. Furthermore, French et al. (2008) had reported that the original theoretical model would be problematic. When the previous Turkish adaptation study of the scale was examined, it was reported that the scale was unidimensional (Özdemir, 2015).

In summary, the scale does not seem sensitive enough to distinguish the factors of the construct. These values can be considered why the three-factor structure of the scale could not be confirmed in this study. According to these inconsistent findings, the one-factor 17 items finding of this study seems acceptable.

Within the scope of convergent validity of the CIPS, we benefit from self-esteem and trait anxiety. Because, in the IP literature, it was stated that IP causes anxiety and self-doubt among the undergraduates (Gardner & Holley, 2011; Parkman, 2016). It has been determined that the scale has a negative and high relationship with self-esteem. Additionally, CIPS had a positive and high relationship with trait anxiety. These findings support the unique construct of the CIPS. The previous findings, which revealed the negative relationships between IP and self-esteem (Ghorbanshirodi, 2012), self-efficacy (Felder, 1988), and autonomy (September et al., 2001) are supported the negative aspect of IP. These findings can be interpreted as impostors having negative self-images and feeling anxious because of this situation. Therefore, it seems essential to assess the IP levels of individuals for developing some programs which aim to intervene in negative self-images. In this way, it can be possible to enhance the well-being levels of people. The scale can also distinguish people with a lower and higher level of IP, which supports the construct validity of the scale. In addition, there was a significant difference between the points of female and male. Özdemir (2015) also reported the same finding of gender differences. This finding seems in accordance with Clance and Imes's (1978) explanations about the impostor phenomenon experiences of women.

Large Cronbach's alpha, McDonald's' Omega, and Guttman's lambda coefficients evidenced that scores have small amounts of random error and consistently measure the IP, indicating strong internal consistency. In addition, the test-retest correlation coefficient of the scale also evidenced the reliability. This study reveals that the Turkish form of the CIPS is a valid and reliable scale within college students, and it can be used in studies that aim to assess the self-perceived intellectual fraud of individuals.

LIMITATIONS

The number of participants in this study is limited; an increased number of respondents may have contributed to the study. The predominantly female formation of the sample limits the applicability and generalizability of the current results. Additional evidence-based research with more diverse participants is required to generalize the findings to larger populations, particularly men. In future research, more demographically gender-balanced and clinical samples can be preferred. Additionally, to measure the three factors of the scale, researchers can carry out scale development studies. Furthermore, the test-retest reliability of the scale was calculated with limited participants in this study. This calculation can be repeated with more participants in future studies.

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AUTHOR CONTRIBUTION

Ezgi Ekin Şahin has made substantial contributions to conception and design, acquisition of data, analysis and interpretation of data. Fatma Uslu Gülşen has been involved in drafting the manuscript, revising it critically for important intellectual content, have given final approval of the version to be published.

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APPENDIX

This scale can be used, provided that researchers cite it as a reference. No additional permission is required.
The scale items (Original in Turkish)

1. Başlamadan önce iyi yapamayacağımdan korktuğum bir testte veya görevde çoğu zaman başarılı olurum.*
2. Gerçekte olduğumdan daha yetkin olduğum izlenimini verebilirim.*
3. Mümkünse değerlendirmelerden kaçınırım ve başkalarının beni değerlendirmesinden korkarım.
4. Başardığım bir şey için insanlar beni takdir ettiğinde, gelecekte onların benimle ilgili beklentilerini karşılayamayacağımdan korkarım.
5. Bazen şu anki konumumu veya mevcut başarımı doğru zamanda doğru yerde olduğum ya da doğru insanları tanıdığım için elde ettiğimi düşünürüm.*
6. Benim için önemli olan insanların, sandıkları kadar yetenekli olmadığımı öğrenmelerinden korkarım.
7. Elimden gelenin en iyisini yaptığım zamanlardan daha çok elimden gelenin en iyisini yapmadığım olayları hatırlama eğilimindeyim.
8. Bir projeyi veya görevi, yapmak istediğim şekilde nadiren yapıyorum.
9. Bazen hayatımdaki veya işimdeki başarımın bir tür hata sonucu olarak gerçekleştiğini hissediyorum ya da buna inanıyorum.
10. Zekâm ya da başarılarım hakkındaki iltifat ya da övgüleri kabul etmek benim için zordur.
11. Zaman zaman başarımın bir tür şans eseri olduğunu hissediyorum.
12. Mevcut başarılarım hakkında zaman zaman hayal kırıklığı hissederim ve daha fazlasını başarmış olmam gerektiğini düşünürüm.
13. Bazen başkalarının gerçekte benim ne kadar bilgisiz ya da beceriksiz olduğumu keşfedeceğinden korkuyorum.
14. Başladığım bir işi genel olarak iyi yapsam da, yeni bir görevlendirmede ya da sorumlulukta başarısız olmaktan çoğunlukla korkarım.
15. Bir şeyi başardığımda ve başarılarım için takdir edildiğimde, bu başarıyı tekrarlayabileceğime dair şüphelerim olur.
16. Başardığım bir şey için çok fazla övgü ve takdir görürsem, yaptığım şeyin önemini küçümseme eğiliminde olurum.
17. Yeteneklerimi sık sık çevremdekilerle kıyaslar ve onların benden daha zeki olabileceklerini düşünürüm.
18. Bir projede ya da sınavda, her ne kadar çevremdeki insanlar benim başarılı olacağım konusunda bana ciddi bir güven duysa da, ben genellikle başarılı olamayacağımdan endişelenirim.
19. Bir terfi alacak ya da bir tür takdir elde edeceksem, bu gerçekleşene kadar başkalarına söylemekten çekinirim.
20. Başarı gerektiren durumlarda "en iyi" ya da en azından "çok özel" değilsem kendimi kötü hissederim ve cesaretim kırılır.

*Excluded items.

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The Relationship between Critical Thinking and Academic Achievement: A Meta-Analysis Study

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Abstract

This study aimed to investigate the relationship between critical thinking and academic achievement via meta-analysis. The studies obtained after literature review were reviewed by two researchers according to inclusion criteria and meta-analysis was carried out with 67 data from 47 individual studies. The mean effect size was 0.428 under random effects model. This value indicated that there was a medium relationship between critical thinking and academic achievement. While this effect size did not differ according to sub-groups of critical thinking type, school level, and publication type, it differed according to sub-groups of region, discipline, and outcome type. In the sub-group of region, Asia-Pacific had the greatest mean effect size. In the sub-group of discipline, foreign language had the greatest mean effect size. Besides, the mean effect size of Tests/Exams was greater than GPA.

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INTRODUCTION

Great importance is attached to the enhancing of critical thinking (CT) at each level of education in many countries today (Stassen, Herrington & Henderson, 2011). One of the main reasons behind this trend is the idea that high CT skills are vital for academic achievement (AA). Also, the future of society is depended on individuals with higher CT skills (Tican & Taşpınar, 2015) because when the individuals have higher CT skills, they will not only be more successful academically but also be more positive socially (Kökdemir, 2003). Therefore, CT skills are seen as an increasingly important outcome (Halpern, 1998) and primary goal (Astin, 1993; Stedman & Adams, 2012) of colleges and universities. In this sense, CT has also gained attention in research related to AA (Ghanizadeh, 2017).

CRITICAL THINKING

Philosophy, cognitive psychology, and education research are the three disciplines that dominate the discussion on the definition of CT (Lewis & Smith, 1993; Sternberg, 1986). From a philosophical perspective, CT can be dated back to the times of Socrates and it can be said that with his well-known Socratic dialog method, Socrates was trying to encourage students to query well-known opinions and distinguish between those ideas which are reasonable and those which are not (Paul, 1990). Since CT has flourishing importance in teaching and learning, various researchers have provided different definitions for it. Paul (1990) defined CT as a mode of thinking about an idea or a problem in which the individual evaluates whether the information, evidence, and results are valid, logical, correct or reasonable. During this intellectually well-organized thinking process, the thinker has an active role, takes responsibility, and improves the quality of thinking process by analysing, evaluating, and re-constructing it (Paul & Elder, 2001). CT is a reasonable and reflective thinking process that focuses on making a judgment about the quality of knowledge (Beyer, 1995) and deciding what to believe or to do (Ennis, 1993). CT is the use of mental processes and cognitive skills that would enhance the possibility of desired behaviours (Halpern, 2003) and that people use while solving problems and making decisions (Sternberg, 1986). Some of these cognitive skills or strategies are problem solving, identifying issues and assumptions (Pascarella & Terenzini, 1991), deducing conclusions (Angelo, 1995; Sternberg, 1986), decision making (Halpern, 2003), analysing and evaluation of arguments, and making inferences (Lai, 2011; Facione, 2000). Pintrich (1999) described CT as using existing knowledge in new situations to solve problems or make decisions concerning the standards of excellence.

CT should be conceptualized in two dimensions as skills and dispositions. It can be said that CT dispositions can be seen as a tendency to use CT skills (Pascarella & Terenzini, 1991). Having high CT skills does not guarantee that the individual will use these skills in school or workplace (Paul & Elder, 2001; Siegel, 1988). There are two things that make the individual a successful critical thinker. The first is CT skills, and the second is the dispositions. Therefore, CT dispositions are also essential for students because they ensure that the individual will use CT skills not only in the classroom but also later when they start to work.

CRITICAL THINKING AND ACADEMIC ACHIEVEMENT

Higher-order thinking skills are needed to meet academic goals in every discipline (Facione & Facione, 1997). Including the improvement of these thinking skills like CT, creative thinking or problem solving among the primary goals of educational institutions will both increase the AA of students and make students more equipped individuals (Halpern, 2003). According to Pirozzi (2003), individuals with high CT skills use their time efficiently, skilfully plan and use the limited time and limited knowledge they have, effectively organize the information, problem or decisions, and reach a result. The most basic feature of a critical thinker is self-knowledge. Individuals with CT skills are aware of their strengths and weaknesses, shortcomings, and limitations (Ruggerio, 1990). Besides, the critical thinker can skilfully use existing knowledge and experience in new situations (Pascarella & Terenzini, 1991;

Beyer, 1995; Ennis, 2011). Paul and Elder (2001) defined CT as the skill of analysing and evaluating one's own thinking system. The purpose of this analysis and evaluation is to improve one's own thinking system within the framework of certain standards set by him/her. CT equips students with a necessary lens into their learning and thinking processes and enables them with advanced and complex ability to actively take responsibilities in their learning and helps them to monitor themselves. Therefore, CT makes the individual an experienced and efficient learner (Moon, 2008). CT provides better learning experiences by encouraging the student to examine, evaluate and research the acquired knowledge in depth (Dwyer, Hogan, & Stewart, 2014; Shehab & Nussbaum, 2015) and thus increases AA (Kwan & Wong, 2015). Therefore, it can be said that CT is an important skill for AA (Scott & Markett 1994).

In literature, many studies concluded that CT skills or dispositions are significantly associated with AA (Pitt et al., 2015; Giddens & Gloeckner, 2005; Afshar, Rahimi & Rahimi, 2014; D'Alessio, Avolio & Charles, 2019; Ghanizadeh, 2017). On the contrary, there are also other studies which concluded that CT skills or dispositions are not significantly related to AA (Shirazi & Heidari, 2019; Mahmoud, 2012; Mohammadi, Moslemi & Ghomi, 2016; Ku & Ho, 2010b; Azar, 2010; Tafazzoli et al., 2015). Therefore, it can be said that studies on CT and AA have reached some vague results. Also, the studies concluded varying magnitudes on the relationship between CT (skills and dispositions) and AA. So, meta-analysis studies, which can provide a holistic portrait of the relationship between these two variables, are needed. In the literature, there is a meta-analysis study on the relationship between CT and AA (Fong et al., 2017). However, it can be said that this study has a limitation because it focused on just college students' AA. Also, it included the studies carried out before January 2015. Therefore, it can be said that this study is more inclusive because it investigated the relationship between CT and the AA of students from any school levels. In this study, it was aimed to perform a meta-analysis based on the relationship between CT and AA by combining the results of the previous studies conducted between January 2015 and October 2020. In this sense, answers to the following questions were sought for:

1. What is the relationship (direction and magnitude) between CT and AA?
2. Does this relationship differ by different variables (region, CT type, school level, discipline, publication type and outcome type)?

METHOD

This study is a meta-analysis study. Meta-analysis is a statistical analysis which lets us compare and combine the results of similar research on a certain topic consistently and coherently (Cohen, Manion & Morrison, 2007). Thanks to meta-analysis, we can bring the results of quantitative studies together systematically (Borenstein et al., 2009) and reach a general conclusion. In other words, we can obtain in-depth information (Durlak, 1995) and interpret the knowledge accumulated in a specific area in a consistent way (Schmidt & Hunter, 2015) by statistically combining the results of individual studies on a given topic. When performing meta-analysis in this current study, PRISMA guidelines by Moher et al. (2009) were followed.

COLLECTION OF STUDIES

According to Springer, Stanne & Donovan (1999), studies should be involved in the meta-analysis in consideration of certain criteria. However, these criteria need to be set very carefully because if the criteria are too broad, the qualities of the collected primary studies can decrease. Also, if the criteria are too strict, few studies may be involved in the analysis and it may prevent generalizability of the results. Therefore, after inclusion criteria were determined to examine the studies collected during the literature review, the studies were investigated by two researchers in this current study. Publication bias can be seen as a vital problem while conducting meta-analysis studies (Rosenthal, 1979).

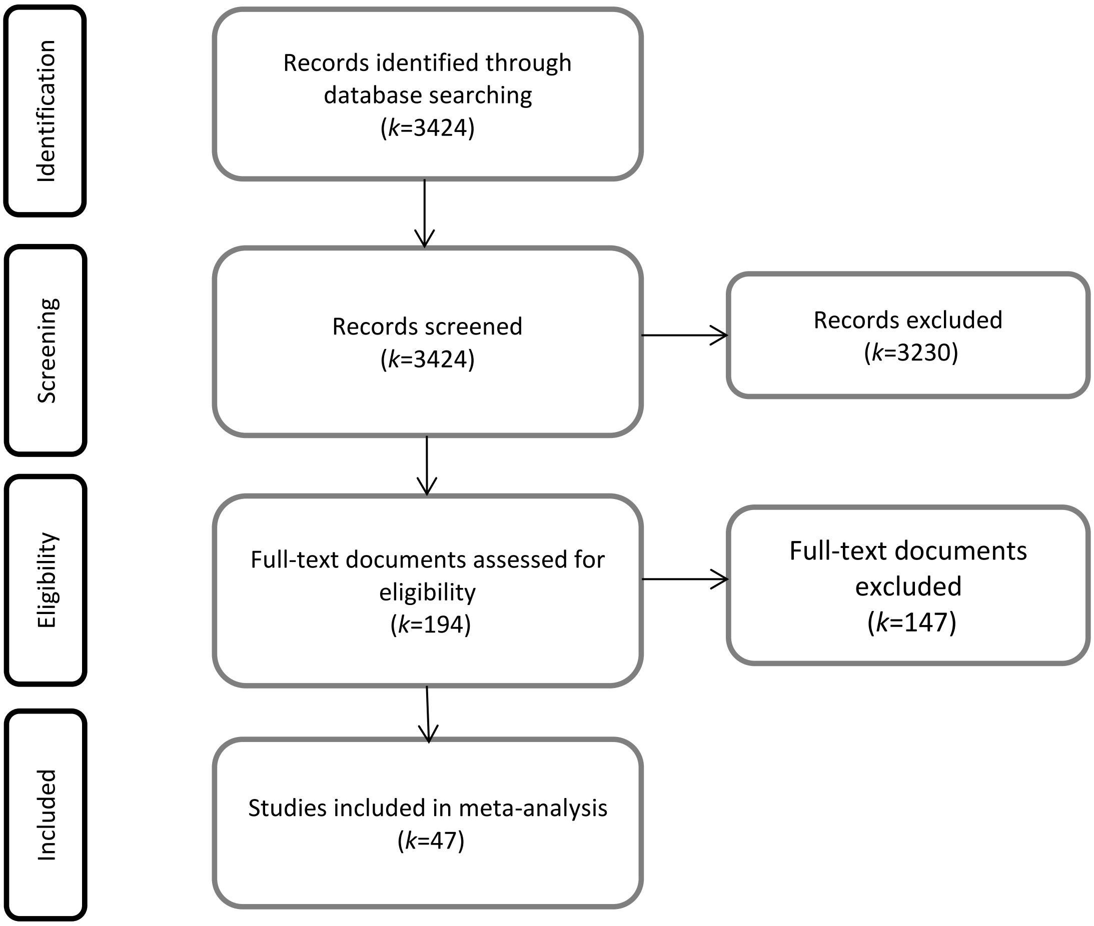
Publication bias can occur when only studies published in research journals are included in meta-analysis because studies which concluded significant results have more chance to be published in the academic journals than the studies that have non-significant results (Rothstein, Sutton & Borenstein, 2005). Therefore, including as many and different types of studies as possible in meta-analysis can prevent this problem. For this reason, the researcher attempted to include all types of studies (i.e. published studies in the research journals, conference papers, book chapters, and unpublished postgraduate theses) that investigated the relationship between CT and AA and reported the necessary data to estimate the ES.

The criteria set for the inclusion of the studies can be seen as follows;

1. The study must be carried out between January 2015 and October 2020.
2. The study must be a correlational one that examines the relationship between CT and AA.
3. The measurement tools must have good psychometric properties.
4. Sufficient statistical data to estimate the ES must be reported.

Some online databases, namely, Google Scholar, Scopus, Web of Science, ULAKBİM, and Turkish National Thesis Centre were searched with “critical thinking” OR “critical thinking skills” OR “critical thinking disposition” AND “academic performance” OR “academic success” OR “academic achievement” search pattern in Turkish and English to find the studies examining the relationship between CT and AA. After the literature review, 3424 studies were found by the last search on the 31st of October 2020. Firstly, the studies were investigated through their titles and abstracts and 3230 studies were excluded because of some reasons (e.g., language of the study, not accessible full text, and duplicates). Then, 194 studies were reviewed by two researchers according to the criteria abovementioned and 147 studies were excluded from the study because of some reasons (e.g., not a correlational study on the relationship between CT and AA, not have sufficient statistical data to estimate the ES) and 47 studies were included. Since more than one data were shared in some of these studies, meta-analysis was carried out with 67 data (from 47 unique studies). Figure 1 shows the flow diagram.

Figure 1. *Flow Diagram*



Also, because some of the studies did not have the necessary statistical data to estimate the ES even if they met the criteria for inclusion, I tried to reach the authors of these studies via e-mail. However, they did not respond. The total sample number of the studies was 13687.

CODING OF THE STUDIES

According to Lipsey and Wilson (2001), the data must be coded correctly to reach valid results. In this current study, the studies were coded with a coding form. The coding form has information such as the name of the study, year published, publication type (article, thesis, and conference paper), author(s), sample characteristics, region, the measurement tool used, and the data required for ES calculations. The author of this study and another researcher who has meta-analysis experience coded the studies independently to increase the reliability. Full consistency was seen between the coders (r=1.00). Table 1 shows the general characteristics of the studies.

Table 1. *Characteristics of the Studies*

		k	%			*k*	%
Region	Africa	9	13.43	Discipline	Education	3	5.26
	America	7	10.45		Sciences	10	17.54
	Asia-pacific	24	35.82		Fine arts	2	3.51
	Europe	27	40.30		Reading comprehension	4	7.02
CT type	Skills	42	62.69		Health sciences	9	15.79
	Dispositions	25	37.31		Social sciences	16	28.07
School level	Primary school	4	6.06		Sports sciences	2	3.51
	Elementary school	17	25.76		Foreign language	11	19.30
	High school	9	13.64	Publication type	Published	45	67.16
	University	36	54.55		Unpublished	22	32.84
Outcome type	GPA	33	50.77				
	Tests/Exams	32	49.23				

As shown in Table 1, most of the studies were carried out in Asia-Pacific (35.82%) and European (40.30%) countries. Also, while measures of CT assessed skills in 42 of the studies (62.69%), 25 of them assessed CT dispositions (37.31%). More than half of the studies were conducted with students enrolled in university (54.55%) and most of the studies were carried out in social sciences disciplines (28.07%). Also, the majority of the studies were published articles (67.16%). Besides, AA outcomes presented in half of the studies were GPA (50.77%).

DATA ANALYSIS AND INTERPRETATION

The data was analysed with Comprehensive Meta-Analysis software. The Pearson correlation coefficient and sample size were used to estimate the ES. While calculating the ES, the Pearson correlation coefficient was first converted to Fisher's Z, and after analyses were made, it was converted back to Pearson correlation coefficient. The confidence interval was determined as 95% for all calculations. The classification set by Cohen (1992) was used for the interpretation of the ES. This classification indicates small, medium, and large ESs with 0.10, 0.30, and 0.50, respectively.

Since publication bias is an important problem that can threaten the reliability of the meta-analysis studies, before calculating the ES, publication bias should be checked firstly (Kromrey & Rendina-Gobioff, 2006; Rothstein, Sutton, & Borenstein, 2005). In this study, publication bias was investigated by funnel plot, Duval and Tweedie's Trim and Fill, Egger's regression intercept, and Rosenthal’s fail-safe N test methods.

Some well-known tests such as I^2 value and Q statistics can be used to investigate the heterogeneity in meta-analysis studies (Hedges & Olkin, 1985). When the calculated Q value is higher than the critical limit in X^2 table, we can say that heterogeneity among the studies exists. I^2 value, which takes values from 0% (means no heterogeneity) to 100% (means high heterogeneity), can also be used to check heterogeneity (Cooper, 2017). In this study, heterogeneity was checked with Q statistics and I^2 value.

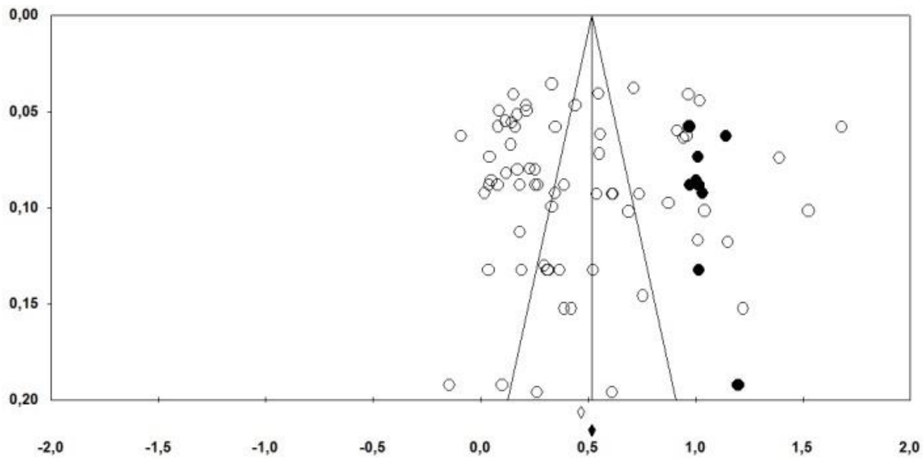
Moderator analyses were carried out with the sub-groups of region (Asia-Pacific, America, etc.), CT type (disposition or skill), school level (primary school, secondary school, etc.), discipline (education, sciences, etc.), publication type (published or unpublished) and outcome type (GPA or test/exams). Moderator analyses were performed with Analog ANOVA. Analog ANOVA provides some Q-statistic values such as between-group (Q_B), within-group (Q_W), and total (Q_{TOTAL}). Q_B statistic can tell us if the categorical variable is a real moderator or not (Lipsey & Wilson, 2001). If Q_B value is significant and higher than the critical limit in X^2 table, we can say that mean ESs differ between categories of the moderator variable.

RESULTS

RESULTS ON PUBLICATION BIAS

The funnel plot which can be seen below was investigated using the trim-and-fill method.

Figure 2. *Funnel Plot*



Empty circles in the funnel plot show the studies which were involved in the analysis and the full (black) ones show the imaginary studies that must be included to eliminate publication bias totally (Duval & Tweedie, 2000). Symmetrically distributed ESs around the general ES in the funnel plot indicate that publication bias does not exist (Borenstein et al., 2009). As shown in Figure 2, it can be assumed that ESs are distributed symmetrically around the general ES. In addition to this, trim-and-fill method estimated that only nine imaginary studies (black circles in the funnel plot) should be added to eliminate publication bias totally. When number of the ESs computed in this study (*k*:67) is taken into account, it can be said that these imaginary studies can be neglected. Also, fail-safe N number (41952) was much greater than the number (345) calculated by the formula of 5k+10 (Fragkos, Tsagris & Frangos, 2014) and this indicated a lack of publication bias. In addition to these, Egger's intercept was -0.398 (95% CI=-3.855–3.058, p=0.818). So, Egger's test showed that there was no publication bias. Overall, it can be claimed that publication bias was not a critical issue for this study.

RESULTS ON THE ES OF THE RELATIONSHIP BETWEEN CT AND AA

The ESs and the heterogeneity test results can be seen in Table 2.

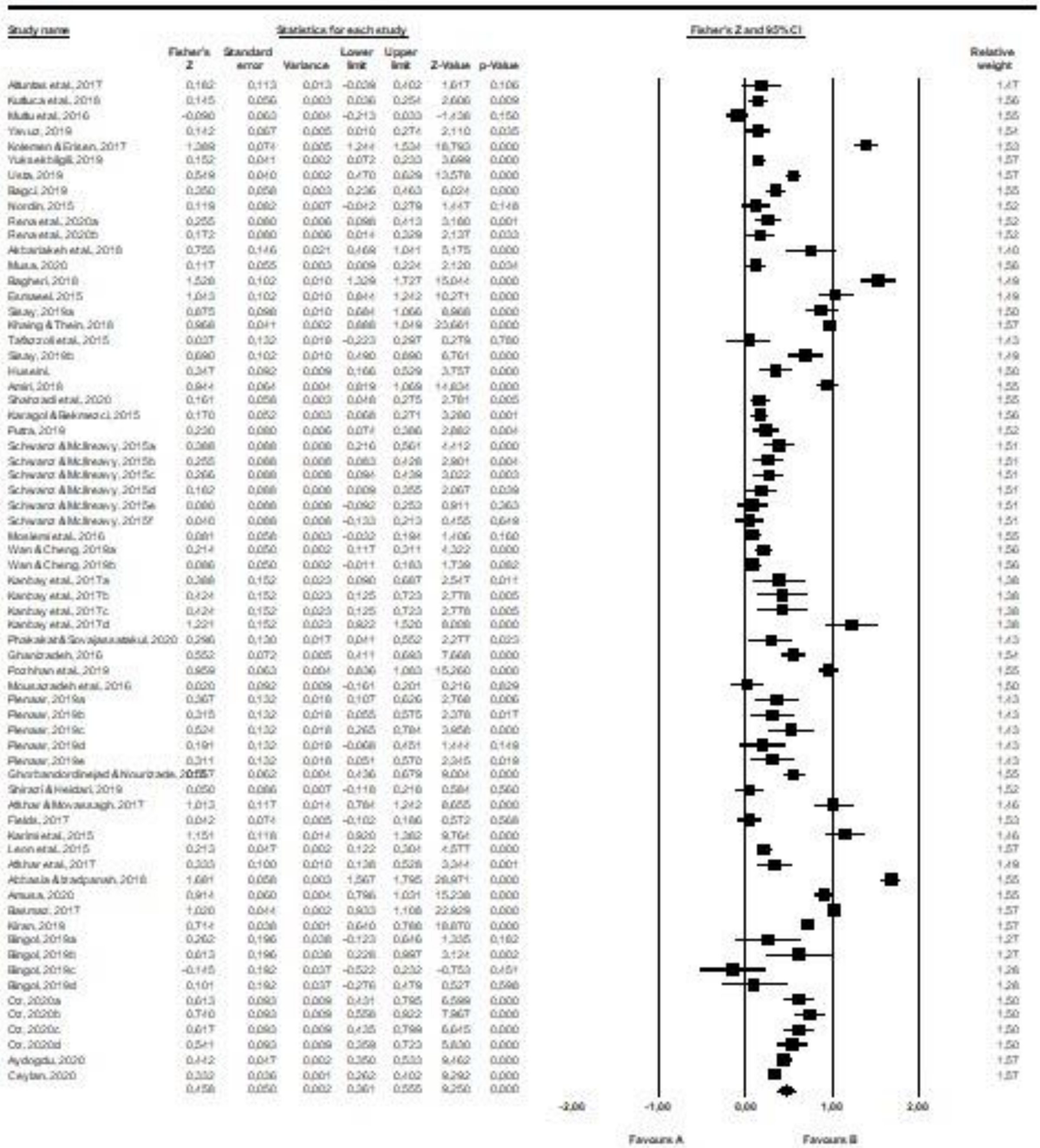
Table 2. *The Estimated ESs and the Heterogeneity Test Results*

Model	ES	*k*	SE	Z	95% CI		df	Q	p	I^2
					Lower	Upper				
Fixed	0.435	67	0.009	54.140*	0.421	0.449	66	2095.55	0.00*	96.85
Random	0.428	67	0.050	9.250*	0.346	0.504				

*P<0.05; Note that the Pearson correlation coefficient was first converted to Fisher's Z, and after analyses were made, it was converted back to Pearson's r and ES shows the Pearson's r values.

As seen in Table 2, the ES was calculated as 0.428 with a standard error of 0.050 under the random effects model and lower limit of the ES was 0.346 and upper limit was 0.504 with 95% confidence interval. Also, the ES was 0.435 (lower limit: 0.421 and upper limit: 0.449) with a standard error of 0.009 under the fixed effects model. The data were also tested for heterogeneity and the $Q_{(df=66)}$ value was calculated as 2095.55 (p<0.05). The calculated Q value was higher than the critical limit in X^2 table (df=66, $X^2_{(0.05)}$=85.965). So, it can be said that heterogeneity among the studies existed. This finding was confirmed by the I^2 value (96.85%). So, I used random effects model to calculate the ES in this meta-analysis. Indeed, random effects model should be used for meta-analyses which are performed with the studies from social sciences since it is almost impossible to have homogeneity among the studies from social sciences (Schmidt & Hunter, 2015). The mean ES was 0.428 according to random effects model. This value showed that there was a medium relationship between CT and AA based on Cohen's (1992) classification. The forest plot presents the distribution of the ESs of the studies.

Figure 3. *Forest Plot*



According to the forest plot, out of 67 ESs, only two were negative. So, we can say that CT is positively related to AA.

RESULTS ON THE MODERATOR ANALYSES

Moderator analyses were performed with the sub-groups of region, CT type, school level, discipline, publication type, and outcome type to determine the sources of heterogeneity.

Table 3. *Results of the Moderator Analyses*

Sub-groups				95% CI		df	Heterogeneity test	
		k	ES	Lower Limit	Upper Limit		Q_B-value	p
Region	Africa	9	0.474	0.308	0.612	3	19.539	0.000
	America	7	0.174	0.077	0.268			
	Asia-pacific	24	0.501	0.333	0.637			
	Europe	27	0.408	0.294	0.510			
CT type	CT skills	42	0.469	0.367	0.560	1	1.932	0.165
	CT dispositions	25	0.354	0.215	0.479			
School level	Primary school	4	0.434	0.221	0.607	3	1.786	0.618
	Elementary school	17	0.452	0.299	0.770			
	High school	9	0.568	0.263	0.653			
	University	36	0.383	0.277	0.480			
Discipline	Education	3	0.160	0.090	0.227	7	42.025	0.000
	Sciences	10	0.491	0.292	0.650			
	Fine arts	2	0.270	0.143	0.388			
	Reading comprehension	4	0.566	0.364	0.716			
	Health sciences	9	0.346	0.133	0.528			
	Social sciences	16	0.223	0.155	0.289			
	Sports sciences	2	0.015	-0.185	0.215			
	Foreign language	11	0.705	0.509	0.831			
Publication type	Published	45	0.449	0.334	0.551	1	0.579	0.447
	Unpublished	22	0.390	0.281	0.489			
Outcome type	GPA	33	0.341	0.249	0.426	1	4.330	0.037
	Tests/Exams	32	0.496	0.377	0.599			

Note that the Pearson correlation coefficient was first converted to Fisher's Z, and after analyses were made, it was converted back to Pearson's r and ES shows the Pearson's r values.

As shown in Table 3, the calculated heterogeneity values of the sub-group of CT type (Q_B=1.932; p=0.165), school level (Q_B=1.786; p=0.618) and publication type (Q_B=0.579; p=0.447) were less than the critical values in X^2 table. On the other hand, the heterogeneity values of the sub-groups of region (Q_B=19.539; p=0.000), discipline (Q_B=42.025; p=0.000) and outcome type (Q_B=4.330; p=0.037) were higher than the critical values in X^2 table. So, we can say that the difference between the sub-groups of CT type, school level, and publication type was not statistically significant while the difference between the sub-groups of region, discipline, and outcome type was statistically significant. As it can be seen in Table 3, in the sub-group of region, Asia-Pacific (ES=0.501) had the greatest mean ES. Africa (ES=0.474), Europe (ES=0.408), and America (ES=0.174) followed it, respectively. Besides, in the sub-group of discipline, foreign language (ES=0.705) had the greatest mean ES. Reading comprehension (ES=0.566), sciences (ES=0.491), and health sciences (ES=0.346) followed foreign language, respectively. Also, the mean ES of Tests/Exams (ES=0.496) was greater than GPA (ES=0.341).

DISCUSSION, CONCLUSION AND IMPLICATIONS

This study aimed to examine the relationship (direction and magnitude) between CT and AA. For this purpose, the results of the studies investigating the relationship between CT and AA were analysed with meta-analysis. After literature review, 47 studies that met the inclusion criteria were found and since more than one data were shared in some of these studies, meta-analysis was carried out with 67 data. Publication bias was checked with different methods and it was found out that publication bias was not a critical problem for this study.

Under the random effects model, the ES of the relationship between CT and AA was 0.428. This value showed that there was a medium and positive relationship between CT and AA. Fong et al. (2017) conducted a meta-analysis study on the relationship between CT and college students' AA and found out that there was a medium and positive relationship between them. Therefore, it is possible to say that the results obtained by Fong et al. (2017) coincide with the results of this study. Also, according to Ren et al. (2020) who examined the prediction of CT on AA, CT (both skills and dispositions) made an important contribution to the AA of primary school and university students. In his study, Kettler (2014) compared a group of students with high AA and another group of students with average AA and found out that the group with high AA displayed higher levels of CT. In addition, Ghasemi and Dowlatabadi (2018) found out that CT predicted improvement in language achievement in their study which they carried out with 190 participants using the structural equation model. Similarly, León et al. (2015) carried out a study to investigate the relationship between intrinsic motivation, CT, and AA in music using structural equation model and found out that CT dispositions were positively related to AA in music. In her study, Villavicencio (2011) investigated the mediated effects of negative emotions on the link between CT and AA using the structural equation model and found out that CT was a significant and positive predictor of AA. Therefore, this study is in harmony with previous studies using the structural equation model in the literature. These previous studies stated that CT skills and dispositions were important predictors of students' AA. Also, there are many other empirical and correlational studies that concluded a significant relationship between CT (skills and dispositions) and AA (Ghanizadeh & Mirzaee, 2012; Lee & Loughran, 2000; Facione & Facione, 1997; Ghazivakili et al., 2014; Nold, 2017; Taghva et al., 2014; Taube, 1997). So, it can be said that a diverse body of educational research concluded that CT skills and dispositions had a positive effect on learners' AA.

On the contrary, Richardson, Abraham and Bond (2012) performed a meta-analysis study with primary studies between 1997 and 2010 to reveal the antecedents of university students' AA and concluded that there was a small, significant, and positive correlation between students' CT and AA. Stupnisky et al. (2008) carried out a longitudinal study using the structural equation model with 1196 first-year college students to investigate the relationship among CT dispositions, perceived academic control, and AA and found out CT disposition had a significant but small effect on students' GPAs. However, a greater magnitude for the relationship between CT and AA was found in this study.

Pintrich et al. (1993) described CT as one of the five cognitive strategies which may affect learning. When the relevant literature is examined, it can be said that learning materials oriented towards CT can improve students' AA (Wicaksana, Widoretno & Dwiastuti, 2020; Hairida, 2016; The, Isa, & Omar, 2018). So, it can be said that learning materials and content with specific activities that can advance CT skills such as analysis, deduction, inference, etc. can also improve student's AA. Therefore, as in this study, these results concluded in some prior research revealed the significant relationship between CT and AA. Indeed, learners with high CT (both skills and dispositions) attempt to understand and think about what they are learning (Lee, 2013), can critically analyse and evaluate what they are learning (Phan, 2010), are more inclined to use high-level planning strategies (Ku & Ho, 2010a) and these are associated with AA. CT can improve students' cognitive processes (Adams, 1989; Saido et al., 2015) and they can learn many abilities that can improve their learning. Thanks to high CT skills and dispositions, students can have better abilities of some cognitive skills such as organizing and deeper understanding the information, deduction, explanation, exploring, and inference, etc. (Assaly & Smadi, 2015). Therefore, we can say that students who have high CT skills and dispositions are more likely to have better AA (Khasanah, Sajidan, & Widoretno, 2017; Pitt et al., 2015; D'Alessio, Avolio & Charles, 2019).

MODERATOR ANALYSES

In this study, it was found out that the ES of the relationship between CT and AA did not differ according to sub-groups of CT types, school level, and publication type while it differed according to sub-groups of region, discipline, and outcome type. In the sub-group of region, Asia-Pacific (ES=0.501) had the greatest mean ES. Africa (ES=0.474), Europe (ES=0.408), and America (ES=0.174) followed it, respectively. Besides, in the sub-group of discipline, foreign language (ES=0.705) had the greatest mean ES value. Reading comprehension (ES=0.566), sciences (ES=0.491), and health sciences (ES=0.346) followed foreign language, respectively. Also, the mean ES of Tests/Exams (ES=0.496) was greater than GPA (ES=0.341). According to Fong et al. (2017), the magnitude of the relationship between CT and AA of college students did not differ significantly according to the CT types and publication types. Also, in their study, Ren et al. (2020) conducted a multiple regression analysis to investigate the prediction of CT (skills and dispositions) on AA and concluded that CT skills and dispositions of primary school students (10%) and university students (11%) explained a similar portion of variance in AA. It shows the insignificant difference between the prediction of CT on AA of primary and university students. Therefore, the results of these two studies are in harmony with this study. CT (skills and dispositions) is strongly related to AA and this relationship is constant for all school levels. Based on this result, we can say that including CT instruction in the curriculum can contribute to AA at all school levels. Also, it was found out that, foreign language (ES=0.705) had the greatest mean ES value in the sub-group of discipline and it was followed by reading comprehension (ES=0.566). Having a good verbal ability enables an individual to better understand, interpret and make inferences of the material they interact with (Vukovic & Lesaux, 2013). Also, Facione and Facione (1997) concluded that there was a correlation between CT dispositions and nursing students' verbal scores. CT can be seen as one of the main competences for foreign language learners to be successful (Ghanizadeh & Mirzaee, 2012). In this sense, it can be said that the fact that CT was mostly related to AA of foreign language and reading comprehension is in line with these views in the literature. In this study, it was found out that CT skills (ES=0.469) had a larger association with AA than CT dispositions (ES=0.354) even if the difference between skills and dispositions was not significant. In a similar vein, Facione and Facione (1997) found out that CT skills had a larger correlation with achievement than CT dispositions. Therefore, it may be said that CT skills (such as deduction, explanation, and inference, etc.) are better reflected in AA.

In short, this study concluded that there was a medium and positive relationship between CT and AA. Also, the ES of the relationship between CT and AA did not differ according to sub-groups of CT types, school level, and publication type while it differed according to sub-groups of region, discipline, and outcome type. It can be said that there is a notable theoretical and empirical background in the literature demonstrating the relationship between CT and AA. Learners with high CT skills and dispositions can critically analyse the learning materials and evaluate information and thanks to this invaluable ability, the learners can take an active role in the learning process, evaluate their learning process, dedicate themselves to their tasks, engaged in learning content, thereby become more successful learners. The results of this meta-analysis study also support and contribute to this theoretical relationship.

LIMITATIONS AND IMPLICATIONS FOR OTHER STUDIES

There were several limitations to this study. Therefore, these limitations should be considered while interpreting the results. Firstly, it is not possible to detect the direction of the relationship between two variables with correlation studies. So, this can be shown as the first limitation. It is impossible to answer the question of whether the students' AA is high because of high CT skills or whether the CT skills are high because of high AA with this meta-analysis study. Therefore, other studies should be carried out to appropriately infer causal impact relationship between CT and AA. Secondly, this study is limited in its scope because it only included the studies carried out between January 2015 and October 2020. Lastly, it can be said that this study may have method bias because it was conducted with only correlational studies. So, the results of intervention studies should also be used in future meta-analyses.

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Author(s) declare that they have no conflict of interest.

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APPENDIX

STUDIES INCLUDED IN THE META-ANALYSIS

Abbasi, A. & Izadpanah, S. (2018). The relationship between critical thinking, its subscales and academic achievement of English language course: The predictability of educational success based on critical thinking. *Academy Journal of Educational Sciences, 2*(2), 91-105.

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The Role of Speaking Self-Sufficiency and Problematic Internet Use in Predicting Prospective Teachers' Reading Habits

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Abstract

The teaching profession is characterized by academic competence, interaction skills, the transfer of knowledge and skills to individuals, and conveying emotions and thoughts using appropriate language. It is a special profession that requires a common ground and interactions between children, parents, and school administrators, in short, all segments of the society. Therefore, among the questions that need to be answered is how a technology-oriented lifestyle affects teacher candidates' speaking skills, which is a sensitive issue that should be emphasized in university education. Accordingly, this study aimed to describe the role of problematic internet use and speaking self-sufficiency in predicting prospective teachers' reading habits. The study was designed in a relational survey model, and the sample consisted of prospective teachers of a foundation university in Gaziantep in the 2020-2021 academic year. An appropriate sampling method was used for the selection of the participants. The data were collected using a "Personal Information Form," and "Attitude Scale Towards the Teacher Candidates' Reading Habit," "The Scale of Pre-service Teachers' Self-sufficiency Perception of Speaking Skills," and "The Problematic Internet Usage Scale." Descriptive statistics, correlation analysis, and hierarchical regression analysis were used to analyze the data. The study results revealed that improving university students' speaking self-sufficiency increases positive attitudes towards reading habits. An increase in problematic internet use undermined speaking self-sufficiency but increased the attitudes towards reading habits.

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INTRODUCTION

One of the primary criteria of being a modern and developed society is the presence of citizens who use basic language skills effectively. Inherently characterized by basic language skills, communication is a prerequisite for the existence of individuals in social life and is also a challenging skill to acquire (Nordin & Broeckelman-Post, 2019). The practical and accurate use of language is gained through reading. Reading, one of the critical steps of comprehension, is a complex activity that involves the movements of the sense organs and the mind's efforts to grasp the meaning, supports human development, introduces the life, people, and the environment, helps individuals learn "yesterday" and "today" and plan the "future," and maintains the intergenerational transfer of culture (Aytaş, 2005). The skill closely related to such an essential activity is the reading habit. As a human need, the reading habit is a continuous and regular activity (Tanju, 2010) that contributes to society in two ways. Firstly, reading activates logical development, and secondly, booklovers contribute to economic growth (Phillip, 2005). According to Loop (2017), a good reading habit plays a vital role in success at school and business and acquiring an ideal job. The development level of countries is correlated to the reading habits of young citizens studying at universities. Therefore, it is crucial to be a university graduate who has a reading habit, chooses what to read deliberately, and understands and discusses what they read (Erdağı Toksun, 2019).

The teaching profession requires not only academic competence but also interaction skills, the transfer of knowledge and skills to learners, and the ability to convey emotions and thoughts using appropriate language. Therefore, prospective teachers who are expected to interact with students, parents, and school administrators appropriately, in short, with the people from all strata of society, should have reading habits for both their intellectual development and as a requirement of their job. If teachers and teacher candidates desire to get students reading habits, firstly they should be good readers. According to Brooks (2007), teachers should be good role models for reading. Therefore, teacher candidates' attitudes towards reading habits are essential to promoting future generations' reading habits acquisition.

Speaking is a basic language skill used to express thoughts in daily and professional life. Speech, conceptually a "mental product" and the communication of thoughts using voice, is an interactive and quite complicated process (Dohen et al., 2010; Thornbury, 2012). However, especially for certain professions (e.g., teaching), speaking functions beyond satisfying basic communication needs in daily life. Accordingly, teachers are among the groups expected to use speaking skills very frequently and effectively. Therefore, regardless of the teaching branches, teachers must communicate with their students for an efficient and permanent learning process in the classroom environment (Katrancı, 2014) accurately. Perception of self-sufficiency, one of the essential components of speaking skills, refers to self-judgments and beliefs about their potential capacity for a specific subject (Bandura, 1997). In this sense, teachers' speaking self-confidence and self-sufficiency play a critical role in reaching educational goals in the classroom setting because teachers with speaking self-sufficiency are committed to professional, educational, and personal achievements and create an effective learning environment for students (Bruning et al., 2004). A life without reading and speaking is impossible, but the online reading and speaking activities systems are undeniable facts in this technological era.

In the technological era of the 21st century, the internet is an inseparable part of human life and makes life easy and comfortable (Kılıç Çakmak et al., 2015). According to the "Global Internet Report 2020" by "We Are Social" and "Hootsuite Platform," there are 4.54 billion internet users worldwide, which corresponds to approximately 59% of the world population. It is reported that internet users spend an average of 6 hours and 43 minutes online daily. This rate was 79% in Turkey's 16-74 age group in 2020 (Turkish Statistical Institute, 2020). In Turkey, 62.1% of the 16-24 age group use computers almost every day, 88.5% are regular internet users (almost every day/ at least twice a week), and 72.5% of internet users follow news and read newspapers and magazines online. It suggests that the internet has become one of the most preferred information search and entertainment tools for people in recent years (Ko Yen et al., 2012) and has changed how they work, learn and spend leisure (Siddiqi & Memon, 2016; Tsai et al., 2009). Today, there are various and easy ways of accessing information through technology. The rapid development of information technology facilitates access to the latest news on the internet for more and more people worldwide (Griff & Matter, 2013). Considering the current life conditions and the global Covid-19 pandemic, schools are no longer the only source of information and do not provide adequate information, but technology-based means (i.e., internet, social media, television, smartphone) are used as educational tools (Ergişi, 2005; Ertürk & Dönmez, 2021; Quadir & Zhou, 2021).

An information society requires that citizens should have reading habits and know digital access to information. The world is rapidly shifting to digital reading platforms (Odabaş et al., 2019), and teacher candidates' reading interests and habits constantly change and increase due to technological developments and pandemic conditions. In today's world, where the internet and social media are getting popular day by day, people can learn information by using the internet and social networks. Many easily accessible online platforms offer reading materials for all ages and reading levels, and it is easy to access thousands of documents, texts, audio, and animated graphics from all spheres of life (Odabaş et al., 2020). Today, teacher candidates, who can meet daily information needs mainly through search engines, can also quickly obtain the materials they need through digital media, which offers a ground for improving fluent and efficient speaking skills. In this sense, improving reading habits by using electronic materials can be considered one of the benefits of technology, and teacher candidates should benefit from the advantages of technology to refine reading habits and speaking self-sufficiency.

Despite their problematic usage and negative consequences, social media, characterized by a unilateral interaction, and the internet, distinguished by bilateral interaction, provide important convenience for individuals and societies (Eşitti, 2015). In this sense, the quality and quantity of leisure activities have changed with the developing technology. For instance, reading, which used to be considered a means of intellectual entertainment and leisure activity, has been replaced by technological tools such as television, computer, smartphone, and tablet. Such tools can be so influential on the behavior patterns of individuals that they might promote new positive or negative habits and attitudes. Due to the closure and lockdown restrictions during the Covid 19 pandemic, face to face and one-on-one interactions have ceased, and the amount of time spent on remote communication devices such as television, computer, tablet, and smartphone has increased (Durmaz & Ertaş, 2021; Aktaş & Dastan, 2021; Ürkmez & Eskicumalı, 2021). The reading habit, a neglected activity due to the rapid flow of life, has regained popularity during the pandemic. The increase in reading behavior, which can be described as discovering new worlds, might be associated with the excess of leisure or vice versa (Altun Ekiz & Kır, 2020). In other words, reading behavior, which is considered a daily life activity, has been replaced by alternative preoccupations such as social media and internet use (Minaz & Çetinkaya Bozkurt, 2017). The Covid 19 pandemic has led to the widespread use of the internet, especially among young people (Baltacı et al., 2021; Çiçek et al., 2021; Durmaz & Ertaş, 2021). Moreover, the general increase in computer and internet use among the young population might impose a threat or alternative to reading habits (Altun Ekiz & Kır, 2020).

THE PURPOSE AND IMPORTANCE OF THE RESEARCH

Teachers are special people who achieve and guide desired learning at schools. There is always an intense flow of information and messages from teacher to student, and vice versa, and language is a vital instrument to recognize and make sense of the environment and empathize and sympathize with others. Thus, teachers play an important role in building a communication environment and using the language effectively in sharing information in the classroom (Hayran, 2020, MEB, 2017, Yelok & Sallabaş, 2009). Therefore, it should be explained how the current conditions dependent on technology due to the Covid-19 pandemic have influenced teacher candidates' speaking skills. With the distance education practices during the Covid-19 pandemic, we have witnessed compulsory increases in the amount of time spent online at all educational levels, from preschool to university. In our study group, teacher candidates maintained their education in live classes on Zoom, Skype, Microsoft Teams, and Google Meet platforms. Those students are expected to be active participants and acquire 21st-century skills such as critical thinking, problem-solving, creativity, communication, and cooperation. However, it is still a wonder if the passive listeners-students- in online classes would fulfill such requirements due to the limited interactions between students and lecturers and how this situation would affect students' communication skills. This study aimed to evaluate the predictive power of problematic internet use and speaking self-sufficiency on prospective teachers' reading habits. Thus, we sought answers to the following questions:

1- Is there a relationship between reading habits, speaking self-efficacy, and problematic internet use of prospective teachers?

2- What effects are speaking self-efficacy and problematic internet use on prospective teachers' reading habits?

METHOD

RESEARCH MODEL

The researcher used a relational survey model to determine whether prospective teachers' problematic internet use and speaking self-sufficiency predicted their reading habits. Relational surveys examine the relationships between two or more variables (Creswell, 2016). The survey is a quantitative research method to determine the perceptions and attitudes of a group of people towards particular events, facts, and situations (Fraenkel et al., 2015). Observation without intervention is one of the advantages of the relational survey model (Büyüköztürk et al., 2016). This model was preferred as the study explored the relationships between prospective teachers' reading habits (the dependent variable) and speaking self-efficacy and problematic internet use (the independent variables).

RESEARCH SAMPLE

In Turkey, besides state universities, there are also foundation/private universities established by non-profit foundations that balance their income and expenses. The participants consisted of 350 prospective teachers studying at a foundation university in Gaziantep in the 2020-2021 academic year and were chosen using a convenient sampling method. After the extreme values were removed from the data set, the analysis was completed on 346 participants. The demographic characteristics of the participants are shown in Table 1.

Table 1. *Demographic characteristics of the participants*

		f	%
Gender	Male	58	16.80
	Female	288	83.20
Department	Classroom teaching	111	32.08
	Pre-school teaching	66	19.08
	English teaching	38	10.98
	Special Needs Education Teaching	38	10.98
	Guidance and Psychological Counseling	84	24.28
	Other departments (Turkish Language Teaching, Social Studies Teaching, Computer Teaching)	9	2.60
Previous university degrees	First university	296	85.55
	Second university	33	9.54
	Third university	10	2.89
	Fourth university	7	2.02

As seen in Table 1, 83.2% of the participants were female, and 16.8% were male. Of the participants between 18 and 38, 32.08% were the Classroom Teaching Department students, 24.28% were Guidance and Psychological Counseling Department students, 19.08% were Pre-School Teaching Department students, 10.18% were English Teaching Department students, and 10.18% were Special Needs Education Teaching Department students. Nine participants were from different programs. Besides, 85.55% had their first university degree, 9.54% had the second, 2.89% had the third, and 2.02% had the fourth university degree.

DATA COLLECTION TOOLS

The study data were collected using a "Demographic Information Form," "The Attitude Scale Towards the Teacher Candidates' Reading Habit," "The Scale of Pre-service Teachers' Self-sufficiency Perception of Speaking Skills," and "The Problematic Internet Usage Scale (PIUS)."

DEMOGRAPHIC INFORMATION FORM

Researchers developed the form including three questions about gender, department, and previous university degrees. In this way, we aimed to diversify the working group.

THE ATTITUDE SCALE TOWARDS THE TEACHER CANDIDATES' READING HABIT

The scale was developed by Susar Kırmızı (2012). There are 34 items in the 5-point Likert type scale, including 29 positive and five negative attitude statements. The lowest possible score is 34, and the highest possible score is 170. There are three sub-dimensions in the scale: "attitudes towards meeting the learning and entertainment needs," "attitudes towards the meaning and necessity of reading habits," and "attitudes towards developing reading habits." The Cronbach's Alpha reliability coefficient of the original scale was .95. In this study, Cronbach's alpha value was found to be .93.

THE SCALE OF PRE-SERVICE TEACHERS' SELF-SUFFICIENCY PERCEPTION OF SPEAKING SKILLS

The 5-point Likert-type scale was developed by Katrancı and Melanlıoğlu (2013). There are 25 items and five sub-dimensions on the scale: " public speaking," "effective speaking," "applying the speaking rules," "organizing the speech content," and "evaluating the speech." The lowest possible score is 25, and the highest is 125. The Cronbach's alpha reliability coefficient of the original scale was .92, while this study .94.

THE PROBLEMATIC INTERNET USAGE SCALE (PIUS)

The scale was developed by Ceyhan, Aykut-Ceyhan, and Gürcan (2007) to measure problematic internet use among university students. There are 33 items and three sub-dimensions in the scale: "excessive use (EU)," "negative consequences of the internet (NCOI)," and "social benefit/social comfort (SB/SC)." The internal consistency coefficient of the scale was.94, and the test-retest reliability coefficient was .81. The internal consistency coefficients of the sub-dimensions were .94, .85, and .74, respectively. The 5-point Likert-type scale was scored as "Not appropriate," "Not very appropriate," "Somewhat appropriate," "Appropriate," "Very appropriate" there were 17 items (9, 14-25, 27- 29, and 31) in the negative consequences of the internet sub-dimension, ten items (3, 4, 5, 8, 10, 11,13, 26, 32 and 33) in the social benefit/social comfort sub-dimension, and six items (1, 2, 6, 7, 12 and 30) in the excessive usage sub-dimension. Items 7 and 12 were scored in reverse.

DATA COLLECTION PROCESS

The necessary permissions and approvals were obtained from the Social and Human Sciences Ethics Committee of Hasan Kalyoncu University (No: E--804.01-BABBFCF3, Date: 23.04.2021). The study data were collected from the prospective volunteer teachers via a Google form during the spring term of the 2020-2021 academic year. The participants were briefly informed about the purpose of the research and voluntary participation and confidentiality. A short instruction about the scales was also given to the participants. The online surveys took approximately 30 minutes, and the data collection process was completed in May 2021.

DATA ANALYSIS

The obtained data were analyzed using descriptive statistics such as frequency, percentage, mean correlation analysis, and hierarchical regression analysis, which was carried out with the SPSS 24.0 program. In hierarchical regression analysis, researchers divide the variables into specific blocks according to logical or empirical findings and evaluate the effects of the variables in the blocks on the dependent variable (Büyüköztürk et al., 2016). The assumptions of the hierarchical regression analysis were assessed in detail in the findings section. Before the hierarchical regression analysis, it was checked whether the data was entered correctly into the file, and no errors were found. The second stage was to check if there was missing data in the data set, and no missing data was allowed. Finally, one-dimensional and multidimensional extreme values in the data set were assessed, and four participants with one-dimensional extreme values were excluded from the data set. No extreme multidimensional value was found.

FINDINGS

This section includes the findings regarding descriptive analysis, the multicollinearity problem, the relationships between the variables, and hierarchical regression analysis results.

DESCRIPTIVE INFORMATION REGARDING THE VARIABLES

Table 2 shows the minimum and maximum values, and mean and standard deviation scores of the attitudes towards reading habit -the dependent variable of the study- and the speaking self-sufficiency and problematic internet use- the independent variables.

Table 2. *Descriptive information on the variables*

Variables	N	Min.	Max.	Mean	Standard deviation
Attitudes Towards Reading Habit	346	40.00	167.00	99.3642	35.90229
Speaking self-sufficiency	346	28.00	125.00	95.1243	21.20635
PIUS-Negative Consequences	346	14.00	70.00	31.8526	15.69635
PIUS-Excessive Usage	346	6.00	30.00	18.9335	6.24975
PIUS-Social Benefit	346	7.00	35.00	16.5636	7.56864

As seen in Table 2, the participants' attitude mean scores were 99.36, and the standard deviation value was 35.90. The speaking self-sufficiency mean scores were 95.12, and the standard deviation value was 21.20. These two results show that attitude and self-sufficiency scores are above the average value. The mean scores in the negative consequences sub-dimension of the PIUS were 31.85, 18.93 in the excessive usage sub-dimension, and 16.56 in the social benefit sub-dimension. It is seen that the scores for the sub-dimensions are close to the average. The standard deviation scores were 15.69, 6.24, and 7.56, respectively.

THE MULTICOLLINEARITY PROBLEM

There should be no multicollinearity problem between the variables in order to perform the regression analysis, which is tested using binary correlations, tolerance values, variance inflation factor (VIF), and condition index (CI) values (Büyüköztürk, 2017). When the binary correlations between the variables were examined, they were below .80, the tolerance values were higher than .20, the VIF values were less than 10, and the condition index values were not higher than 30.

RELATIONSHIPS BETWEEN VARIABLES

Table 3 shows the correlations between the attitudes towards reading habits, speaking self-sufficiency, and problematic internet use.

Table 3. *The Correlations between attitudes towards reading habit, speaking self-sufficiency, and problematic internet use*

Variables	1	2	3	4	5
Reading Habit (1)	1				
Speaking self-sufficiency (2)	.35**	1			
PIUS-Negative Consequences (3)	-.008	-.44**	1		
PIUS-Excessive Usage (4)	.19**	.05	.47**	1	
PIUS-Social Benefit (5)	-.03	-.39**	.77**	.30**	1

** p<.01

As seen in Table 3, there was a moderate, positive, and significant correlation between speaking self-sufficiency and attitudes towards reading habits (p<.01). Accordingly, as the speaking self-sufficiency score increased, so did the attitude scores. When the correlations between the sub-dimensions of problematic internet use, reading habit, and speaking self-sufficiency were examined, negative and moderate correlations were found between the negative consequences sub-dimension and speaking self-sufficiency. There were positive but slight correlations between the excessive usage sub-dimension and reading habit. Moreover, there were negative and moderately significant correlations between speaking self-sufficiency and social benefit sub-dimension (p<.01). In other words, the sub-dimensions of problematic internet use and speaking self-sufficiency had negative correlations, and as problematic internet use increased, speaking self-sufficiency decreased, and vice versa. The positive and significant correlation between a sub-dimension of problematic internet use and reading habit referred that an increase in problematic internet use led to improvements in the attitude towards reading habit.

HIERARCHICAL REGRESSION ANALYSIS RESULTS

The effects of speaking self-sufficiency and problematic internet use in predicting reading habits were examined by performing a hierarchical regression analysis, and the findings are shown in Table 4 below.

Table 4. *The Hierarchical Regression Analysis Results*

Model	Predictor	B	SHB	B	ΔR^2	Tolerance	VIF
1	Speaking self-sufficiency	.60	.08	.35**	.12**	1.0	1.0
2	Speaking self-sufficiency	.67	.09	.39**	.03**	.71	1.4
	PIUS-Negative Consequences	.25	.21	.11		.29	3.4
	PIUS-Excessive Usage	.69	.34	.12*		.69	1.5
	PIUS-Social Benefit	.01	.37	.00		.39	2.5
	Constant	13.64	11.75	-			

*p<.05; **p<.01

The speaking self-sufficiency was added to the model first, and it explained 12% of the attitude towards reading. Secondly, the sub-dimensions of problematic internet use were added to the model. The analysis results revealed that only excessive usage sub-dimension was a significant predictor, which explained 15% of the attitudes towards reading habits.

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

This study aimed to determine the predictive power of the problematic internet use and speaking self-sufficiency on prospective teachers' reading habits and found that the participants' attitudes towards reading improved when they had high speaking self-sufficiency. Speaking is the most commonly used linguistic skill by teachers in the classroom. Healthy interactions between teacher and students, course efficiency, and fulfillment of educational goals are only possible with an effective communication process (Katrancı, 2014). The proficiency problems may lead to the loss of communication between teachers and students and students' losing interest in the lesson, which impose an important limitation to educational goals. Therefore, proficiency in speaking skills should be determined to remove communication barriers (Hayran, 2020). Therefore, the attempts to determine and improve university students' speaking self-sufficiency are crucial in this term.

Many studies in the literature have investigated the effects of reading habits on speaking skills and self-sufficiency (Hamzadayı & Büyükikiz, 2015; Hayran, 2020; Kantarcı, 2014; Kantarcı & Melanlıoğlu, 2013; Oğuz, 2009; Temizyürek et al., 2017; Varışoğlu, 2012). In one of the recent studies, Hayran (2020) emphasized that the increase in the number of books read by teacher candidates was correlated with the high speaking self-sufficiency scores. Similarly, Tekşan and Çinpolat (2018) found a positive correlation between teacher candidates' attitudes towards reading habits and speaking self-sufficiency perceptions. They stressed that as their attitudes towards reading habits increased, so did their speaking self-sufficiency perceptions, which overlapped with our findings.

One of the study findings was that speaking self-sufficiency decreased in parallel with the increase in problematic internet use. Several studies in the literature proved the correlations between long-term internet use and specific problems such as loneliness, depression, weak social relations, fewer close friends, and withdrawal from social interaction (Büyükgebiz Koca & Tunca, 2020; Esen, 2010; Morahan-Martin & Schumacher. 2000; O'Reilly Dogra et al., 2018; Sanders et al., 2000; Pawlak, 2002; Ceyhan & Ceyhan, 2008). Besides, in their study on secondary school students, Akalın and Adıgüzel (2020) found that students who spent approximately 1.5 hours or more on the Internet daily had higher speaking anxiety and less speaking self-sufficiency scores than those spending about 30 minutes daily. Since the internet is based on one-way communication, it negatively affects students' speaking skills and may trigger anxiety. Especially during the COVID-19 pandemic, the intentions to access the internet have become diversified among young people, and the time spent online has considerably increased. Therefore, it would be helpful to provide university students with online activities and interventions to improve their speaking skills. The teacher candidates with a high level of speaking skills and proficiency guarantee the rise of promising and vigorous generations.

The study results revealed a significant correlation between the excessive usage sub-dimension and positive attitudes towards reading habits. In other words, the problematic internet usage due to the pandemic led to an increase in the attitudes towards reading. There have been several social, cultural, and economic changes in daily life in Turkey and the whole world due to the Covid-19 pandemic, which has also changed reading practices and habits (Alnıaçık et al., 2021; Ghazawy et al., 2021; Popyk, 2021; Yang et al., 2021)

Considering the increasing demand for mobile applications, the time spent on the internet, and the integration of social daily life experiences into the digital environment, it can be suggested that the pandemic conditions offer young people reading opportunities. Although a global is inherently considered a disaster and an end, it can be seen as the symbol of new beginnings (El Maarouf et al., 2021). In other words, the pandemic can also be considered a chance for young people to step out of their comfort zone, contemplate their reading attitudes, behaviors, and habits, and gain new perspectives about their future lives (Buheji & Ahmed, 2020). The pandemic conditions have dramatically democratized and facilitated access to information. For example, digital dictionaries, articles, archives, private and public libraries, electronic encyclopedias, digital books, blogs, discussion forums, social networks, and web pages are one click away today, which also radically has changed the access to information, share networks and reading habits (Taşkıran, 2017). The act of reading, which is generally neglected under normal conditions, has increased through digital technologies during the pandemic, and the discomfort felt from the abundance of leisure has opened the doors of a new world to escape from the pandemic (Altun Ekiz & Kır, 2021). The findings before the pandemic showed that lack of time was the most common excuse for not reading books (Aslantürk & Şahintürk 2010; Karaşahin, 2009; Konan, 2013; Konan & Oğuz, 2013). The closure of schools and universities during the COVID-19 pandemic and the online courses play a critical role in time management, which is thought to improve planning skills and reading habits. Therefore, it can be inferred that this process contributes to the online reading practices of teenagers who have to stay home due to curfews and mandatory quarantine.

Finally, the hierarchical regression analysis results revealed that speaking self-sufficiency explained 12% of the attitude towards reading books. When the problematic internet use sub-dimensions were included in the second stage, it was seen that only the excessive usage sub-dimension was the significant positive predictor; in other words, speaking self-sufficiency and excessive usage explained 15% of the attitude towards reading habit. Thus, it can be stated that speaking self-sufficiency and problematic internet use played a positive and significant role in predicting reading habits. The digital age allows people to be ready for innovations and quickly achieve whatever and whenever they want. Therefore, it is inevitable to update reading habits. The reading behaviors in online environments should also be re-evaluated due to the pandemic. However, no study addresses this subject in the literature, suggesting further research. Future studies would provide detailed findings on the relations between reading and technology use, which would shed light on the technology-oriented life of the future.

The study was limited to the data collected from 346 university students using the cross-sectional survey method, and only quantitative techniques were used in the data collection process. Future studies can also use qualitative data collection techniques to enrich findings (Adams & Cox, 2008).

In conclusion, COVID-19 pandemic and technology-oriented new conditions have influenced university students' language skills (Karakuş et al., 2000; Kaplan & Gülden, 2021). Education faculties have important responsibilities in this regard. Creating learning environments where teacher candidates would improve their language skills and organizing and supporting skill development activities would bear positive results. Therefore, the research results have important implications for understanding the new reading behaviors and speaking self-sufficiency in young people in parallel with internet use and technological advances. Those results would guide future studies in this area.

AUTHOR CONTRIBUTION

-First author have been involved in drafting the manuscript or revising it critically for important intellectual content.

-The second author have made substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data.

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Relationships Between Teachers' Perceptions of Positive Psychological Capital and Organizational Happiness: Mediating Role of Organizational Silence*

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Abstract

Positive moods such as happiness that encourage interaction with the social environment were expected to be more favorable for organizational contribution and creativity than passive moods such as silence. Positive relationships between positive psychological capital and organizational happiness were expected in educational organizations where positive communication was the most desired. However, negative moods also had negative effects on creativity, and the negative work environments caused organizational silence. In this study, it was aimed to investigate the relationships among teachers' perceptions of positive psychological capital, organizational silence and organizational happiness. The research was designed as a relational screening model and the structural equation modelling technique was used to test the hypothesized model. Participants of the study consisted of 420 teachers working in public and private schools. The results showed that high levels of positive psychological capital were associated with both higher organizational happiness and lower organizational silence. In contrast, higher organizational silence was associated with lower levels of organizational happiness. Organizational silence mediated the relationship between positive psychological capital and organizational happiness. This study supported the idea that the effect of positive psychological capital on creating organizational happiness may decrease in school environments that cause organizational silence.

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INTRODUCTION

Educational institutions were among the institutions where human-to-human relations were most intense and inevitably these relations have affected the beginning, formation and quality of the educational process. Some schools, which were created by taking these effects into account, have succeeded in being different from others. Some of the features that were effective in defining those schools as seniors include ensuring that the right people became teachers and developing these teachers into effective instructors in the process (McKinsey, 2007). Given the task that teachers undertake in this process, it revealed the importance of their human characteristics while performing this task in a motivated way (Oplatka, 2010). Considering teachers as one of the important human resources of the education system, it could be thought that there was a relationship between positive psychological capital and organizational happiness that teachers were supposed to share at school, but organizational silence, which was defined as the unwilling and unmotivated person, might affect this relationship.

In terms of evaluating human behaviour, being positive was perceived as a weakness compared to the dominant nature of being negative (Fredrickson, 2009). Awakening fear, hatred, or grudge in the individual in relationships were often related to your actions, but the individual's respect for you, acceptance and appreciation were more about one’s evaluation of you. For this reason, it was necessary to take into consideration being positive, not being negative, in order to establish long-term and healthy relationships. This way of thinking emerged as positivism (Seligman & Csikszentmihalyi, 2000), and the organizational response of positive thinking was formed as positive psychological capital (Luthans & Youssef, 2004). The important feature of positive psychological capital (PPC) for organizations and managers was that it could be measured and developed. These features enable PPC to be seen as an administrative tool. According to Luthans, (2002) psychological capital (PsyCap) had four dimensions: hope, optimism, resilience, and self-efficacy.

When Luthans, (2002)'s psychological capital dimensions are examined, it is possible to associate hope, optimism, resilience, and self-efficacy with happiness. Happiness was a concept that the poet asks the painter whether he could paint happiness (Edgü, 1995), social scientists had not yet clarified the definition of hedonic and eudemonic (Fisher, 2010), but everyone was looking for it. It was also a concept defined as a full harmony and saturation of demand and tendencies (Akarsu, 1975). When these concepts were carefully examined, some conclusions might provide some important indicators for the organization. For example, philosophically, though the idea of hedonic happiness emphasized pleasure, what stands out in eudemonic thought was virtue (Boniwell, 2008). The concept to be underlined for organizations in this section was virtue. Doing what was worth doing in terms of motivation (Ryan & Deci, 2000) and the fact that happiness was not permanent showed that the concept of happiness might be used in accordance with organizational development as well as short and long term plans. Happiness was a desired emotion, employees feel happiness in every organizational goal achieved, and seeing a target as a new source of happiness could provide continuity for the organization.

The opposite of happiness can be thought of as unhappiness, but unhappiness can manifest itself in different ways as behavior and attitude, can silence be one of these indicators? Silence was previously a sign of satisfaction, mutual understanding, and compassion (Zeligs, 1961), nevertheless, silence was generally very closely related to anxiety (Sabbadini, 2004). People may want to withdraw themselves from a certain period of daily life and let things flow, and they may prefer silence during these periods. The content of the concept used in the sense of organizational silence was far beyond individual use, and for the first time it was defined as organizational silence by Morrison & Milliken, (2000), as employees intentionally hide problems about the organization or developer suggestions from the authorities. Also, defined by Pinder & Harlos, (2001) as organizational silence was the individual or individuals did not share what they had behavioural, cognitive or affective with the status of the organization they were in, with those who had authority about the change and development of the organization. Silence can be a sign of acceptance of defeat or virtually awaiting the right time, therefore, it is the duty of the manager to understand the source of silence and listen to their silences to help the teachers.

The consequences of organizational silence were negatively defined for the organization. And these negative results for organizations included damaging consequences such as believing that employees being invaluable, lack of negative internal feedback and low trust (Morrison & Milliken, 2000). Furthermore, organizational silence was considered to be detrimental to bottom-up information exchange, which degraded the quality of decisions of the top leaders. In particular, the lack of negative internal feedback and bottom-up information exchange could be a barrier to organizational change, as well as converted managers to the naked king as in Hans Christian Andersen's tale The Emperor's New Clothes.

THEORETICAL FRAMEWORK AND CONCEPTUAL MODEL

POSITIVE PSYCHOLOGICAL CAPITAL AND ORGANIZATIONAL HAPPINESS

Positive moods such as happiness that encouraged interaction with the world were more favourable for creativity than passive moods like calm (Robbins & Judge, 2013). Significant relationships were found between positive psychology and organizational happiness in educational organizations where positive communication was most expected (Özen, 2018). Having a high level of positive psychological capital competence was an important factor that helped teachers actively survive and made a strong contribution to personal and organizational happiness (Tosten & Toprak, 2017). Finally, in another study by Luthans & Youssef, (2004), positive psychological capital was found to have a positive effect on performance, organizational happiness and commitment to work and the following hypothesis was proposed.

H1: Positive psychological capital had positive and significant effect on organizational happiness.

POSITIVE PSYCHOLOGICAL CAPITAL AND ORGANIZATIONAL SILENCE

Self-efficacy, which was one of the components of positive psychological capital, was defined as the motivation and sense of trust that an individual needed to successfully perform a certain task in certain actions in the organization (Luthans & Youssef, 2004). This definition showed the competence of the individual to find solutions to the problems encountered in the organizational environment and to participate in the decision-making process. Employees who received positive feedback and appreciation from their manager might believe that they would be successful not only in the job they appreciate but also in all other tasks they were to choose (Luthans et al., 2007). On the other hand, one of the reasons for the emergence of organizational silence was that the individual felt invaluable in the working environment and lack of trust towards senior management (Morrison & Milliken, 2000). Negative moods also always had negative effects on creativity (Robbins & Judge, 2013) and these negative work environments that did not build trust cause silence. This information showed that there was a negative relationship between positive psychological capital and organizational silence, and the following hypothesis was proposed.

H2: Positive psychological capital and organizational silence had negative relationship.

ORGANIZATIONAL SILENCE AND ORGANIZATIONAL HAPPINESS

Silence might be considered as accepting, not causing trouble, or it could be argued that it was due to ignorance. However, research shows that silence should be interpreted differently, especially within the organization. Silence or interruption of communication may be considered both as common and problematic (Morrison & Milliken, 2000). In addition, the assumption that silence stems from ignorance did not bring happiness as it would not meet the expectations of success, recognition and appreciation in a work environment where knowledge was considered power (Bolman & Deal, 2003). Moreover, realizing that a work was done wrong way even though they knew how to do it, and being silent in this situation disturbs the human. Morrison and Milliken, (2000) viewed organizational silence as a potential obstacle to organizational change and development. Nevertheless, they highlighted that silence reduced job satisfaction and job loyalty by reducing organizational commitment and trust. In their research Fard & Karimi, (2015) stated that there was an inverse and significant relationship between organizational silence and job satisfaction and organizational commitment. The negative consequences of organizational silence on the employees could be listed as feeling weak about expressing their ideas and opinions about the job, decreased sense of organizational commitment, belonging, trust and support, job dissatisfaction, and also desire to quit the job (Çakıcı, 2008). In this and similar studies mentioned above, job satisfaction and happiness were used in the same sense. As Moçoşoğlu & Kaya, (2018) stated a negatively significant but weak relation was found between the organizational silence behaviours and organizational happiness of the teachers in schools. As a result, there was a reverse relationship between organizational silence and organizational happiness, and the following hypothesis was proposed.

H3: Organizational silence had negative and significant effect on organizational happiness.

POSITIVE PSYCHOLOGICAL CAPITAL, ORGANIZATIONAL SILENCE AND ORGANIZATIONAL HAPPINESS

The presence of positive psychological capital in the school meant that the teachers who made up the organization mostly had the self-efficacy to perform their duties, the hope of success in this task, the optimism of retry in the face of failure, and the resiliency capacity to motivate themselves again (Luthans, Youssef, & Avolio, 2007). The satisfaction and happiness of the teachers working in this positive environment would increase. The positive psychological capital in the institution indicated the higher job satisfaction and motivation of the members of the institution, the good feelings of the employees in the work environment and their commitment to the institution (Akbaba & Altındağ, 2016).

As studies on the concept of success showed that happiness was not only the result of success, but also its trigger (Diener et al., 2008). On the other hand, as the competence levels of the school increased, the organizational happiness levels of the employees were expected to increase and the organizational silence behaviour decreased (Demirtaş, 2018). Organizational silence triggered teachers' internal dissatisfaction, increased their anxiety and stress, and thus reduced their performance (Dal & Başkan, 2018). Internally motivated individuals participated in activities that interest them without expecting any financial reward (Deci, Vallerand, Pelletier, & Ryan, 1991) and they were happy for a sense of relatedness regardless of outcome of their actions (Ryan & Deci, 2000). Consequently, positive psychological capital would have a positive effect on organizational happiness and a negative effect on organizational silence, and also organizational silence would have a negative effect on organizational happiness and the following hypothesis was proposed.

H4: Organizational silence negatively mediated the relationship between positive psychological capital, and organizational happiness.

METHOD

The data of this study were collected using a questionnaire and structural equation modeling was applied to test the hypotheses (Kline, 2011). In this section, data collection tools and statistical analysis techniques used in the evaluation of the collected data were given.

MEASURES

To reach the purpose of the research; Positive Psychological Capital Scale developed by Tösten & Özgan, (2014) to measure teachers' perception of PPC; Organizational Silence Scale (OS) developed by Kahveci & Demirtaş, (2013) and Organizational Happiness Scale (OHS) developed by Demo and Paschoal (2013), adapted to Turkish by Arslan & Polat, (2018) were used.

Positive Psychological Capital Scale (Tösten & Özgan, 2014) had 6 subscales consisting total 26 items. The subscales were hope (three items), self-efficacy (four items), optimism (five items), resiliency (five items), trust (four items) and extraversion (five items). Sample item included: I can find solutions to unexpected problems. CFA was made within the scope of validity and reliability and Cronbach's Alpha reliability coefficient was calculated. The coefficient alpha in the current study for hope .913, for self-efficacy .931, for optimism .913, for resiliency .942, for trust .946 for extraversion .930 and for the entire scale was ,947. As a result of the CFA, the compliance values for the positive psychological capital scale were found as chi-square / sd = 2.479, RMSEA = 0.059, SRMR = 0.022 CFI = 0.970, TLI = 0.966 and GFI = 0.947.

Organizational Silence Scale (Kahveci & Demirtaş, 2013) had 5 subscales consisting total 18 items. The subscales were school environment (four items), emotion (three items), source of silence (five items), administrator (three items) and isolation (three items). The high score of the participants from the Organizational Silence Scale was interpreted as meaning that the organizational silence levels were high, while the low score was interpreted as the low level of organizational silence. In the scale, only one item (Item 3) was reversed. Sample item include: The fact that school administrators do not treat teachers fairly prevents teachers from expressing their opinions. CFA was made within the scope of validity and reliability and Cronbach's Alpha reliability coefficient was calculated. The coefficient alpha in the current study for school environment .711, for emotion .851, for source of silence .721, for administrator .826 for isolation .865 and for the entire scale was .938. As a result of the CFA, the compliance values for the organizational silence scale were found as chi-square / sd = 3.961, RMSEA = 0.097, SRMR = 0.036, CFI = 0.940, TLI = 0.915 and GFI = 0.904. When the fit values were analysed, it was seen that the chi-square / sd ratio and GFI values were at the acceptable limit values and the other indices had good fit quality.

Organizational Happiness Scale (OHS) developed by Demo and Paschoal (2013) had 3 subscales consisting total 29 items. The subscales were positive affect (nine items), negative affect (twelve items), and fulfilment (eight items). Item 12 in the negative emotions was reversed. The subscales were not scored and evaluated separately, and the total score was obtained for the entire scale. The high scores of the participants from the scale was interpreted as the increase in organizational happiness levels, and the low scores were in the form of decreased organizational happiness levels. Sample item included: Over the past six months, my work made me feel happy. CFA was made within the scope of validity and reliability and Cronbach's Alpha reliability coefficient was calculated. The coefficient alpha for the current study was ,941. As a result of the CFA, the compliance values for the organizational happiness scale were found as chi-square / sd = 3.094, RMSEA = 0.076, SRMR = 0.059, CFI = 0.919, TLI = 0.910 and GFI = 0.904.

PARTICIPANTS

The participants of the study were teachers working in public and private schools in the 2018-2019 academic year in Turkey. The minimum sample size to ensure appropriate use of Maximum Likelihood (ML) estimation in studies where SEM was used was about 200 cases (Kline, 2011). Information on 420 teachers who participated voluntarily in the research was given in Table 1.

Table 1. *Demographic Information of Participants*

Variables	*Categories*	*f*	*%*
Gender	Woman	180	42,9
	Man	240	57,1
	Total	420	100
Job titles	Administrator	68	16,3
	Teacher	352	83,7
	Total	420	100
Educational Status	Bachelor degree	329	78,3
	Postgraduate	91	21,7
	Total	420	100
School stages	Primary school	280	66,7
	Secondary school	90	21,4
	High School	50	11,9
	Total	420	100
Length of service (seniority)	1-10 years	190	45,3
	11-20 years	147	34,9
	21 and over years	83	19,8
	Total	420	100

According to the data in Table 1, 42.9% of 420 teachers were women and 57.1% were men. The majority of the participants (83.7%) were teachers and 78.3% of the group had a bachelor degree while 21.7% had postgraduate degree. 66.7% of the participants were primary school teachers, 21.4% were secondary school teachers, 11.9% were high school teachers. Finally, most of the teachers in the group (45.3%) had seniority between 1-10 years. Simple random sampling was used for sample selection. In the selected sample, an online, controlled access electronic scale was applied to the teachers.

RESULTS

Descriptive Statistics and Structural Equation Model (SEM) analysis were used in the analysis of the data. Calculated construct reliability (CR) for all construct ranged between (Cronbach's alpha) 0.71 to 0.94 which indicates appropriate reliability. Univariate and multivariate normality assumptions were examined before proceeding with statistical analysis. In this context, univariate multivariate normality (kurtosis and skewness, Mardia's multivariate normality coefficient and critical ratio (c.r) value, multivariate were checked.

It was concluded that the skewness and kurtosis coefficients calculated for the research variables varied between +1 and -1. In this context, it can be said that univariate normality was achieved (Kline, 2011; Büyüköztürk, 2007). Organizational silence, positive psychological capital and organizational happiness scales were accepted as normal distribution because the skewness and kurtosis values were between ± 1.5 (Tabachnick & Fidell, 2013; Bayram, 2010). Within the scope of multivariate normality, Mardia coefficient was calculated as 1.63 and critical rate (c.r) value was calculated as 1.8. According to Bayram, (2010), the Mardia coefficient was less than 1.96, and according to Tabachnick & Fidell, (2013), the critical ratio (c.r) value was less than 5 was an indicator of multiple normal distribution. Because normality assumptions were confirmed, the most likelihood estimation method was used in this research.

Various criteria were taken as reference in the evaluation of the model tested and the CFA model fit. Within the current investigation, the chi-square/sd ratio, RMSEA, SRMR, CFI, TLI and GFI values recommended by many researchers were used to evaluate the CFA results and the research model of the scales (Bayram, 2010; Brown, 2006; Kline, 2011). Criteria for goodness of fit values was evaluated according to Table 2.

Table 2. *Criteria for goodness of fit values*

Fit Indices	*Good fit*	*Acceptable fit*
χ2/df	≤2	≤ 2-5
RMSEA	≤0,05	≤ 0,80
SRMR	≤0,05	≤0,10
CFI	≥0,95	≥0,90
GFI	≥0,95	≥0,90
TLI	≥0,95	≥0,90

As a result of SEM analysis in Tablo2, direct, indirect and total effects were also obtained. These effect sizes were interpreted as around .10 small, around .30 medium and over .50 large impact (Kline, 2011).

MEASUREMENT MODEL

As a result of examining the measurement model and the relationships between the variables, it was observed that there was a strong relationship between the variables, structural model accuracy was achieved in the covariance relationship related to the structures, and there was no common method variance in terms of data collected from a single source. Standardized errors (between 0.026 and 0.039) on the path coefficients were found to be low. With the verification of the measurement model, path analysis was started.

Goodness of fit values for the model tested; Chi-square / sd = 3.152, RMSEA = 0.052, SRMR = 0.048, CFI = 0.93, TLI = 0.94 and GFI = 0.91. It can be said that the obtained goodness of fit values was good and the model was confirmed.

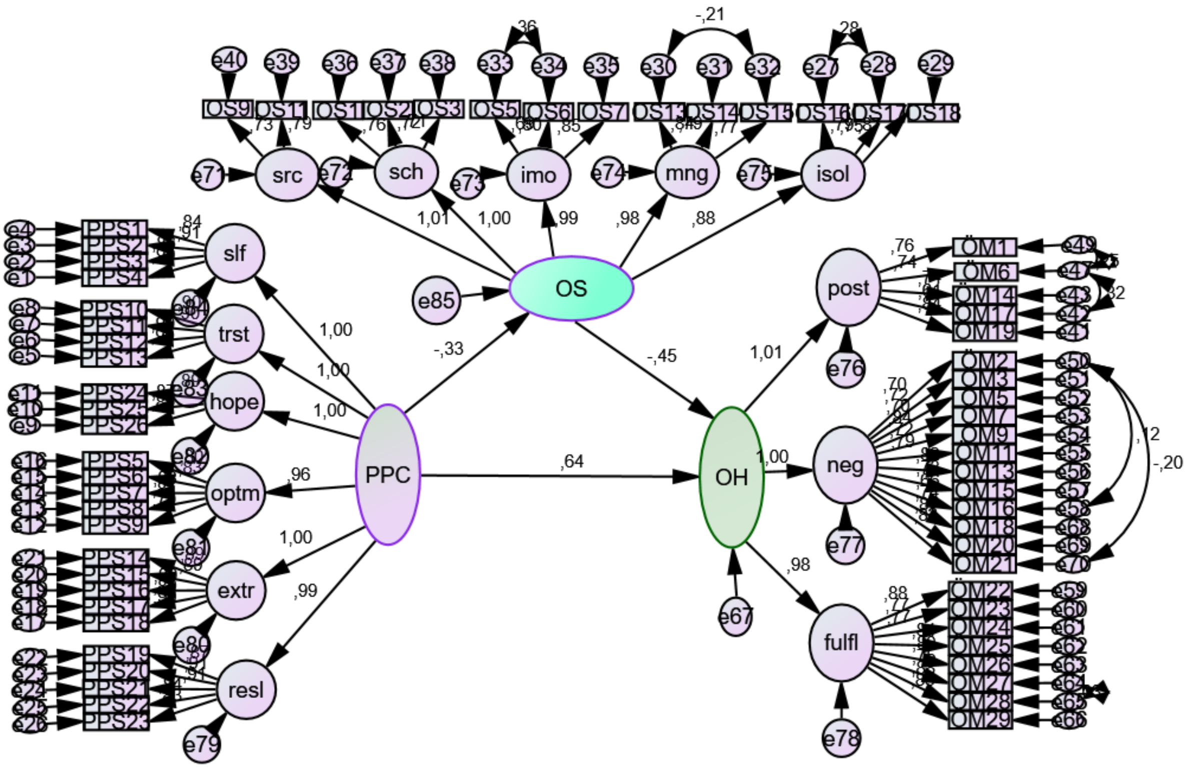
Direct and indirect effects of variables were estimated at the structural model stage. Table 3 shows the results of the path analysis results. Table 4 and Figure 1 represent standardized direct, indirect and total effects.

Table 3. *Path analysis results for the relationship between Positive Psychological Capital, Organizational Silence and Organizational Happiness*

Path	*B*	*β*	*S.E.*	*C.R.(t)*	*p*	*Conclusion*
H1 OH < --- PPC	.687	.642	.041	7.984	***	Supported
H2 OS < --- PPC	-1.049	-.326	.044	-12.043	***	Supported
H3 OH < --- OS	-.146	-.448	.049	-11.808	***	Supported
χ2=113,864; sd=31 (***p<.001)						

When the path analysis results were evaluated, it was seen that the paths drawn between the research variables were significant (t> 1.96; p<0.001; p<0.01). When the results of the estimation related to the research model in Table 3 were examined, it is seen that positive psychological capital in schools positively predicts the organizational happiness (β=-.64; t=-7,984; p<.01), positive psychological capital predicts teachers' organizational silence in a negative way (β=-.32; t=-12,043; p<.01) v and organizational silence negatively predicted organizational happiness (β=-.448; t= -11,808; p<.01) in terms of teacher perceptions.

Figure 1. *Structural Model SEM*



In the model given in Figure 1, besides the direct and indirect effect of positive psychological capital on organizational happiness, organizational silence had a direct effect on organizational happiness.

Table 4. *Standardized Direct, Indirect and Total Effects of the Model*

		Organizational Happiness			
		Direct Effects	*Indirect Effects*	*Total Effects*	*Conclusion*
H4	Positive Psychological Capital	.64	-.15	.49	Supported
	Organizational Silence	-.45		-.45	

When standardized direct effects were examined, it was seen that positive psychological capital had a larger effect (.64) on the perception of organizational happiness and organizational silence had a larger effect (-.45) on organizational happiness. When the indirect effect was examined, it was determined that positive psychological capital had smaller effect (-.15) through organizational silence on organizational happiness. Indirect effects can also be interpreted as mediator effects (Kline, 2011).

When these results were evaluated together, it can be said that organizational silence had a mediator effect in the relationship between positive psychological capital and organizational happiness. When the total effect of positive psychological capital on the perception of organizational happiness is analysed, it was seen that positive psychological capital had a larger effect (.49) on organizational happiness.

CONCLUSION

Suppose we, as educators of the twenty-first century, designed a contemporary individual. When determining the characteristics of this individual, we want to add some psychological codes among the skills. The individual we designed could be creative enough to deal with complex tasks that had the power to fight to achieve their goal and could have enough energy to act to achieve success. Another important feature of this individuals could be that when they failed, they could evaluate the situation and own self then acted more willingly than before to start again. Imagine that there were a dozens of these qualified people in the organization you work or manage, and this dream could be called as organizational happiness. The findings of this study indicated that there was a positive and significant relationship between positive psychological capital and organizational happiness. According to these results, the H1 hypothesis was supported. These findings of the study were consistent with Özen, (2018), Tosten & Toprak, (2017), Luthans & Youssef, (2004) findings.

It may not always be what we want in business and in schools as it is in real life. Different reasons can lead us to failure and in these cases, our organizational response can trigger a chain of events that will lead to the continuation or damage of the organization. A relationship of positive psychological capital and happiness means not walking on the beach on a sunny day but having skills to overcome difficult times. In this context, the results of this study emphasized that managers should take these concepts into account when selecting and managing working teams.

The findings of the study indicated that there was larger negative effect between positive psychological capital and organizational silence. According to these results, the H2 hypothesis was supported. These findings were similar to those of Luthans & Youssef, (2004), Luthans et al. (2007), Morrison & Milliken, (2000). When the result obtained from the findings was evaluated in terms of organizational management, it was equivalent to the fact that the captain does not consider the crew on the same ship and the crew does not inform the captain about the leak on the ship. The sinking of the ship will not benefit anyone. The school administrators' knowing the psychological capital of their teammates allows the administrators to know the potential of the teachers. It also allows managers to realise that silence was a precursor to something going wrong in the organisation and a barrier to success.

Research findings indicated that organizational silence had a negative and large impact on organizational happiness. According to these results, the H3 hypothesis was supported. These findings were consistent with the findings of Morrison and Milliken, (2000) Fard & Karimi, (2015) Çakıcı, (2008) Moçoşoğlu & Kaya, (2018). Some of the administrator behaviours that lead to organizational silence can be listed as indifference, rejecting the suggestion, ignoring employees, and belittling, and point out that teachers were not happy to work in the school environment where these behaviours were observed. It can also lead to a decrease in school and student performance as a result of decreased organizational happiness. Because these research findings were related to the psychological well-being of teachers, the findings were also important for educational outcomes and student experiences. This importance should be taken into account by the administrators and other teachers who show behaviours that cause silence at school.

It was revealed by many studies (Luthans, Youssef, & Avolio, 2007; Akbaba & Altındağ, 2016; Diener et al., 2008; Demirtaş, 2018) that teachers who struggle with different difficulties in different countries in educational institutions had high positive psychological capitals and this capital was associated with happiness. Teachers were individuals who were happy with the positive reflection of the successful results they have achieved by using their potential and many of them have the power to struggle with professional difficulties for this feeling of happiness. it was the latest of the findings of this study that teachers 'positive psychological capital was driven into organizational silence, reducing teachers' sense of happiness.

DISCUSSION

Current research findings showed that there was a strong positive relationship between positive psychological capital and teachers' perceptions of organizational happiness, but also shows that organizational silence reduces the effect of positive psychological capital on organizational happiness. According to these results, the H4 hypothesis was supported. As an open system, a significant part of their input and output in schools was human; it was recommended that those who manage these institutions work to increase the positive psychological capital of teachers and to reduce their organizational silence.

School administrators need to carry out studies and projects to strengthen teachers' psychological capital. The basic philosophy of these studies and projects should be to consider the teachers valuable and respect them. The results of the research could be inferred that teachers do not choose silence because they cannot find someone who listens to them, they become silent because they cannot find someone who understands them. In addition to listening to teachers, managers should show that they consider teachers' ideas, so that managers can increase the teachers’ happiness and positive psychological capitals.

As a result, teachers try to contribute to their own careers and especially to the education of students, as well as to the performance of the institution they work at. Teachers who try to struggle with difficulties for this purpose prefer silence when they realize that administrators do not value them and teachers lose their trust in management. In the end, this silence makes teachers unhappy on an individual basis and then throughout the institution. Finally, this silence makes teachers unhappy on an individual basis, and then this silence causes unhappiness for the whole school. Because although teachers know how to do a work, they cannot be happy to see that the work is done wrong way because of their professional character

SUGGESTIONS

In this study, teachers ' organizational happiness regardless of work experience, educational level, age and gender was investigated. Teachers ' levels of organizational happiness may vary according to these variables. In addition, variables other than organizational silence can also have mediator effects on the relationship of positive psychological capital and organizational happiness. Further studies were proposed by considering the moderate role of different variables and comparing the results with these study results.

DECLARATIONS

- The article was written by a single author, who read and approved the final published version of the article
- The author declared no conflict of interest
- The preliminary findings of this study were presented in VIth International Eurasian Educational Research Congress, 19-22 June 2019 held in Ankara University. The second

author of the proceeding withdrew from the article process and declared the decision in writing.

- The research was conducted in accordance with ethical rules.
- The datasets generated during and/or analysed during the current study is available from the corresponding author upon reasonable request.

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Impact of Different Types of Argument Maps on Critical Thinking: A Quantitative Study with the Pre-Service Science Teachers in Turkey

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Abstract

The aim of the study was to examine the impact of the use of argument maps by final year students of the science-teaching program on critical thinking. In the research, out of experimental research models, quasi-experimental pre-test-post-test control group design was used. Sample of the study consisted of 84 final year pre-service science teacher studying in three different classes in the fall semester of 2017-2018 academic year. While one of these classes was identified as control group, the other two classes were determined to be experimental groups at the beginning of the study. In the control and experimental groups, lectures on the subject of “Optics” were held with the Argument Based Inquiry (ABI) approach for 8 weeks in total. Different from control groups, experimental groups created eight individual argument maps in total within the framework of weekly subjects. In addition to the individual argument maps, one of the experimental groups created collaboratively argument maps for 4 weeks. collaboratively argument map practices were performed with 17 small groups consisting of two persons. Researchers were involved in the collaboratively map creation process as guides. Critical Thinking Test was used as measurement tool at the beginning and end of the practices. Data were analysed through one-way ANOVA via the SPSS program. At the end of the analysis, it was concluded that individual and collaboratively argument mapping practices were effective in the development of critical thinking skills of the pre-service teachers.

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INTRODUCTION

It is stated that one of the fundamental aims of education is to make the students acquire the general thinking skills and critical thinking skills, in particular (National Science Education Standards 1996; van Gelder 2005; MNE 2013; MNE 2018). It can be said that the main goal of higher education institutions is to develop critical thinking of university students who constitute the potential workforce of the future in the 21st century (Halpern, 2014). Moreover, the World Economic Forum declared that critical thinking is the third most demanded skill. Critical thinking is frequently emphasised as a key '21st century skill' that all students need in order to prepare for higher education and the workplace (Kuhn, 2015). It is important to develop thinking skills that include critical thinking elements as it will help individuals make critical and smart decisions in their work lives (Zulkifli, Abd Halim, & Yahya, 2016). At this point, it is even more important to improve the critical thinking skills of the pre-service teachers as the teachers of the future. However, despite the emphasis on critical thinking as a basic skill, the current evidence suggests that this skill is not taught commensurately in universities (Davies & Barnett 2015; Davies 2011; Huber & Kuncel, 2016). A recent study revealed that US employers believe that graduates do not have the critical thinking ability required for success in business life, and only 39% are competent (Association of American Colleges and Universities, AACU, 2021). Considering these findings, the focus should be on what are effective instructional practices to improve students' critical thinking levels. Emphasizing that critical thinking is a learned skill requiring education and practice, Synder and Synder (2008) stated that the students should be actively involved in learning for the development of this skill. One of the environments supporting critical thinking is argumentation practices, which contain research and inquiry based processes. Andrews (2015) points out that both critical thinking and argumentation overlap in certain regions and that both have various pedagogical implications for teaching and learning in higher education. Therefore, it can be concluded that it is important to focus more on argumentation, which is one of the ways to encourage critical thinking. In this respect, it is important for students to reflect on what they have learned, try to apply new ideas, compare their own ideas with the information in the books and actively discuss what they have learned in small groups (Paul, Binker, Jensen, & Kreklau, 1990). In fact, it can be said that these practices reflect the argumentation process.

Richard Paul (2011) emphasises the importance of specifying and evaluating arguments in critical thinking, and, as such, highlights the relationship between two concepts (critical thinking and argumentation). Similarly, the argumentation process reflects a discussion process that takes shape based on written and oral arguments. Social negotiation is considered the main activity of argumentation, as it addresses uncertainty between different or controversial arguments and emphasises a collaborative discussion process (Chen, Benus, & Hernandes, 2019). Throughout this social negotiation, attention is drawn to the use of language elements such as discussion and writing in the formation of arguments and scientific knowledge (Cavagnetto & Hand 2012; Chen, Hand, & Park 2016).

In this study, individuals mostly use the speaking dimension of the language during the negotiations in the argumentation process, whereas argument mapping, which is a writing activity, also supports the writing dimension of the language. As Rivard and Straw (2000) stated, speaking in this process makes it possible to create, share, explain and distribute scientific ideas, while writing ensures the creation and reinforcement of new knowledge related to prior knowledge. In addition, it is thought that if individuals go through these processes cyclically, it will help raise their awareness of their own reasoning. Therefore, in this study, it was aimed to support the scientific negotiation process by using argument maps in addition to the argumentation process. It is stated that criticism entails the ability not only to identify the elements of an argument, but also to assess the validity of data and supports for competing alternatives (Osborne, Simon, Christodoulou, Howell-Richardson, & Richardson, 2013). In addition, an argument map contains important argumentative information, such as how an argument was constructed, including evidence, reasons and objections; what was concluded and what was not supported within the framework of simple rules (van der Brugge, 2018). In particular, it is stated that an argument map ensures that critical thinking skills such as interpretation, analysis, evaluation, explanation, self-evaluation and self-regulation are used significantly (Toulmin, 2003). For this reason, in the present study, argumentation and argument mapping applications were used simultaneously, as it was thought that this would support various skills such as identifying, evaluating and analysing arguments which have an important place in critical thinking. In addition, due to the emphasis on the social negotiation process in argumentation, collaborative argument mapping activities which could provide such an environment were included in the creation of argument maps. Therefore, argumentation and argument mapping activities ensure that social negotiation is conducted in the form of oral and written discussions. Considering these situations, argument mapping, in particular, has significant potential to improve critical thinking. However, it has been observed that still there are limited studies on this subject (Kabataş Memiş & Çakan Akkaş, 2020; Butchart et al. 2009; Dwyer, Hogan, & Stewart 2012; Kunsch, Schnarr, & van Tyle 2014; Uçar & Demirarslan Cevik 2020; van Gelder 2002). In the light of this data, this study aims to examine the effect of argument mapping on the critical thinking skills and tendencies of pre-service teachers.

CONCEPTUAL FRAMEWORK

CRITICAL THINKING

Human beings are distinguished from the other living creatures with the ability to think and can make sense of what is going around thanks to this ability. Thinking is an important skill, which ensures systematic linguistic, mental and social development in the individuals, help them learn information and shape the plans for the future (Güneş, 2012). However, in today's conditions where standard thinking is not adequate, individuals need to have quality thinking skills. Thus, Paul (2012) emphasizes the importance of the formation of evidence-based and justified ideas for quality thinking instead of simply suggesting ideas. The word "critical" is derived from "kritikos", which means judgment, distinction and assessment in Greek, and evolved into "criticus" in Latin and was incorporated into the other languages, as well. "Critical thinking", which has referred to thinking in an objective and detailed manner, in depth and away from the fixed ideas ever since the era of Socrates, is accepted as the most advanced and developed mode of thinking (Fettahlıoğlu & Kaleci, 2018). Owing to these features, it can be argued that critical thinking is a quality thinking.

When the literature is examined, it is seen that there are different definitions for critical thinking. Critical thinking refers to the identification of a problem encountered, detection of assumptions concerning the problem and testing of the reliability and validity of the assumptions through the use of induction, deduction and other logical processes along with the existing information and data sources (Kennedy et al., 1991). Critical thinking is reflective and logical thinking performed by a person while deciding on what to do or what to believe (Ennis, 1993). According to Paul and Elder (2008), critical thinking is a way of thinking where a person guides, disciplines, monitors and confirms oneself. In fact, it is stated that many definitions of critical thinking agree on the value and importance of recognising and forming arguments as reasoning skills (Davies & Barnet, 2015).

According to the definitions of critical thinking in the literature, there are two subdimensions of critical thinking as cognitive (skill) and affective (disposition). It can be stated that the basic skills emphasized in critical thinking are analysis, assessment, deduction, explanation and self-regulation (Facione, 2015). As for the disposition dimension of critical thinking, it is expressed as the characteristics that the individuals possess while deciding on what to believe (Ennis, 2011). Facione et al. (2000) stated that dispositions related to critical thinking are cognitive maturity, being analytical, open-mindedness, curiosity, self-confidence, seeking for the truth and being systematic. When the individuals having the critical thinking skills lack the adequate critical thinking dispositions, they will get difficulty in using these skills (Seferoğlu & Akbıyık, 2006). Therefore, development of the skill and disposition dimensions of critical thinking in a coordinated manner is of great importance for the development of critical thinking.

ARGUMENT MAPPING

In addition to the positive impact of the ABI approach on critical thinking, it has recently been stated that creating argument maps, which allow for examining and analysing the argument structures in an effective manner, is effective, as well (van Gelder, 2015). Argument maps are the tools used for the visualisation of an argument structure. At this point, knowing what an “argument” is and what are the components that the concept of argument includes is important. While argument includes a claim, data, reason and supporting elements, the process of discussion endowed with these elements is called as “argumentation” (Osborne, Erduran, & Simon, 2004). As for an argument map, it refers to the visual presentation of an argument structure and discussion in a systematic manner. An argument map, which is the two-dimensional representation of an argument structure, is a tree-shaped diagram of boxes and arrows (Twardy, 2004). The direction of the boxes and arrows changes depending on the roles of reasons and objections in the argumentation structure (ter Berg & van der Brugge, 2013). Argument map is created by considering the reasons supporting the main claim as well as the relation between the main claim and the other claims (Davies, 2010). At one end of the argument map, there is a claim expected to be supported while reasons supporting the claim or objections to the claim are located at the other ends (Twardy, 2004).

Organizing an argument structure in an hierarchical manner and in the form of pyramid is important so that a mental picture is created for the whole argument and answers are sought for the questions aiming to reveal the relation between the claims (van Gelder, 2002). Argument maps serve visual presentation of the arguments having deductive structures through graphic techniques.

Creating an argument map enables the analysis of the hierarchical relationships between components and the evaluation of the validity and quality of the argument (Kim, 2015). An argument map organized in this manner allows for transforming the abstract structure of reasoning into a concrete conceptual structure (ter Berg & van der Brugge, 2013). As a conclusion, an argument map is a visual structure where elements of an argument are represented in a transparent and effective manner (van Gelder, 2005). Computer-aided argument mapping is a technology-based pedagogical tool that provides a suitable learning environment for developing complex learning outcomes such as critical thinking (Davies, 2011).

THE USE OF ARGUMENT MAPPING TO ENHANCE CRITICAL THINKING

As in all phases of education, developing basic skills of the students at the level of higher education as well as their critical thinking skills is important. For training individuals able to think critically, contents of the courses taken during the university education need to be reorganized to serve this purpose and problem solving and critical thinking practices related to the areas of interest should be included in the courses (Kökdemir, 2012). Pointing out that critical thinking is a teachable skill, van Gelder (2015) stated that reasoning and discussion are key for critical thinking. Davies and Barnet (2015) stated that critical thinking in higher education consists of six dimensions that are different from, but are integrated with, each other: (1) basic skills in critical argumentation (reasoning and inference), (2) critical judgements, (3) critical thinking dispositions and attitudes, (4) critical entities and actions, (5) social and ideology criticism and (6) critical creativity or critical openness. Thus, the importance of including the ABI approach containing reasoning and discussion activities and argument map creation activities into the learning process has increased.

Argumentation based inquiry (ABI) activities allow for problem solving, decision making and critical thinking developments of the individuals and motivate them for high level thinking (Hand, 2008). Scientific discussions held within the scope of the ABI approach, which includes above-mentioned activities and a research-inquiry based learning process, play a key role in the development of both critical thinking skills and dispositions of the students (Kabataş Memiş, 2016). In particular, students can use many critical thinking skills such as those related to analysing, evaluating and interpreting thanks to the discussions they participate in this process (Sönmez, Kabataş Memiş & Yerlikaya, 2021; Sönmez, Çakan Akkaş & Kabataş Memiş, 2020). This shows the necessity of integrating the activities based on the ABI approach into the classroom environments for the development of critical thinking. Effective ABI practices may allow for the training of the students who are responsible for their own learning experiences, are more active in the learning process, can inquire and question and know the ways of reaching new information.

Integrating argument mapping into ABI-based applications allows students to reflect, evaluate and correct themselves by looking at visual representations of their arguments (van Gelder, 2001). It has been argued that the intensive realization of argument mapping from easy to difficult in the instructional process is effective in the development of critical thinking (van Gelder et al., 2004). Since computer-assisted argument mapping guides by providing frameworks that will give the necessary support in individual studies, computer-assisted argument mapping offers more opportunities for effective implementations compared to traditional methods using paper and pencil. For example, when students select a component while creating argument maps with the help of frameworks, the system can advise them on what to do next (van Gelder, 2001). Also, due to its visual and easily editable structure that reduces the complexity of arguments, computer-assisted argument mapping allows intensive implementation in a limited time. In this regard, computer-assisted argument mapping is considered a tool that supports effective practices in the development of critical thinking.

There are studies examining the effectiveness of argument mapping on the development of critical thinking (Butchart et al. 2009; Dwyer et al. 2012; Kunsch et al. 2014; Sönmez, et al. 2020; Ucar & Cevik 2020; van Gelder et al. 2004). It is noteworthy that most of the studies were carried out within the scope of the critical thinking course, and the students made argument mapping individually (Butchart et al. 2009; Dwyer et al. 2012; Kunsch et al. 2014; van Gelder et al. 2004). In addition, it was observed that the effect of argument mapping on critical thinking skills was also examined in these studies. Although the results of the previous studies show that argument mapping has a significant impact on the development of critical thinking, as the present study, when it is carried out in different disciplines such as the context of physics subjects and based on different instructional applications such as individual or interactive, it has been observed that there has not been enough study on the effect of argument mapping on the development of critical thinking holistically in both skill and tendency dimensions.

For this reason, skills and dimensions of critical thinking were discussed together with a holistic perspective within the scope of this study. The argument mapping process was carried out individual and as collaborative mapping that enables social negotiation in computer environment.

When the above-mentioned factors are taken into consideration, it is striking that critical thinking has a significant place in education. Thus, it is important to incorporate practices, which will develop the critical thinking skills of the students from all phases of education, into the courses. In particular, supporting critical thinking in children, who are the adults of the future, as of early ages is important. This is possible only by training teachers who have strong critical thinking skills. Also, the necessity of using practices, which might play a role in the development of critical thinking in the learning process in an effective manner and involving the students in these practices, has arisen. In this scope, the aim of this study is to examine the impact of the argument map creation process on the critical thinking of pre-service teachers. Research questions was as follows:

1. What is the effect of individual and collaborative argument mapping on pre-service science teachers' critical thinking?

a) Is there a statistically significant difference between individual and collaborative argument mapping groups in terms of critical thinking scores?

b) Is there a statistically significant difference between individual argument mapping and control groups in terms of critical thinking scores?

c) Is there a statistically significant difference between the cooperative argument mapping and control groups in terms of critical thinking scores?

METHOD

RESEARCH DESIGN

Research design is quasi-experimental pre-test-post-test control group design. According to this design, CTT is applied as a pre-test to the control and experimental groups that are selected impartially. Then, individual argument mapping is applied in one of the experimental groups, and individual and argument mapping intervention conditions are applied in the other. After the implementations, CTT is applied to the experimental and control groups as a post-test. Due to the presence of the control group and the unbiased assignment of the groups eliminated the basic intervention conditions against internal validity (Christensen, Johnson, Turner, & Christensen, 2011), the quasi-experimental design was used. Critical thinking levels of pre-service teachers is the dependent variable of the research. Independent variable whose impact on the dependent variable is the teaching approach. Research design is summarized in the Table 1.

Table 1. *Research Design*

Groups	*Activities Before*	*Experiment activities*	*Activities after*
Experimental Group1(n=32)	Critical Thinking Test (CTT)-Pre Test	8 Week ABI Actives 8 Week Individual Argument Map Practices and 4 Week collaboratively Argument Mapping Practices	Critical Thinking Test (CTT)-Post Test
Experimental Group2 (n=23)		8 Week ABI Actives 8 Week Individual Argument Mapping Practices	
Control Group (n=29)		8 Week ABI Actives	

SAMPLE

The sample of the research involved senior pre-service science teachers (n = 84) studying in the Faculty of Education at a public university located in the western Black Sea region in the fall semester of 2017-2018 academic year. These pre-service teachers belonged to three different sections, one of which was randomly selected as a control group while the other ones were determined as experimental groups at the beginning of the research.Convenient sampling technique, which is one of the random sampling methods, was used to determine the sample of the study. The sample of the study consists of senior pre-service science teachers (n=84) studying at the Faculty of Education of a state university in the Western Black Sea region in the fall semester of the 2017-2018 academic year. This sampling technique was preferred for the researchers to easily reach the participants, who may be involved in experimental implementation that require a long time, such as an academic term (Monette, Sullivan ve De Jong, 2005). These pre-service teachers belong to three different groups that were randomly selected at the beginning of the study, one of which was determined as the control group and the others as the experimental group.

DATA COLLECTION TOOLS

INFORMATION FORM

A form was created that includes variables such as age, gender, GPA, and previous courses or training on critical thinking and argumentation to collect information about pre-service teachers.

CRITICAL THINKING TEST

Critical Thinking Test (CTT) was used as a data collection tool in the study. CTT was applied to the control and experimental groups as pretest and posttest in order to examine the impact of teaching approaches of the pre-service teachers on their critical thinking skills. CTT was developed by Akdere (2012) for the pre-service teachers. After the necessary permissions were taken, it was used in the present study. The test consists of 10 scenarios in total. Scenarios include a logical error or a problem requiring a solution or a situation requiring a decision depending on the interpretation of a situation described with 4-5 sentences, dialogues or a graphic presentation. After each scenario is given, there is an open-end question concerning this scenario. Participants are asked to answer this question with 4 or 5 sentences. The following 3rd question of the test is given as example:

"A report of a newspaper mentions a study comparing the success rates of the high schools where single-sex education is provided and the mixed high schools. Results of the study show that high schools where single-sex education is provided are more successful. Also, it is expressed that, based on the result of this study, authorities are planning to increase the numbers of single-sex high schools. Based on this report, do you support this initiative? Explain your reasons."

The test was developed to measure the Cognitive (skill) and Affective (disposition) dimensions of critical thinking with a holistic approach. The cognitive dimension of the Critical Thinking Test is based on reasoning, and interpreting, analysing and evaluating arguments, whereas the affective dimension is based on avoiding emotional reasoning, evaluating alternative perspectives and paying attention to information sources. Statements written in response to each question are scored from one to five, depending on whether they indicate the indicators for the skill and tendencies sub-dimensions in the rubric (Outstanding: 5, Good: 4, Avarage:3, Below avarage: 2, and Poor: 1). The reliability of the CTT was calculated as Cronbach Alpha (α = 0 .78). Akdere (2012) also developed a rubric for the CTT. Answers given to the questions in the test are assessed on the basis of this rubric. In the present study, CTT was applied to 84 pre-service teachers as pretest before the practice and posttest after the practice. Answers of the pre-service teachers were assessed through the rubric and were transformed into digital values. For this study, the test was found reliable with the value of KR20 as .82.

DATA ANALYSIS

The answers given by the participants to the CTT were scored using the holistic rubric developed by Akdere (2012). To test the reliability of the data collected through CTT, consistency between encoders was checked. To determine the consistency among the coders, each researcher randomly selected five CTT answer sheets from the pretest and posttests of all groups and evaluated them separately according to the rubric. Accordingly, the inter-coder reliability was calculated as 80%, which indicates high inter-coder reliability (Thomas ve Magilvy, 2011).

After the reliability tests, ANOVA analysis was conducted to examine whether the experimental and control groups had similar critical thinking scores in the pretest. Then, ANCOVA was applied to examine the effect of argument mapping on critical thinking by processing the participants' CTT pretest data as a covariate.

PROCEDURES

The laboratory activities on the topic of "Optics" were carried out in both experimental and control groups based on ABI approach for 8 weeks. Students in the experimental groups were asked to create argument maps throughout the semester. While one of the experimental groups created individual argument maps after each activity within the scope of the "Big Idea" grounded on the main idea of the activity based on the ABI approach, collaboratively argument maps were created by the students one of the experimental groups in addition to these individual argument maps. In this respect, experimental groups were named as individual and collaboratively experimental groups. Practices held within the scope of the study are detailed under the headings of ABI practices and argument mapping practices.

ABI PRACTICES

During the study, eight ABI activities including the subjects of light and shadow, mirrors, mirror systems, lenses, lenses systems, refraction and preparation activity within the scope of the subject of "Optics" were performed jointly in the control and experimental groups. First, students were informed about the practices to be made during the study. They were also expected to design the experiments, to collect data and to analyse them. During the activity, researchers facilitated students' learning in a meaningful way through asking open-ended questions to foster them in critical thinking as a natural consequence of the argumentation practices.

Before the ABI experiment activities, students were asked to split into smaller groups consisting of five-six persons and to pick a name for their groups so that they can feel the sense of belonging more for the group activities. Afterwards, a preparation activity was performed prior to the ABI activities on the subject of "Optics". Within the scope of the preparation activity, texts narrating a mysterious event were distributed to the students and they were asked to solve this event, to raise a claim and turn the storyline into a scenario by stating the evidence supporting the claim. After that, each group shared their claims, evidence and scenarios with the other groups and tried to convince one another. The aim of the preparation activity was to introduce the ABI process to those who have not experienced it and to make the argument creation process more efficient through the structure between claim and evidence. Students were then asked to make preparations for the subject titles specified by the researchers and come to the lectures with start questions. Students wrote these questions on the blackboard before the lecture. Questions written by the students on the blackboard were evaluated by the researcher together with the whole class in terms of being open to inquiry. In this respect, groups had the chance to revise or reformulate the research questions.

Students sought answers for their questions by holding discussions in small groups. Meanwhile, the researcher visited all groups and asked various questions to the students. The aim of these questions was to ensure that the students thought more intensely without being distracted from the target, became mentally active and thought at a higher level. Also, questions in this process (student-student and teacher-student) play a significant role in the initiation and continuation of the discussion process which is key for the ABI. In small group discussions, peer to peer interaction was experienced as intensely as guidance of the researcher. Students tried to complete the process by communicating with their groupmates in the experiment design and implementation phases. This communication took place through sharing knowledge or asking questions.

Following the small group discussions, all groups shared the questions they examined, their claims based on the data obtained and observations as well as the evidence supporting these claims with their classmates. During the large group discussion, researcher asked further questions to students such as "Why do you think like that?" and "What do you think about your friends' opinions?" to motivate the students to think and to participate in the group discussions. Researchers continued asking following questions as "Why?" or "How?" in order to make them better express and question themselves and to initiate the discussion, which is essential in ABI process. Also, researchers directed the questions to different students when needed. While compiling the information related to the subjects in line with the large group discussion held, researchers also asked questions to request the students to make preparations for the activity of the next lecture and attract attention to the subject.

Later on, students were asked to come to the class with the questions they wanted to inquire on this subject. At the end of each lecture, students were asked to fill in the experiment reports, which constitute a part of the ABI approach.

INDIVIDUAL ARGUMENT MAPPING PRACTICES

An introductory lecture on argument mapping was delivered to both experimental groups before the experiment activities. In this lecture, students were informed about what an argument map is, for what purposes it is created and how it is used, and Rationale-Argument Mapping, the online computer program with which the argument map would be created, was introduced. Each student was provided with the previously created account information for entrance into the program and was asked to create argument maps on a weekly basis through this account. In both experimental groups, students were asked to create individual argument maps primarily in the preparation activity. By this means, they formed their claims and supported them with evidence, explained their thoughts with logical reasons and practiced for mounting arguments by establishing the claim-reason-evidence connections. Afterwards, students were asked to create eight individual argument maps on the subject reflecting the main idea of the activity at the end of each activity. They were asked to send the individually created argument maps to the e-mail address specified by the researchers. Researchers assessed the first individual argument maps prepared by the students and gave feedbacks with the aim of helping them create better argument maps and increasing the impact of the process.

COLLABORATIVELY ARGUMENT MAPPING PRACTICES

One of the experimental groups created collaboratively argument maps, as well, in addition to the individual argument maps. While preparing the collaboratively argument maps, students worked in 17 small groups consisting of two persons. These practices were performed in the computer laboratory where students could work on a computer in pairs. collaboratively experimental group students started to create an argument map with respect to an argument mounted by the researchers prior to the practices. Each small group has another small group to create the argument map together. Owing to collaboratively argument mapping, a discussion environment, where the claims, reasons and evidence of a small group could be assessed by the other small groups, was created. Students attempted to convince the other group by referring to different data and sources (their own knowledge, books or internet) and sharing the images in accordance with their claims. As for the researchers, they were involved online in the argument maps created by the interaction groups consisting of two small groups. They asked leading questions concerning the claims, reasons and evidence presented by the students to motivate them for questioning and added supporting or refuting statements. In other words, researchers were involved in the collaboratively map creation process as guides. After the practice was performed, students were asked to send the collaboratively argument maps to the researchers online. Four collaboratively argument mapping activities were performed with the students in accordance with the nature of the subjects. Each practice lasted for about 2 hours. At the end of each collaboratively practice, argument maps were assessed by the researchers in terms of the accuracy and clarity of the statements, whether the claims were presented in a hierarchical order, validity of the evidence and interaction levels of the groups, and feedbacks were given to the students.

VALIDITY OF THE STUDY

Necessary adjustments were made to control factors that could threaten the internal validity of this study, such as the different past experiences of the subjects, maturation, test effect, and loss of subjects (Christensen et al., 2011). In this regard, groups consisting of academically similar and approximately the same age group participants were randomly assigned as control and experiment. Since it is possible to experience loss of subjects, the study was started with more participants than necessary. However, there was no loss of participants. Experimental and control groups received an eight-week training after the pre-test of the Critical Thinking Test. After enough time for the participants to forget the content of the test, the same test was applied as a post-test in three groups. The threat of the participants' experiences in the pretest to affect the posttest performance was eliminated by the length of the time between the pretest and the posttest, as well as the presence of the control group. When the Information Form was examined, it was determined that the participants in the experimental and control groups had not taken any courses or participated in the training on critical thinking and argumentation in the past. In this regard, it was expected that the participants in the experimental and control groups would reach similar cognitive and psychological maturation levels and experience similar behavioral changes since they had similar backgrounds and were in the same age group.

RESULTS

CTT pre-test was applied to determine whether there were significant differences between the groups in terms of critical thinking, critical thinking skills and critical thinking dispositions. The ANCOVA were applied since the data provided assumptions of normal distribution (Kolmogorov-Smirnov: $p > 0.05$), homogeneity (Levene's Test: $p > 0.05$), and linearity and homogeneity of regression trends ($p > 0.05$). When the pre test scores 185 obtained from ANOVA were examined, a significant difference could not be detected between the groups. Results of CTT pretest ANOVA analysis are given in the Table 2.

Table 2: *Pre-Critical Thinking Test Results*

		Sum of Squares	*SD*	*Average of Squares*	*F*	*p*
Critical Thinking Skills	Between groups	82.779	2	41.389	.534	.589
	Within groups	6205.727	81	77.572		
	Total	6288.506	83			
Critical Thinking Disposition	Between groups	38.329	2	19.165	1.006	.370
	Within groups	1543.421	81	19.055		
	Total	1581.750	83			
Critical Thinking Total	Between groups	198.632	2	99.316	0.823	.443
	Within groups	9648.235	81	120.603		
	Total	9846.867	83			

Statistically significant differences at the level of $p < .05$ could not be found between the total test scores of the groups in terms of critical thinking skill ($F_{(2,83)}= .534$, $p=.589$), critical thinking disposition ($F_{(2,83)}=1.006$, $p= .370$) and critical thinking according to the results ($F_{(2,83)}=0,823$, $p= .443$) obtained from the test applied at the beginning of the study. This showed that the groups were not different at the onset of the study with respect to critical thinking skill, critical thinking disposition and critical thinking. One-way ANOVA analysis was applied to determine whether the groups had differences in terms of CTT after the argumentation practices and individual and collaboratively argument maps created by the experimental groups. Descriptive statistical findings concerning the CTT post-test are found in the Table 3 while findings of ANOVA analysis are found in the Table 4.

Table 3: *Results of Post-CTT Descriptive Statistics*

	Groups	*N*	*M*	*SD*
Critical Thinking Skills	Experimental1 group	23	61.95	1.45
	Experimental2 group	32	64.21	1.47
	Control group	29	49.24	2.24
Critical Thinking Disposition	Experimental1 group	23	13.95	0.95
	Experimental2 group	32	13.87	0.80
	Control group	29	9.93	0.73
Critical Thinking Total	Experimental1 group	23	75.91	2.02
	Experimental2 group	32	78.09	1.92
	Control group	29	59.17	2.31

Table 4: *Results of Post-CTT One-way ANOVA Analysis*

		Sum of Squares	*SD*	*Average of Squares*	*F*	*p*	*Sig.*
Critical Thinking Skills	Between group	3806.836	2	1903.418	21.098	.000	Ex.1>Control Ex.2>Control
	Within group	7307.736	81	90.219			
	Total	11114.571	83				
Critical Thinking Disposition	Between group	300.574	2	150.287	7.913	.001	Ex.1>Control Ex.2>Control
	Within group	1538.319	81	18.992			
	Total	1838.893	83				
Critical Thinking Total	Between group	6222.210	2	3111.105	24.964	.000	Ex.1>Control Ex.2>Control
	Within group	10094.683	81	124.964			
	Total	16316.893	83				

CTT post-test ANOVA analysis results given in the Table 3 show that there is a statistically significant difference between the groups in terms of critical thinking skill ($F_{(2,83)}$=21.098, *p*=.000), critical thinking disposition ($F_{(2,83)}$=7.913, *p*=.001) and overall critical thinking ($F_{(2,83)}$=264,964, *p*<.0001). When the descriptive statistical findings in the Table 2 are examined, it is seen that this difference is in favor of the experimental groups taking part in the argument mapping practices. It was found out that there was not a statistically significant difference between the experimental group performing both individual and collaboratively argument mapping and the group performing only individual argument mapping in terms of critical thinking skill, disposition and test total score.

During the study, the impact of individual and collaboratively argument mapping process on critical thinking was examined, as well. It was determined that critical thinking disposition, skill and total test scores did not differ significantly between the experimental groups. At this point, average scores of the experimental groups were examined. It was found out that the critical thinking skill (M=64,21, SD=1,47) and test total average scores (M=78.09, SD=1.92) of the experimental group participating in individual and collaboratively argument mapping practices were higher than the skill (M=61.95, SD=1.45) and test total scores (X=75.91, SD=2.02) of the experimental group participating only in individual argument mapping practices. Effect size was calculated in order to detect how collaboratively argument mapping practices affected the total scores of the experimental groups. According to Sullivan & Feinn (2012), small effect size values were obtained for the critical thinking skill

(η_p^2=0.49) and test total (η_p^2=0.44). This means that collaboratively argument mapping practices had a slight impact on the difference between the critical thinking skill and test total scores of the groups (Pallant, 2016).

DISCUSSION AND CONCLUSION

The primary objective of the present study was to examine the impact of argument mapping on critical thinking skills, critical thinking dispositions and overall critical thinking of the pre-service science teachers. The impact of individual and collaboratively argument mapping on critical thinking was examined, as well. When the findings of CTT pre-test applied in the study were examined, it was seen that control and experimental groups were not different in terms of critical thinking skill, critical thinking disposition and overall critical thinking. However, when the findings of CTT post-test were examined, a significant difference was detected with respect to critical thinking skill, critical thinking disposition and overall critical thinking in favour of the experimental groups. In line with the findings, it can be stated that experimental groups are more successful than the control group in relation to critical thinking, critical thinking skills and critical thinking dispositions. Also, the present study examined the impact of individual and collaboratively argument mapping on critical thinking. When the relevant findings are examined, it can be seen that individual or collaboratively mapping has not led to a statistically significant difference between the experimental groups in terms of critical thinking skills, critical thinking dispositions and overall critical thinking. However, critical thinking skill and CTT posttest average scores of the experimental group participating in the collaboratively argument mapping practices are higher. Therefore, effect size for the critical thinking skill was calculated as η_p^2=0.49 while effect size for the test total was found as η_p^2=0.44. This result shows that collaboratively argument mapping practice has led to a slight impact when compared to the individual argument mapping.

The findings reveal that pre-service science teachers participating in argument mapping practices have differentiated from those not taking part in such practices in terms of critical thinking skill, critical thinking disposition and overall critical thinking. Also, collaboratively argument mapping practices performed by the pre-service teachers have had an impact on the development of critical thinking skills and dispositions. Studies available in the literature emphasize how effective argument mapping is for the development of critical thinking (ter Berg & van der Brugge, 2013; Twardy, 2004; van Gelder, 2005; 2015). van Gelder (2015) stressed that reasoning and discussion are at the core of critical thinking and these complicated processes need to be understood in an easier manner. Based on this, it can be stated that the pre-service teachers participating in the individual argument mapping practices visualised their own reasoning processes with argument maps. By this means, students can evaluate their own reasoning steps and revise their thinking processes in case of need.

As for the collaboratively argument mapping process, it can be thought as a discussion platform where different ideas are confirmed by using evidence in a computer environment. Ford (2008; 2012) drew attention to the importance of the argumentation process and stated that in order to improve scientific knowledge, claims and evidence should be established and these claims and evidence should be criticised. Recognising the relationship of evidence to the argument is considered a fundamental achievement, and forming an evidence-based claim is seen as the most fundamental and key element of argumentative writing (Hemberger, Kuhn, Matos, & Shi, 2017). In the collaboratively argument mapping practices, students come across many different ideas including both their own ideas and the ideas of the peers. At this point, they try to detect the correct idea out of many options and present evidence for that idea. In the practices, incorrect connections between the ideas and evidence were emphasized by the peers, and the pre-service teachers tried to correct these incorrect connections. As already specified, pre-service teachers used several skills requiring high level thinking together with their peers during the collaboratively argument mapping process. Although a statistical significant difference could not be found between the critical thinking skill, disposition and general average scores of the experimental groups, average scores of the experiment group participating in the collaboratively argument mapping practices were higher. It can be stated that this difference is a result of these high level thinking activities performed by the pre-service teachers during the collaboratively argument mapping process.

In the literature, individual and collaboratively dimensions of argument mapping have not been examined separately and the number of the studies on the skill dimension of critical thinking is higher (van Gelder, 2013; van Gelder 2005; van Gelder 2015). Thus, it is thought that the present study, where both individual and collaboratively argument mapping practices were performed and the impact of argument mapping on both dimensions (skill and disposition) of critical thinking was examined, makes a significant contribution to the relevant literature. In addition to these, it is thought that the study makes significant contributions in terms of concretising the relationship between critical thinking and argumentation. One of the aims of this study is to enable pre-service teachers to present the complexity of weekly topics in an interconnected and summative way during the argument-mapping phase. In this case, it is possible to say that they find the opportunity to combine the common thinking structures in the critical thinking and argumentation process as expressed by Andrews (2015).

Critical thinking is a way of thinking incorporating many skills. According to van Gelder (2005), critical thinking includes the use of various low-level cognitive skills in an effective and masterful manner. These cognitive skills are interpretation, analysis, assessment, deduction, explanation and self-regulation (Facione, 2015). Based on this, these skills need to be incorporated into the learning process and be actively used for the development of critical thinking. Also, the importance of integrating evidence-based discussions into the main courses is emphasized (ter Berg & van der Brugge, 2013).

It is stated that the dialogic and dialectical nature of the argument as well as its structure that explores the distinction and difference between ideas encourage critical thinking (Andrews, 2007). In the argument mapping process, mounting a claim, presenting reasons for or objections to a claim and establishing the relation between the main idea and other ideas are important activities. During these activities, it is necessary to be mentally active and use the above-mentioned critical thinking skills intensely. Argument mapping, which is highly effective in the development of critical thinking, ensures that low-level cognitive skills are used actively and effectively.

Argument maps help students avoid of the complicated structures of the arguments and identify the reasoning problems in the argument (ter Berg & van der Brugge, 2013). This is because of the fact that, during argument mapping, individuals present reasons supporting the main claim, try to refute the claim by using counter claims, mount new claims in connection with the main claim and understand the basic structure of an argument through visualisation (Davies, 2010). Argument maps help us organise and manipulate complex information, promote the clear expression of our reasoning and allow us to convey this logic quickly and effectively (van der Brugge, 2018). While performing these activities, they actively use many skills including thinking in an active manner, assessing reasons and objections, explaining ideas by using evidence and revising the wrong ideas or negative thoughts. This is in conformity with the requirements specified by Twardy (2004), who argues that a student needs to perform reasoning, define the outline of the claims and assess the evidence to be able to think critically. Similarly, it is stated by Davies and Barnet (2015) that critical thinking is closely related to the development of various skills such as argumentation and making sound judgements at the end of such argumentation. Argument maps help students evaluate reasoning, making it easier to evaluate each inference step of an argument and see how the evaluations of each step affect the result (Davies, Barnett, & van Gelder, 2019). In particular, it can be said that cognitive skills such as making inferences and evaluating, used in the process in which the argument structure is analysed, support critical thinking. Although individuals have critical thinking skills, they cannot use these skills provided that they lack the critical thinking dispositions (Kabataş Memiş, 2016). Kuvaç and Koç (2014) point out to the importance of developing critical thinking dispositions in individuals in addition to the critical thinking skills. Based on this, the necessity of developing critical thinking dispositions of the individuals along with their critical thinking skills has come to prominence. One of the most significant results of this study is the significant differentiation of experimental groups from the control group in terms of critical thinking disposition. In the literature, it is stated that the prerequisite for an individual to use critical thinking skills is to have critical thinking disposition. Thus, it can be argued that significant differentiation of experimental groups with respect to critical thinking disposition had an impact on the use of critical thinking skill. It can be stated that argument mapping practices were effective in the development of the critical thinking dispositions of the pre-service teachers. Supporting critical thinking skills and dispositions through argument mapping ensures that pre-service teachers feel more enthusiastic about critical thinking. It can be said that argumentation practices are a good method that enables the use of critical thinking skills in the classroom in terms of providing a visual structure that both supports cooperation and individually encourages students' self-evaluation and self-regulation (Sönmez et al., 2020).

ABI approach used in the learning environments naturally encourages students to perform numerous activities including research, questioning, discussing with peers and teachers and writing. Although individuals have the opportunity to review the reasoning and argumentation process with their test reports (writing activity) after the discussion activities in the Science Writing Heuristic (SWH) process, they do this in standard prose. It is much more difficult to see changes in argument structure and results using prose alone without the visual cues provided by the mapping software (Davies, Barnett, & van Gelder, 2019). In the present study, in addition to the ABI approach, the impact of computer-aided argument mapping on critical thinking was examined. Here the aim is to reveal the difference caused by computer aided argument mapping. Studies examining the impact of argument mapping in addition to different approaches used in the learning environments are recommended. It is important to examine whether the combination of argument mapping with different approaches will yield results similar to those obtained in our study. Also, it is of great importance that individuals understand the elements of an argument structure and the relations between these elements. Thus, integration of the argument mapping practices into learning environments much more will be a significant step to this end.

SUGGESTION AND LIMITATIONS

Within the scope of this study, argument mapping practices were carried out during an academic term on the subject of "Optics". The CTT test used in the study can generally measure tendency and skill sub-dimensions. The use of open-ended tests is limited in that it allows us to measure the critical thinking of the participants to the extent of their expression skills. However, considering the positive effects of argument mapping practices on the development of critical thinking according to the results obtained, it is recommended to enrich teaching by integrating argument mapping into higher education programs. Since the current study was conducted only on "Optics" in the field of science, it would be beneficial to study argument mapping in terms of both critical thinking and other instructional outcomes within the scope of different fields and subjects.

AUTHOR CONTRIBUTION

-The first author contributed research design.
-All three authors actively participated in the implementation of the research, the collection and analysis of the data, and the reporting of the research.
-The second author contributed to revisions of the article in the journal evaluation process.

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Direct and Indirect Relationships Between Dark Personality Traits and Loneliness Among Emerging Adults: The Mediating Role of Empathic Tendency

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Abstract

This study aimed to explore whether empathic tendency has a mediating role in the relationship between dark triad personalities (Machiavellianism, psychopathy, and narcissism) and loneliness. To that end, data were collected from 510 undergraduate emerging adults (367 men, 137 women). Dark Triad Dirty Dozen, Empathic Tendency Scale, and UCLA Loneliness Scale were used as measures. The research findings indicated negative significant correlations among Machiavellianism and psychopathy, and empathic tendency. According to another finding on the correlations among the variables, there were positive significant correlations among Machiavellianism and psychopathy, and loneliness. On the other hand, significant correlations could not be observed among narcissism and empathic tendency, and loneliness. As for the findings on the mediating role of empathic tendency in the relationship between dark triad personalities and loneliness, empathic tendency acted as a complete mediator in the relationship between Machiavellianism and loneliness and between psychopathy and loneliness. Yet, empathic tendency was not found to be mediating the relationship between narcissism and loneliness. Moreover, Machiavellianism and psychopathy predicted .32 of loneliness via empathic tendency. The findings obtained were discussed and interpreted in light of the literature.

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INTRODUCTION

People going through the emerging adulthood need to establish close relationships. Finding a partner and/or an environment to which individual will feel belonged is considered a developmental task for the individual (Arnett, 2007). University stage offers some individuals the chance to enter different circles whereas it may cause them not to adapt to any circle and become lonely (Ümmet & Ekşi, 2016). It is therefore of critical importance that the predictors of loneliness should be investigated in helping develop intervention and prevention strategies. Recent studies suggest that loneliness are associated with dark personality traits (Jakobwitz & Egan, 2006; Masui, 2019) and empathy (Beadle et al., 2012; Calandri et al., 2021). Thus, addressing the concept of loneliness which is effective in mental health of emerging adults in this study will shed light to preventive studies to be performed for them in future.

There are increasingly more people who suffer from loneliness, and loneliness has become a public health issue in time due to its negative outcomes (Holwerda et al., 2016). Thus, there is a current attention to loneliness as a negative feeling which is present in any stage of everyone’s life in any form, and recently, more research has been conducted on the matter (Jiao & Wang, 2018; Mahajan, 2013; Masui, 2019). Moreover, as suggested by Wright et al. (2006), for exploring all aspects of the concept of loneliness, it is deemed necessary to understand what factors could cause people to feel lonely and how people experience the loneliness.

According to Perlman and Peplau (1982), loneliness refers to the disagreement between social relations imagined by individual and their existing social relations. While loneliness represents being physically alone, it may also manifest itself as loneliness among the crowd. Thus, satisfaction felt by individual with relationships underlies loneliness (Buluş, 1997). Weis (1973) address loneliness as an undesirable experience and agonizing feeling that adversely affect individuals and as a subjective experience which is in interaction with socialization. In the literature, loneliness can be examined in two types: social and emotional loneliness (Weiss, 1973). Social loneliness means that individuals are not physically present alongside other people whereas emotional loneliness refers to lack of an emotional intimacy despite the presence of others around the individuals (Russell et al., 1984; Weiss, 1973).

As an undesirable and hurtful emotion, loneliness has several impacts on individuals (Rokach & Neto, 2005). According to Rokach (2004), individuals may be less productive and creative when they are lonely. Brehm et al. (2002) also suggest that lonely individuals can have difficulty in establishing relationships and quality of their existing relationship can be lowered. Loneliness may affect how individuals think, and individuals can exhibit dysfunctional behaviors when making decisions about their lives. Individuals who feel lonely may evaluate others negatively and become insensitive to what happens around them. Furthermore, they may remain indifferent to social events and think that others will evaluate them negatively (Brehm et al., 2002).

Considering the effects of loneliness, it is important to discover how it occurs. The causes of loneliness may include innate properties and cover a wide range from personal factors to financial and social factors (Rokach, 2004). According to Rokach and Neto (2005) age, culture, personal incompetence, developmental hardships, incompetence in interpersonal relations, displacement or social separation and social marginalization are observed to be important factors in explaining loneliness. Loneliness can also be explained by insufficient social skills, psychological problems, and individual’s negative attitudes toward their perception of self, and their negative perception of themselves, others and the world (Jones et al., 1985). On the other hand, it is emphasized that one needs to consider personality traits of the individual when explaining the concept of loneliness (Wiseman et al., 2006). Perlman and Peplau (1982) state that since negative personality traits can reduce social desirability and attraction of individuals and adversely affect their behaviors in social relations, individuals with such traits can experience loneliness.

DARK TRIAD AND LONELINESS

In recent years, dark triad personalities (Machiavellianism, narcissism and psychopathy) which can be associated with loneliness have drawn deep interest of researchers (Jonason & Kroll, 2015; Rauthmann & Kolar, 2013; Zhang et al., 2015). Dark triad is a term used for defining a set of undesirable personality traits that exist in clinical and non-clinical individuals and is described as socially repulsive and destructive personalities (Savard et al., 2017). Individuals with such personalities can easily manipulate others through their impulsive, aggressive and self-seeking behaviors (Jonason et al., 2010).

The concept of *Machiavellianism* is used for defining selfish and manipulative people who can skillfully use deceptive strategies to achieve their goals. Machiavellian individuals show a 'cold' or 'insensible' approach to others and tend to use others for achieving their objectives (Christie, 1970). In addition, they are unsympathetic, sarcastic and utilitarian people. Their desire to possess sources of motivation such as money and power by making long-term strategic plans and how they deceive and exploit others make them socially undesirable (Jones & Paulhus, 2009).

Individuals with *psychopathic* personality are insensitive, cold-blooded people who have high potential of abusing interpersonal relations (Rauthmann & Kolar, 2013). Such people are also described as irresponsible individuals who seek for impulsive excitement, are lacking in empathy, are inclined to interpersonal manipulation and exhibit antisocial behaviors (Paulhus et al., 2016).

Finally, *narcissistic* individuals strive to attract attention and be admired constantly. Moreover, such individuals desire to gain power, prestige and status and become leaders within the society. Narcissistic people are insincere individuals who act self-interestedly in human relations, cannot empathize in their relationships, do not tolerate others and think themselves superior to anyone (Rauthmann & Kolar, 2013). Individuals with these personality traits show themselves up in the society, remain indifferent to their circles, use others for their own interests, deceive and manipulate others and exhibit aggressive attitudes and behaviors in interpersonal relations (Jonason & Kroll, 2015)

In the literature, there are limited number of studies on the dark triad and loneliness (Masui, 2019; Zhang et al., 2015), and it is stated that individuals who have dark triad personalities can have several social and emotional problems due to loneliness (Jonason et. al, 2010). Behaviors exhibited by individuals with dark triad personalities in their social relations make others alienate from them, which causes those individuals to become lonely (Jakobwitz & Egan, 2006).

MEDIATING ROLE OF EMPATHIC TENDENCY IN THE RELATIONSHIP BETWEEN DARK TRIAD AND LONELINESS

There are multiple factors that affect social relations and loneliness of individuals with dark triad personalities (Zhang et al., 2015). Jonason et al. (2013) highlight the necessity to investigate empathy for understanding the relationship between dark triad and loneliness. It is noted that individuals with these personalities are lacking in empathy (Rauthmann & Kolar, 2013), and therefore, such individuals experience problems in interpersonal relations and consequently become lonely (Campbell & Foster, 2002).

Empathy, as a concept which stands out for its absence among individuals with dark triad personalities, is the social awareness through which an individual shares their emotional experience both on the emotional and cognitive level. The fact that empathic people give reactions similar to the feelings of people who are empathized with is the consequence of this process. Exchange of emotions between individuals supports the understanding of the one who is empathized with (Davis, 1996). Empathy contributes to socially beneficial behaviors such as increased awareness level and establishing quality relationship with others and on the desired level. It helps individuals understand each other, therefore reducing the possibility of any conflict between them (Tully et al., 2015).

The reason why there are several definitions of empathy is its multi-dimensional nature. Addressing empathy in two groups of empathic skill and empathic tendency facilitates definition of the concept. Empathic skill is about making the other person feel understood and felt (Kaya & Siyez, 2010). Empathic tendency is individual's potential to understand and feel experiences and emotions of others (de Kemp et al., 2007).

High empathic tendencies of individuals have a positive impact on their psychosocial adaptation whereas decreased empathic tendencies are associated with individual's impaired psychosocial adaptation (Kaya & Siyez, 2010). In previous studies, empathy plays a protective role in mitigating loneliness and negative factors that may be related to loneliness. For instance, empathy has been found to have a mediating role in the relationships between depressive symptoms and loneliness (Calandri et al., 2021), emotional condition, perceived social support and loneliness (Hu et al., 2020), emotion regulation and prosocial behaviors (Benita et al., 2017). Hence, individuals with dark triad personalities have difficulty in establishing and maintaining their long-term social relations as these relations require mutual attention and empathic qualities (Campbell & Foster 2002; Set, 2020). Since they are also perceived as individuals who only care about their own interest, they can only be in short-term relationships (Set, 2020). As is understood, empathic tendencies of individuals with dark triad personalities are thought to play a key role in their loneliness.

In this study, the concept of loneliness among emerging adults was taken as the dependent variable. Multiple studies have been carried out to explore causes and consequences of loneliness among undergraduates (Dumas et al., 2017; Pamukçu & Meydan, 2010; Wai & Tiliopulos, 2012). However, no study was observed to investigate dark triad and empathic tendency as variables that explain loneliness. Therefore, this study primarily aimed to explore whether empathic tendency plays a mediating role in how dark triad affects loneliness. In line with this purpose, the following hypotheses were tested:

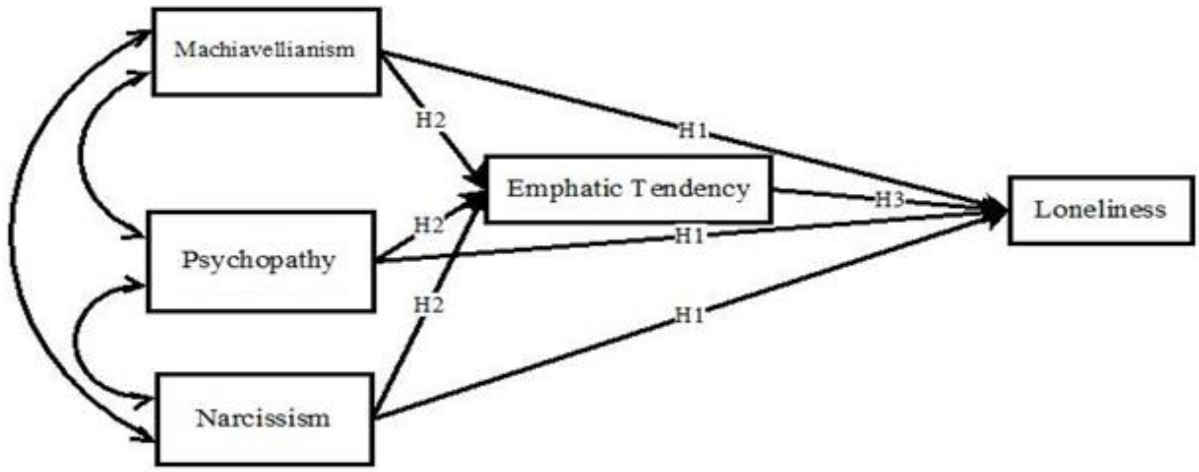
H_1= Total effect of dark triad (Machiavellianism, psychopathy and narcissism) on loneliness among emerging adults is significant.

H_2= Direct effect of dark triad (Machiavellianism, psychopathy and narcissism) on empathic tendency among emerging adults is significant.

H_3= Direct effect of empathic tendency on loneliness among emerging adults is significant.

H_4= Empathic tendency plays a mediating role in how dark triad (Machiavellianism, psychopathy and narcissism) affects loneliness among emerging adults.

Figure 1. *The Proposed Mediation Model*



METHOD

RESEARCH DESIGN

This study was performed in the relational research model of descriptive research designs. In such research, covariance of variables is investigated (Büyüköztürk et al., 2008). In the study, loneliness is the dependent variable, dark triad personalities are the independent variables, and empathic tendency is the mediator variable.

STUDY GROUP

The study was performed with a total of 510 undergraduate emerging adults. Of these undergraduates, 371 (72.7%) are women and 139 (27.3%) are men. With a mean age of 20.10 years (sd: 1.65), age range of the study group was 17-33 years. Distribution of the participants across the undergraduate departments is as follows: 29 in Turkish Teaching, 88 in Mathematics Teaching, 31 in Social Studies Teaching, 85 in Preschool Teaching, 197 in Psychological Counseling and Guidance, and 46 in Classroom Teaching. Lastly, of the undergraduates, 154 were freshmen, 166 were sophomores, 76 were juniors, and 114 were seniors.

MEASURES

Dark Triad Dirty Dozen (DTDD): The 12-item measure of Dark Triad developed by Jonason and Webster (2010) was utilized in the study. The scale was adapted into Turkish language by Satıcı et al. (2018). The scale is composed of three subscales: Narcissism, Machiavellianism and Psychopathy. The 5-point Likert scale is rated from Strongly Disagree (1) to Strongly Agree (5). As for the construct validity, three-factor construct of the adapted version was found to have good fit values just like the original version (χ^2/sd= 2.84, CFI= .96, GFI= .95, IFI= .96, SRMR= .047, and RMSEA= .066). In the reliability study, Cronbach's Alpha internal consistency coefficients were calculated to be .85 for the total scale, .87 for Narcissism, .79 for Machiavellianism, and .71 for Psychopathy. The hierarchical Confirmatory Factor Analysis (CFA) performed with the study data found the third-factor second-tier model to have good fit values (X^2/sd: 2.74, GFI: .96, AGFI: .93, RMR: .07, RMSEA: .06). For the present study, Cronbach's Alpha internal consistency coefficients were calculated to be .82 for Machiavellianism, .67 for Psychopathy, and .82 for Narcissism. Higher scores in the scale refer to increase in each personality trait.

*Empathic Tendency Scale (ETS)***:** The scale was developed by Dökmen (1988) to measure the emotional component of empathy and the empathizing potentials of individuals in everyday life. ETS is a Likert scale which consists of 20 items and is rated from Totally Disagree (1) and Totally Agree (5). Items 3, 6, 7, 8, 11, 12, 13, 15 are reverse-scored. In the validity study for ETS, the correlation coefficient between the scores obtained by an experimental group of 24 participants from ETS and "Intraception" part of the Edwards Personal Preference Schedule was found to be .68. In the reliability study, a test-retest was administered to a group of 70 and a correlation coefficient of .82 was found between the two applications. Spearman-Brown correlation coefficient was calculated to be .86 with the split-half method. Finally, Cronbach's Alpha internal consistency coefficient was found to be .72. As a result of the CFA performed with the study data, error variances of items 11 and 6, and 18 and 20 were combined. Accordingly, one can argue that the model has acceptable values (χ^2/sd: 4.17, GFI: .88, AGFI: .85, RMR: .09, RMSEA: .08). For the present study, Cronbach's Alpha internal consistency coefficient was found to be .76. Higher total scores in the scale means higher empathic tendency.

UCLA Loneliness Scale-Short Form (ULS-8): The measure was developed by Russell et al. (1978). Later, it was reviewed by Russell et al. (1980) and revised as a form composed of 20 items half of which is negative. It was adapted to Turkish language by Yaparel (1984) for the first time. To provide evidence for criterion-related validity of the scale, its correlation with Beck's Depression Inventory was checked, and a correlation coefficient of .50 was found between the two measures. Another study was performed by Demir (1989). In this study, the short form revised by Doğan et al. (2011) was utilized. The 4-point Likert scale is rated from Never (1) to Always (4). The exploratory factor analysis performed for the scale's validity studies concluded a one-factor 8-item construct that explains 36.69% of total variance. The confirmatory factor analysis results show that one-factor construct of the scale has good fit values [χ^2/df = 3.11; GFI= .97, NFI= .92, CFI= .94, IFI= .94, AGFI= .94, RMSEA]. Cronbach's Alpha internal consistency reliability coefficient of the scale was calculated to be .81. According to the CFA performed with the data which were collected in this study, the model obtained when the error variances of items 1 and 2 of the 8-item short form were combined has good fit values (χ^2/sd: 4.83, GFI: .96, AGFI: .92, RMR: .03, RMSEA: .08). For the present study, Cronbach's Alpha internal consistency coefficient was found to be .85. Higher scores mean increased loneliness.

DATA ANALYSIS

SPSS 22 and AMOS 22 software packages were utilized for the data analysis. Pearson's Product-Moment Correlation Coefficient was used to calculate the correlations across variables while it was investigated whether direct and indirect correlations across variables were significant for exploring whether empathic tendency played a mediating role between Machiavellianism, narcissism and psychopathy and loneliness. As suggested by MacKinnon et al. (2002), calculation of direct and indirect correlations is one of the strongest methods for a mediation analysis. Moreover, AMOS bootstrapping method was utilized to ensure that significant or non-significant correlations were not random and not caused by this sample from which the data were collected; in other words, to avoid Type I error. Hayes (2009) recommends that this bootstrapping is performed over 5000 new samples derived from the original sample. By this means, for the estimations of indirect effects obtained, evidence is provided about the fact that indirect effects are statistically at the significance level of 0.05 within 95% confidence interval which does not contain zero (Shrout & Bolger, 2002).

When preparing the data for analysis, it was determined whether the data were distributed normally by examining the Skewness (S) and Kurtosis (K) coefficients. Accordingly, S-K coefficients were found to be 1.089-.807 for Machiavellianism, 1.213-1.704 for psychopathy, -.172-.536 for narcissism, -.092-.236 for empathic tendency, and 1.168-.942 for loneliness. Since the range between +1.96 and -1.96 is considered normal distribution (George & Mallery, 2010), one can argue that these variables exhibited normal distribution. Furthermore, utilizing these data, empty cells were filled with the "series mean" method in the missing data analysis. In the outlier analysis, total scores obtained from the variables were examined upon conversion to standard *z*-score, and data omission from the dataset was not deemed necessary.

DATA COLLECTION PROCESS

First, the participants were asked to read the informed consent form that contains general information on the study and research, confidentiality, and undergraduate's approval of study participation and whether they would participate in the research, and they were informed not to leave the items unanswered. Following the briefing, the volunteered participants completed the three scale forms during class hours. The participants completed the forms in about 20 minutes.

FINDINGS

The findings obtained as a result of the research are given below.

Table 1. *Descriptive Findings and Correlation Coefficients of Variables*

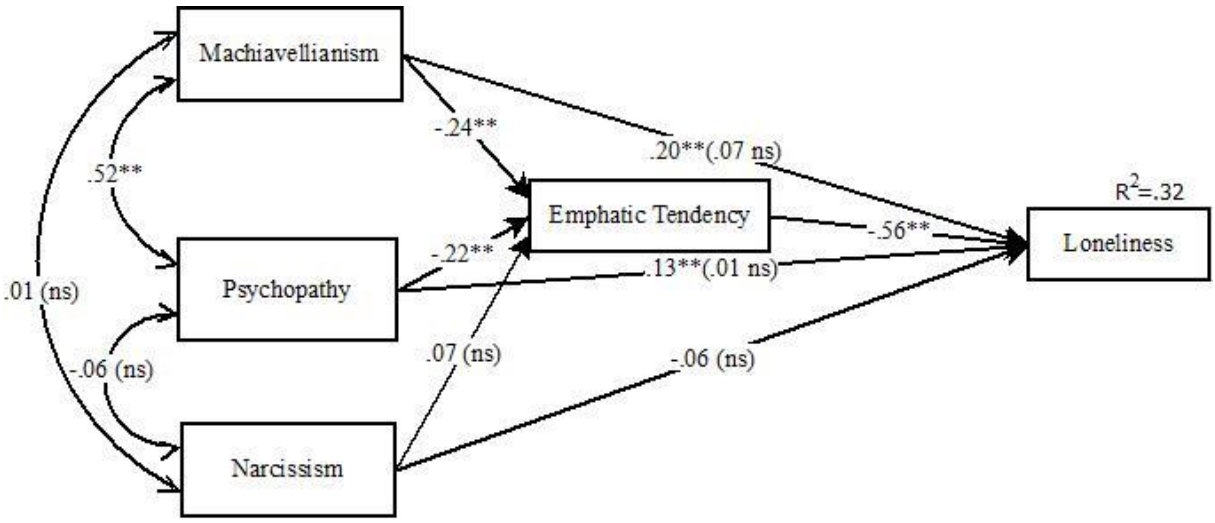
Variables	*Mean*	*Sd*	*1*	*2*	*3*	*4*	*5*
1-Machiavellianism	7.50	3.49	1				
2-Psychopathy	7.24	3.13	.52**	1			
3-Narcissism	12.15	4.14	.49**	.35**	1		
4-Empathic Tendency	68.90	8.96	-.24**	-.22**	-.04	1	
5-Loneliness	12.61	4.18	.20**	.13**	.01	-.56**	1

N=510, **p<.01

According to Table 1, there were positive significant correlations between Machiavellian tendencies and psychopathic tendencies (r= .52, p<.05) and narcissistic tendencies (r= .49, p<.05) of the emerging adults. Moreover, a negative significant correlation was found between Machiavellianism and empathic tendency (r= -.24, p<.05) whereas a positive significant correlation was observed between Machiavellianism and loneliness (r= .20, p<.05). On the other hand, positive significant correlations were found between psychopathy and narcissism (r= -.22, p<.05) and loneliness (r= .13, p<.05) while a negative significant correlation was found between psychopathy and empathic tendency (r= -.22, p<.05). It can also be seen in the table that there was a negative non-significant correlation between narcissism and empathic tendency (r=-.04, p>.05) and a positive non-significant correlation between narcissism and loneliness (r= .01, p>.05). Finally, a negative significant correlation was found between empathic tendency and loneliness (r= -.56, p<.05).

Path coefficients for the analysis on whether empathic tendency played a mediating role in the relationship between dark triad and loneliness are given in Figure 2.

Figure 2. *Mediating Role of Empathic Tendency in the Relationships between Machiavellianism, Psychopathy, Narcissism and Loneliness among Emerging Adults*



Total effect of Machiavellianism on loneliness was found to be positive significant (β= .20, p< .05, 95% CI= .10-.30). However, direct effect of Machiavellianism on empathic tendency was negative significant (β= .24, p< .05, 95% CI= .32-.15). Similarly, direct effect of empathic tendency on loneliness was found to be negative significant (β= .56, p< .05, 95% CI= .63-.48). Regarding the direct effect of Machiavellianism on loneliness, path coefficient of this effect was observed to be non-significant (β= .07, p>.05, 95% CI=.01, .17). On the other hand, path coefficient of Machiavellianism indirect effect on loneliness was found to be significant (β= .13, p <.05, 95% CI= .07, .16). Accordingly, it is possible to say that empathic tendency took a mediating role between Machiavellianism and loneliness among the emerging adults.

As for the total, direct, and indirect path coefficients via empathic tendency between psychopathy and loneliness, total effect of psychopathy on loneliness was found to be positive significant (β= .13, p< .05, 95% CI= .03, .24). Path coefficient of psychopathy's direct effect on empathic tendency was also significant (β= -.22, p <.05, 95% CI= -.32, -.13). Similarly, path coefficient of empathic tendency's direct effect on loneliness was found to be significant (β= -.56, p< .05, 95% CI= -.63-.48). It is seen in the figure that direct effect of psychopathy on loneliness was non-significant (β= -.01, p >.05, 95% CI= -.01, -.11) while the indirect effect was found to be significant (β= -.13, p <.05, 95% CI= -.21, -.06). This finding suggests that empathic tendency played a mediating role between psychopathy and loneliness among the emerging adults.

As for the total, direct, and indirect path coefficients via empathic tendency between narcissism and loneliness, total effect of psychopathy on loneliness was found to be negative non-significant (β= -.06, p>.05). Path coefficient of narcissism's direct effect on empathic tendency was also non-significant (β= -.07, p >.05). Indirect effect of narcissism on loneliness via empathic tendency was also found to be non-significant (β= .03, p>.05). According to this finding, one cannot suggest a mediating role of empathic tendency between narcissism and loneliness among the emerging adults.

Lastly, a positive significant correlation was observed between Machiavellianism and psychopathy among the emerging adults (β= .52, p<.05, 95% CI= .43-.60). Once the non-significant paths (indirect paths between Machiavellianism and loneliness and between psychopathy and loneliness) were omitted from the model of the mediation analysis, the model was found to have perfect fit values (χ^2= 3.884/2= 1.94, GFI=.99, AGFI= .98, IFI= .99, CFI= .99, REMSEA= .04). Furthermore, Machiavellianism and psychopathy explained .32 of loneliness via empathic tendency.

Table 2. *Path Coefficients of Total, Direct and Indirect Effects across Variables, Significance Levels, and Decision*

Paths	*Total Effect*	*Direct Effect*	*Indirect Effect*	Decision
Machiavellianism←Loneliness	.20**	.07	.13**	Full mediation
Psychopathy←Loneliness	.13**	.01	.14**	Full mediation
Narcissism←Loneliness	-.06	-.03	-.03	No mediation

**p<.01

As seen in Table 2, empathic tendency played a complete mediating role in the effects of both Machiavellianism and psychopathy on loneliness whereas no mediation was present between narcissism and loneliness due to the absence of direct, indirect and total significant correlations.

DISCUSSION, CONCLUSION AND IMPLICATIONS

This study investigated whether the dark triad personalities (Machiavellianism, narcissism and psychopathy) predicted loneliness and whether empathic tendency had a role in this relationship. Consequently, except narcissism, Machiavellianism and psychopathy traits substantially predicted loneliness. Moreover, empathic tendency mediated the relationships between. In other words, higher Machiavellian and psychopathic tendencies refer to increased loneliness. Lower empathic tendencies among individuals with such traits cause this relationship. The results and importance of this study are discussed below.

The first hypothesis, "Total effect of dark triad on loneliness is significant", was confirmed except that total effect of narcissism on loneliness was non-significant.

Effects of Machiavellianism and psychopathy on loneliness was concluded to be positive significant in the research. In the literature, there are studies in support of this research finding (Chirstie, 1970; Masui, 2019; Zhang et al., 2015). Zhang et al. (2015) stated that individuals with Machiavellian personality have difficulty in understanding others' feelings, exploit others (Christie, 1970) and do not make effort to understand thoughts, emotions and behaviors of others. Consequently, individuals can experience lack of emotional attachment (Jonason et al., 2013) and a high sense of loneliness in social interactions. The fact that individuals with such personalities have problems in their social relations supports this finding. For example, an individual with Machiavellian personality can deceive others for their own interest and may not be sincere to others. Once this is noticed by others, the individual may come up against loneliness (Jakobwitz & Egan, 2006). Dark triad represents apparent personality traits which are not welcomed by the society and lead to negative consequences both for individuals and organizations. Individuals with dark triad personalities exhibit avoidant behaviors when developing relationships with the opposite sex and social relations (Jonason et al., 2010). The effect of narcissism on loneliness was found to be positive but statistically non-significant in the research. This result coincides with some of the findings in the literature (Dumas et. al, 2017; Scott et al., 2018). However, there is study which concluded narcissism and loneliness to be related. While part of these studies concluded a negative correlation between narcissism and loneliness (La Sala et al., 2014), a study found a positive correlation between narcissism and loneliness (Mahajan, 2013). Thus, different results have been achieved in studies on the relationship between narcissism and loneliness. According to Zhang et al. (2015), narcissistic individuals think that their relationships should be decent due to their superiority complex and because social relations are appreciated by the society. By this way of thinking, they can exert all the effort to maintain their relations and avoid being alone. The authors also stated that participants might have provided misleading statements about not being alone when answering the measures in narcissism studies.

The second hypothesis, *"Total effect of dark triad on empathic tendency is significant"*, was confirmed except that effect of narcissism on empathic tendency was non-significant.

As concluded in the research, psychopathy and Machiavellianism of dark triad personalities had a negative significant effect on empathic tendency. Thus, low empathic tendencies of individuals with psychopathic and Machiavellian personalities in this research confirmed the expectation that it is one of the basic characteristics of such individuals. Previous research in the literature has also observed lower emotional empathic tendencies among individuals with Machiavellian, psychopathic and narcissistic personalities (Giammarco & Vernon, 2014; Jonason et al., 2013; Jonason and Kroll, 2015; Mahmut et al., 2008; Wai and Tiliopolous, 2012).

Researchers with different perspectives mention that individuals with high levels of dark triad experience emotional deficiencies. It is observed that such individuals, particularly those with psychopathic personality, spend very little time in their inner world and focus more on getting what they want from the outer world (Jonasson & Krause, 2013). As suggested by Malterer, et al. (2008), individuals with psychopathic tendencies have adaptive problems due to their failures in the societal domain despite their sufficient intelligence. Giammarco and Vernon (2014) report that individuals with dark triad personalities avoid experiencing emotional discomfort that stems from the suffering of another person. According to Mahmut, et al. (2008), individuals with high psychopathic levels use power rather than empathy to manipulate others.

However, it was found that narcissistic personality of dark triad had a negative but non-significant effect on empathic tendency. There are studies in the literature in support of this finding (Jonason & Kroll, 2015; Wai and Tiliopoulos, 2012). Wai & Tiliopoulos (2012) emphasize that this might be a result of self-report bias. The authors think that it is also because narcissistic individuals who can only use the cognitive aspect of empathy have better understanding of how they are perceived by others due to their need to have their own opinions adopted and reinforced. It is therefore argued that desire is rather in the forefront in understanding needs and feelings of others, and consequently, narcissistic people would not be motivated by social emotions (Jonason & Kroll, 2015). Accordingly, it is thought that evaluations of the participants on narcissistic personality were biased.

The third hypothesis, **"***Effect of empathic tendency on loneliness is significant",* was accepted.

Empathic tendency was found to have a negative significant effect on loneliness. In other words, emerging adults feel less lonely with higher empathic tendency. Pamukçu and Meydan (2010) explored that the strongest predictor of loneliness was empathic tendency in a sample of undergraduates in Turkey. This finding of the present study is in parallel with the negative significant correlations between romantic loneliness and family loneliness and affective and cognitive empathy as achieved by Büyükcebeci (2017). Despite being in different samples, a research finding coincide with this finding (Jiao and Wang, 2018).

According to Rogers (1975) empathy, above all, eliminates loneliness. At least, someone who receives empathic understanding even once feel that they are part of humanity. Dökmen (2005) suggests that parties who try to establish conflicting communication cannot acquire sufficient information, and to top it all, become lonely. In non-conflicting communication, parties can relay sufficient information to each other but are still lonely. On the other hand, in empathic communication, not only is there adequate information transfer but also parties are not alone. Due to the facilitating role of empathy in interpersonal communication, it is thought that individuals with high empathic skills experience loneliness less. Thus, with higher empathic tendency, social relations of individuals can improve, they can understand others better and elude loneliness as they have improved relations with them.

The fourth hypothesis, *"Empathic tendency has a mediating role in how dark triad (Machiavellianism, psychopathy and narcissism) affects loneliness"* was confirmed except for non-significant effect of narcissism on loneliness via empathic tendency.

This finding suggests that empathic tendency is a critical factor in the loneliness of emerging adults with dark triad personalities. Researchers with different theoretical perspectives state that individuals with high dark triad personalities have incompetence in emotional matters (Jonason & Krause, 2013). It is emphasized that such individuals may have difficulty in understanding and processing emotional condition of others and their own emotions. In other words, spending too much time with one's own or others' feelings conflict with strategies of individuals with dark triad personalities (Schimmenti et al., 2019).

During important stages of in life, individuals need to contact with others functionally. However, individuals with dark triad personalities exhibit manipulative behaviors which will lead to dysfunctionality in the long run, behave impulsively and can have communication problems as they do not possess the empathic skill to understand others (Jonason et al., 2013). As a result, with lower empathic skills, individuals find it difficult to communicate, and consequently, are more likely to become lonely. Affected by personality traits, loneliness is also influenced by dark triad personalities which can cause dysfunctional communication, and lower empathic skills of individuals with Machiavellian and psychopathic personalities in particular can increase the risk of loneliness. Thus, in the study, the emerging adults with Machiavellian and psychopathic personalities of dark triad might have experienced loneliness due to their lower empathic tendencies.

SUGGESTIONS AND FUTURE STUDIES

In this study, empathic tendency was found to have a mediating role between dark triad and loneliness. Future studies can examine different variables which have critical importance between dark triad and loneliness and can strengthen interpersonal relations. Since this is a cross-sectional study, longitudinal studies can be performed to collect more accurate data. On the other hand, similar to most studies, self-report measures were utilized to measure dark triad in the research. As stated by

Zhang et al. (2015), use of self-report measures can pose a problem since it is hard for individuals to evaluate their personalities and dark triad personalities are associated with emotional deficiencies. Differences in the measures of narcissistic personality in particular are of evidential value for this issue. Hence, different techniques can be utilized to measure dark triad personalities in future studies. In addition, it is thought that educational programs for improving the empathic tendencies of emerging adults will be effective in reducing their loneliness.

COMPLIANCE WITH ETHICAL STANDARDS

Ethical Approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Consent to Participate: Informed consent was obtained from all individual participants included in the study.

Conflict of Interest: On behalf of all authors, the corresponding author states that there is no conflict of interest.

Funding: No funding was received for conducting this study.

Data Availability: Data and material are available from the corresponding author upon reasonable request.

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No person or institution other than the authors contributed to the research.

AUTHOR CONTRIBUTION

The researchers contributed equally to all of the research processes.

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Developing a Perception of Decentralization Scale in the Educational Administration for Turkey

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Abstract

The purpose of the research was to develop a scale to achieve a decentralized structure of the educational administration system, contribute upon scientific studies, reveal the reasons for the negative perceptions of administrators and teachers against decentralization, test its validity and reliability and make an evaluation in terms of various variables in Turkey. Descriptive survey was used on 899 teachers and administrators with the official grant of Adana governorship. Validity, reliability, and internal consistency tests and exploratory and confirmatory factor analyses were performed for construct validity, and t-test and ANOVA analysis were performed for determining the differences between the variables., A three-factor structure of 36 items was created at the end of the exploratory factor analysis. It was observed that there was a significant difference at $p<.05$ level of significance between the perceptions of the variables of gender, participation status, preference, and the institution they worked, and there was no significant difference between the variables of age, seniority, educational status, and marital status.

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INTRODUCTION

The concept of decentralization which has been expressed in the mid-20st century and become a worldwide trend with the economic depression of 1970, has caused significant changes in the fields of administration. Organization for Economic Cooperation and Development (OECD) countries have abandoned their administrative understanding of central government and adopted transferring their power towards the local and transferred all powers to local actors to improve the quality of services in the service sectors such as education, health, and security, and have experienced great economic and social transformations acting as independent of the central government (Bakioğlu, 2014). These change and transformation have been especially efficient in terms of educational administration and have led many countries to move to a decentralized structure in educational administration systems. Although Turkey is an OECD country, it is in a constant debate on this issue both in itself and in some Central Asia (Japan, South Korea, Singapore, etc.), and when compared to the European Union (EU) and OECD countries, it has still continued an overly decentralized educational administration system going back to 1960s (Çınkır, 2010). All decisions about educational services are taken from the center and implemented in the form of a package program for the whole country regardless of regional differences (cultural, economic, and social). This has prevented the progress in both education, social and economic fields, and also has caused inequality of opportunity in education (Li, 2017). The need for change and transformation is inevitable for Turkey. Making the Turkish education management system dominate the common sense, sustainability, transparency, competition, accountability, democracy, and participatory management approach will carry Turkey to the economic, social and educational level of developed countries.

The Turkish educational system started to meet with global actors such as the EU, International Monetary Fund (IMF), OECD and World Bank (WB) after the mid-20th century. The transfer of the educational system to local authorities has necessarily been stated before each agreement in the educational sections of the financial agreements with IMF; in the letters of intent submitted to IMF, loans were received, after each agreement, but no results regarding the transfer of Educational Administration to local authorities have been obtained (Özdemir & Beltekin, 2012). Thirteen projects have been carried out with training cooperation activities started between the World Bank and Turkey in 1971 (Özdemir & Beltekin, 2012). Among these projects, there have been studies on decentralization in educational administration. After the loan agreements made with the World Bank, no results regarding decentralization in educational administration have been obtained. However, although various legal arrangements have been made, these arrangements have been rejected on various grounds.

For example, it was aimed to present various principles and suggestions for local administration reform, decentralize centralized-bureaucratic structures and transform them into strong and democratic, effective, and efficient local administration units with the Public Administration Research Project (KAYA, 1991; Coşkun, 2005). One of the goals of the Secondary Education Project implemented in 2002 was the decentralization of education, especially the financial autonomy and independence of schools (Özdemir & Beltekin, 2012). The project was implemented, but after the project, the work related to the purpose of the project was not carried out. The draft law of the Public Administration Basic Law prepared in 2003 has been based upon developing a participatory, transparent, accountable, fair, rapid, effective, and efficient administration approach in public services and providing the most appropriate and closest unit to those who benefit from the place and service in public services (Odabaş et al., 2016). The biggest step taken so far on decentralization has been fulfilled with this draft law. However, this draft was rejected by the president of the period on the grounds that it would disrupt the unitary structure of the state. In accordance with the Municipal Law No. 5393 adopted in 2005, municipalities have been authorized to build, renovate, and open preschool educational institutions related to educational services. However, the authority of establishing a preschool was denied by the

Constitutional Court (Odabaş et al., 2016). This situation was due to the political structure of Turkey. Various pressure groups in the country's administration have created a negative perception of decentralization in public opinion creating fear that decentralization would lead the country to division.

This perception has been felt in educational administration, and teachers have been influenced due to this pressure affecting other educational stakeholders in decentralization negatively. This effect has revealed itself in scientific studies and (Şişman et al., 2003; Gülşen, 2005; Taşar, 2009; Ölmez et al., 2011; Karataş, 2012; Öz, 2013) caused different results in face-to-face qualitative studies such as different surveys and scales, in anonymous and non-face-to-face studies, as well (Koçak-Usluel, 1995; Köksal, 1997; Kıran, 2001; Çınkır, 2010; Turan et al., 2010; Karataş et al., 2017). For example, whereas national integrity is often expressed in qualitative studies, democracy, human rights, quality of education or executive deficiencies are expressed more often in quantitative studies. This environment has appeared as an obstacle for decentralization in educational administration. Policymakers fail to fully understand the intentions of education stakeholders and their imperfections in decentralized administration and are hesitant whether they will receive support from them. They are not able to take decisive steps regarding decentralization from the concerns arisen for this reason.

Most of the scientific studies on decentralization in education in Turkey are qualitative. While qualitative studies are in the form of face-to-face interviews and literature reviews, in 3 of the quantitative studies the scale has been used and, in the others, surveys were used to obtain information. Some quantitative studies are also based on social and economic statistical data (Ayrangöl et al., 2014; Ölmez et al., 2011; Göksoy, 2020). One of the scales was developed by Koçak-Usluel (1995), one by Köksal (1997), and the other by Çınkır (2010). The scales prepared by Koçak-Usluel (1995), and Köksal (1997) are related to the transfer of the authority of the central administration towards decentralization in education to local governments and the acceptance of decentralization; on the other hand, Çınkır 's (2010) scale is about transferring of the duties and powers of the Ministry of National Education to the local government regarding the decentralization of education and to what extent decentralization in education is accepted. Whereas some of the positive aspects and disadvantages of decentralization are prominent in qualitative studies, the positive aspects of decentralization and the extent to which decentralization administration are adopted have become prominent in quantitative studies.

The most comprehensive scale in terms of scale development in the international sense is the OECD 2018 International Teaching and Learning Survey (TALIS) scale developed by the OECD the results of which have been announced. It is an international, large-scale survey for teachers, school leaders and learning environment in schools. Only the section of autonomy of teachers and administrators in the survey has been related to the content of this article (OECD, 2018). This autonomy is at the school level. Although it measures the perceptions of teachers and administrators' autonomy, it cannot be said that the scale in this study exactly matches the meaning and context of the decentralization concept tried to be measured. For example, this scale differs from the TALIS scale in terms of the definition (content) of decentralization, the capacity of local governments and local administrators managing educational administration and explaining how the positive attitudes that decentralization can bring to educational administration are perceived. The scale questions also have the feature of being possible to be adapted into an interview form when necessary and are also possible to create a qualitative study opportunity for researchers. Researchers also have the opportunity of conducting further comparative researches on qualitative and quantitative results.

The opposite for decentralization in Turkey is perceptual. The scale is intended to reveal the perceptions of the facts such as negative perceptions of decentralization, attitudes, capacities of local administrators, lack of adequate understanding of decentralization, insufficient knowledge on benefits of the consequences, democracy, human rights, insufficient knowledge related to the positive contributions upon a qualified administration structure, inability of perceiving its contribution on economic development adequately, and etc.

A descriptive study and survey of the quantitative method including the positivist understanding of philosophy was reflected in this study. Causality, reductionism, experimental measurement, and theory verification created the research process. The data were collected longitudinally with an electronic questionnaire (Google survey). The sample was randomly selected from the population, and a new scale was chosen as the data collection tool (Creswell, 2017). How administrators and teachers perceived decentralized understanding of administration was tried to be revealed with this study on a developed scale.

CONCEPTUAL FRAMEWORK

Urbanization, globalization, and changes in the quality of democracy, regionalism and decentralization tendencies in democratization, administration and organization approaches are the most important phenomena for today's administration approach (Görmez, 2005, p. 47). With the support of the WB and the OECD, globalization and neoliberal policies that began in the 1980s have brought significant changes in economics, politics, and administration, and the first steps of decentralization in the administration were taken (Doğan, 2016, p. 1795). Agenda 21 of the United Nations Conference on Environment and Development "Earth Summit" held in Rio de Janeiro in 1992 defined the concept of sustainable development and governance (Güneş & Beyazıt, 2012, p. 26). In 1999 and 2004, the OECD defined the principles of governance and made recommendations on implementation to all member countries. OECD sees governance as tantamount to decentralization (OECD, 2004).

Oates (1972) and Rondinelli (1981) put forward the theory of decentralization and expressed it as a situation that benefits local communities. Rondinelli later stated that there were three forms of decentralization based on Oates' theory of decentralization as decentralization, transfer of authority, and authorization (as cited by Kang, 2020). While these studies were more about the financial part of decentralization, McGinn and Welsh (1999) started the decentralization movement in educational administration associating these forms of decentralization into the educational context; and finally, Werner and Shah (2006) conceptualized and decentralized the financial decentralization of education, devolution, and they associated it with empowerment concepts (Kang, 2020). Such distinctions within the general term of 'decentralization' emphasized the need to consider various possible forms of decentralization in education. The literature suggested that these differences should be regarded in discussions of decentralization.

Decentralization was defined variously in national and international literature. The decentralization was defined as the transfer of decision-making authority, democracy, little control, participation, sharing responsibility, and eliminating inequality between regions by Bucak (2000), as secession from the centre by Kang (2020), as the transfer of decision-making responsibility, power and authority from higher-level organizations to lower-level organizations by Leung (2004), as the transfer of power from central administration to low-level administrative units within the political, administrative, and national hierarchy, the transfer of decision-making power to regions, municipalities or local governments, and a tool allowing citizens to participate in government by Yuliani (2004), as ensuring a more productive administration system eliminating the bureaucratic process and ensuring qualified progress by Hazman and Kucukilhan (2018), as giving people a role in determining their needs rather than giving people the right to manage the resources allocated to them by OECD, and as a form of governance in which problems arising from decision-making power, access to education, waste and misadministration possible to be overcome by The United Nations Educational, Scientific and Cultural Organization (UNESCO) (as cited in Hazman & Kucukilhan, 2018, p.45). According to the definition of the World Bank, decentralization is the transfer of public powers and responsibilities from the central government to the provincial organization and local governments or to semi-autonomous government organizations and / or the private sector. In this framework, four different types of decentralization were defined as political, administrative, financial, and market (as cited in Keskin, 2008, p. 618). Decentralization, in general, was used to refer top-down transfer of authority within the state.

Whereas Hanson (1997), Gershberg (2005), Zajda (2006) defined decentralization as cooperation in the public sphere, communication, coordination, democracy, justice, participation in decision-making, rapid decision-making, Ökmen et al., (2013) and Popescu (2013) defined it as a management area where transparency, accountability, less bureaucracy, efficiency, and productivity found the best use. It was noticed that the definitions were grouped in terms of the functioning of decentralization, its social and economic effects, and local administrative power and functioning.

Ayrangöl and Tekdere (2016) stated that there were different classifications in the literature on the types of decentralization as well as the definition and stated that the most commonly used classification methods were regional and functional decentralization. Functional decentralization involved leaving the authority to administrate a particular function to organizations specialized in a specific matter on a national or local basis, and regional decentralization involved transferring public functions to local organizations with well-established geographical boundaries. The classification of the world bank was political, administrative, financial and market (privatization) decentralization (Keskin, 2008). Koçak-Usluel (1995) classified decentralization as width of authority, transfer of authority and decentralization; Donnelly et al. (2017) classified it as authorization, decentralization, transfer of authority and separation (delegation, deconcentration, devolution and decoupling) and authorization. Authorization was defined as a transfer, decentralization of tasks and administrative functions related to specific functions which were usually defined by central authorities, the transfer of powers and responsibilities to lower system levels, the transfer and separation of authority and actual responsibility from the centre to local bodies, and the divergence between policy directives, implementation and results.

In this context, decentralization of administration systems ceased to be a proposal and turned into a necessity. This necessity was based on many reasons. Jeong et al. (2017) and Rauf et al. (2017) listed these reasons as accountability adding local power to decision-making processes and improving efficiency in administration and resource use, contributing upon economic development with institutional modernization, distributing financial responsibility from the centre to the local, supporting local democratization, increasing local control transferring authority to local governments and increasing the quality of education. Gershberg (2005) and Salinas (2014) explained the reasons for decentralization in the educational administration system as to meet local demands, to prevent bureaucracy, to minimize waste of resources, to coordinate government programs with the local, to reduce the cost of communication, to mobilize local dynamics and to provide local financial participation, to benefit from local know-how and experience, to increase the impact of local supervision, accountability, cooperation, and to convey in the form of ensuring transparency. Similarly, Florestal and Cooper (1997) and Falcão (2015) explained decentralization as saving, increasing administration efficiency and flexibility, delegating responsibility to the local, raising revenues, giving administrative responsibility to the lowest level of local government, giving local people a voice in matters concerning them, and recognizing local diversity.

Bucak (2000), Papadopoulou and Yirci (2013), and Falcão (2015) listed the concepts that decentralization in education administration brought to society from an educational, social, financial, administrative perspective as development, change, innovation, responsibility, access, human rights, competition, equality of opportunity, financial participation, regional differences, education quality, inequality, impact, development, national unity, application, flexibility, adaptation, representation, curriculum, training programs, motivation, encouragement, motivation, ownership, integration, and development of democracy. These authors discussed the positive and negative contributions of these concepts upon administration in various ways with the appearance of decentralization in the educational administration system. In Latin America, the meaning of decentralization indicated political pressure from the people for democracy, while the meaning of decentralization in Turkey was expressed by the concern of division bringing national integrity to the forefront. Decentralization was used as a way of ensuring national unity in Africa (Tekdere, 2013). This contrasted with the perception on Turkey's national unity.

Decentralization was not only prominent with its positive side. It was stated that there were also negative aspects. For example, Oates (1999, 2005), Gershberg and Winkler (2004) expressed that education with decentralization went beyond its purpose entering into the conflict area of power centres and it had a negative impact on the future of the country. Furthermore, Li (2017) stated that funding in decentralization caused inequality of opportunity in education. Papadopoulou and Yirci (2013) noted that decentralization was possible to make it difficult to follow a single policy in educational administration, and Venkataraman and Keno (2015) noted that it was possible to complicate overcoming local challenges such as adequate financial support, lack of trained manpower, and low number of teachers (p. 165).

Although decentralization created a significant contribution on social and educational sphere, it became an area of many financial challenges, as well. If sufficient financial resources could not be created, it was also possible to affect educational and social achievements. For example, while Gershberg and Winkler (2004) and Galiani (2008) found the positive contributions of fiscal decentralization in Eskeland; and Filmer (2002) in Argentina, Barankay and Lockwood (2007) in Switzerland, Gershberg and Winkler (2004) and Galiani (2008) stated in their studies that they could not find any evidence of the effects of fiscal decentralization on student achievement, and stated that most of the positive contributions of decentralization stemmed from parental involvement (as cited in Kang, 2020). DeBoer (2012) revealed in his study in the USA that financial centralism brought more benefits than financial decentralization. Ferrari and Zanardi (2014) stated that there was talk over a central financial reform for the equitable distribution of resources in the southern regions of Italy (as cited in Kang, 2020). From Turkey's perspective, Papadopoulou and Yirci (2013) attributed the barriers to decentralization of education to financial, decision-making challenges, the situation of local governments and legislative problems.

This study aimed to develop a scale to achieve a decentralized structure of the educational administration system in Turkey, contribute on scientific studies, reveal the reasons for negative perceptions of decentralization in administrators and teachers, test its validity and reliability, and make an evaluation in terms of various variables (age, gender, educational status, etc.). The following questions shed light on this study:

1. How is the validity and reliability of the content and structure of the scale developed for decentralization of the educational administration system?

2. Is there a significant difference between the views of teachers and administrators on decentralization of the educational administration system according to the variables of gender, age, seniority, educational status, marital status, participation status, the institution they work, and preference?

METHOD

The research reflected reductionism because it tested the assumptions of positivist philosophy as a causalistic philosophical understanding in which causes & effects were determined reducing ideas to small and independent pieces and reflected empiricism due to its understanding of measuring and revealing existing information. This study carries out on causality, reductionism, experimental measurement, and theory validation included two stages. The first stage included developing a scale including content validity, exploratory and confirmatory factor analyses on localization of the educational management system, and the second stage included testing whether there was a difference between the views of teachers and educational administrators about the decentralization of educational administration according to various variables.

RESEARCH DESIGN

Descriptive study and survey of the quantitative method were used for this research. The purpose of descriptive study and survey was to describe the trends, attitudes and opinions of the studies conducted on a sample selected within the universe numerically (Karasar, 2014). The first stage of the research was based on scale development. Büyüköztürk (2005) stated that the scale development process included four stages as "defining the problem," "writing the items," "seeking expert opinions," and "pre-application" (p. 1). The Decentralization of Educational Administration System Scale created during this research was developed within the framework of a four-stage system. In the first stage, qualitative data were collected according to the research subject followed by defining and classifying the problem. In the second stage, the questions for the draft scale were created. In the third stage, the content validity of the draft scale form was determined depending on expert opinions. In the fourth stage, the first and second trial applications of the draft form of the scale were conducted, and the construct validity of the form was evaluated using Exploratory Factor Analysis and Confirmatory Factor Analysis. After performing exploratory and confirmatory factor analyses, the scale development process was completed. In the other dimension of the study, t-test and ANOVA analyses were performed to determine whether there were differences of opinion between the teachers and administrators who participated in the research on the basis of the selected independent variables.

SAMPLE

In terms of the quantitative data, the research population included teachers and administrators carrying on their duties in all organized and non-formal education institutions in Seyhan District of Adana Province in 2016-2017 academic year. The sample was selected with random selection method. The permission was obtained from the schools and institutions where the process was implemented in two stages. The reason for conducting the process in two stages was to test whether the data obtained from two different sample groups selected randomly from the same body gave similar results and to test the reliability of the information (İslamoğlu, 2011, p. 133). Schools in each category were arranged in alphabetical order and two groups were created grouping the schools in a category according to the number of teachers and administrators. Considering the exploratory and confirmatory factor analyses, generally 10-fold sample was required for each question (Çelik & Yilmaz, 2016, p. 41). Hence, totally 38 questions were planned to be included in the scale. As a general rule, the sample size to be used must be at least 5 times, but preferably, 10 times more than the number of questions (Karagöz, 2016). The number of samples for the scale was determined to be 38*10= 380 administrators and teachers. A draft version of the scale form was administered to the 1st and 2nd group schools determined previously. While administering the draft scale form, there were totally 421 participants including 300 teachers and 121 administrators in the 1st application, and there were totally 478 participants including 399 teachers and 79 administrators in the 2nd application. For the scale questions, test-retest was employed to 397 teachers and administrators in the first-group educational institutions (Table 2). Teachers and administrators in Groups 1 and 2 were different. Exploratory factor analysis was performed to teachers and administrators in 'Group 1' and confirmatory factor analysis was performed to those in 'Group 2'.

Table 1. *Seyhan District 2016-2017 Education Year of Instruction Administrator and Teacher Numbers*

Rank Id	*Title*	*Number*	*1stGroup*	*2ndGroup*
1	Administrators	696	354	342
2	Teacher	8.118	4.104	4.014
	TOTAL	8.814	4.458	4.356

Source: Seyhan District Directorate of National Education

The population of the research included 696 school principals and 8814 teachers carrying on their duties in Seyhan district in Adana province. There were 4,458 teachers and administrators in the first group and 4,356 in the second group.

Table 2. *Seyhan District 2016-2017 Education Year, Number of Formal Education and Non-formal Education Institutions*

Rank Id	*Common and Ordinary Educational Institutions*	*1stGroup*	*2ndGroup*	*Total Number*
1	Kindergarten	6	7	13
2	Primary school	45	44	89
3	Middle School	36	36	72
4	Secondary school	22	25	47
5	Other Institutions	6	5	11
	TOTAL	115	117	232

Source: Seyhan District Directorate of National Education

There were 232 educational institutions in Seyhan district of Adana province. Considering the number of teachers and administrators in these educational institutions, the participants were categorized under two groups. The educational institutions were listed in alphabetical order. Subsequently, they were categorized under two groups including equal number of teachers and administrators. Test-retest was performed to the first group, and the scale was applied to the second group. There were 115 educational institutions in the first group and 117 in the second group.

DATA COLLECTION

In this research, the projects, educational reports, legal regulations, development plans and the decisions of the councils written under the title of decentralization in education between 1980 and 2020 were evaluated as part of the content analysis. The conceptual codes obtained were converted into questions. The data collection form prepared by the authors was used at this stage. This form summarized content analysis, scientific studies, legal arrangements, project, council decisions and development plans under different categories. It was used to gather content related to educational administration system and create conceptual codes. Another data collection tool was the Expert Evaluation Form used to obtain expert opinions for determining the nature and content of the scale items. The last tool was the decentralization of education administration system scale developed by the authors within the scope of this research. The scale included two parts. The first aimed to determine personal information about teachers and administrators, and the other was a scale developed to determine their opinions on decentralization of the educational administration system.

The answers to the scale used in the research were arranged in 5 stages as incremental and at equal intervals including “I strongly agree”, “I agree”, “Neither agree nor disagree”, “I do not agree”, “I strongly disagree,” and the scores of “5, 4, 3, 2, and 1” were ranked, respectively. The questionnaire created for the scale was tested for content validity obtaining expert opinions and the necessary permissions were obtained to administer the draft version of the scale; teachers and administrators in Seyhan district of Adana received a link to access the questionnaire (Google Survey). The reason for this data collection method was its being cost-effective and providing easy access to the data, and easy processing the data to the database. Last, the data were collected in two stages. Validity and reliability information was included in the findings section.

DATA ANALYSIS

Content analysis was performed to the collected data and recorded in the MAXQDA 10 database software to create various thematic areas and questionnaire items, and the data were coded conceptually using the coding method. In the analysis, it was observed that the contents were generally related to local administration, the capacity of local governments, the decentralization dimension of education, the social, educational, economic, and administrative achievements of education, and the positive and negative dimensions of decentralization. These dimensions created the main themes of the scale to be developed. These concepts were turned into 46 open-ended questions and the scale items were created subsequently. As result of the expert opinions and applications, these questions were reduced to 36 items.

Within the scope of the general purpose of the study, IBM Statistical Package for the Social Sciences (SPSS) (Version 24) and Linear Structural Relationships (LISREL) (Version 8.80) package program were used for analysis depending on the collected data. Exploratory factor analysis, t-test, and ANOVA were performed with the SPSS package software, and confirmatory factor analysis was performed with LISREL package program.

T-test and one-way analysis of variance (ANOVA) were used for evaluating whether there was a difference depending on the independent variables in terms of the scores of the scale, and the Tukey Test was used to find the source of the difference in cases where the result was significant. In the analysis of the data, the level of significance was accepted to be p=.05. When the difference between the number of samples in the groups was too high, it was determined whether the results were significant according to the p values of the intra-group Gabriel test, Hochberg test and Games-Howell Test. The normality of the distribution was tested with kurtosis and skewness coefficients.

FINDINGS

The findings included two parts: The findings in the first part were related to scale development, while those in the second part were about the personal and professional characteristics of the administrators and teachers in the sample group and the difference in the mean scores of the scale related to the Decentralization of Educational Administration Systems.

CONTENT VALIDITY

Content and construct validity studies were conducted for the validity study of the scale. A 46-item question pool was prepared using the codes obtained from the literature. Yurdugül (2005) stated that the relationship between the scale to be developed and the situation to be measured should be consistent in scale development studies in field of education and psychology (p. 1). For this reason, it was important to continue with the opinions of experts related to the scale to be developed and to ensure the consistency of the results of the following stage of the statistical analysis (Tabachnick & Fidel, 2015, pp. 17,60). Expert opinions were consulted for content validity. An expert evaluation form was used for this purpose. Content validity rates were determined depending on the expert evaluation form results. Content validity ratios were used to convert qualitative studies based on expert opinions into statistical quantitative studies (Yurdugül, 2005). The content validity rate was determined to be minimum .62 for 10 experts and the content validity index was determined to be >=.62 for each question item (Yurdugül, 2005). Various rates were determined for this. In this study, the content validity ratios and the 6 -step content validation process known as the Lawshe technique were used (Lawshe, 1975). After the questionnaires were written and reviewed, the draft scale was submitted to three instructors, six school administrators and one teacher.

The results were evaluated according to the feedback received at the end of the first evaluation, and the content validity index was calculated to be .51. The content validity ratio for 10 experts was found to be less than .62. In total, 10 questions with negative or <.51 negative opinions reported by the experts were excluded, thus the scale was sent to the experts for the second evaluation reducing the form to 38 items. Revised questions were processed, and feedback was taken into consideration. All experts approved the questions. The revised draft scale form was re-evaluated, and the content validity index was found to be .91. This value was found to be statistically significant as the scale validity of the draft scale form was higher than the validity rate of the scale as .62 (Yurdugül, 2005). No negative opinions were reported for the questions. It was therefore concluded that the draft scale was appropriate for measuring the decentralization perception in educational administration system. The content validity of the scale was statistically significant.

CONSTRUCT VALIDITY

Factor analysis served many relevant purposes; as previously mentioned, one of its primary functions was being an indicator of how many implicit variables were at the base of a group of items (DeVellis, 2014). Instead of giving a single coefficient for the validity of the measurement tool, it was applied to reveal the factor structure or confirm the previously predicted factor structure (Çokluk et al., 2014). According to Büyüköztürk (2002), exploratory factor analysis is conducted to find factors and propose theories; confirmatory factor analysis indicated that the factor hypothesis was tested and confirmed construct validity.

Erkorkmaz et al. (2013) described confirmatory factor analysis as an extension of exploratory factor analysis (AFA) and stated that exploratory factor analysis provided information to establish hypotheses, while confirmatory factor analysis was used to test whether the relationship between the factors determined was sufficient to explain the model (p. 211). Therefore, construct validity was tested performing both exploratory and confirmatory factor analyses. Exploratory factor analysis was applied to data obtained from teachers and administrators in Group 1, and confirmatory factor analysis was applied to data obtained from teachers and administrators in Group 2. The samples for the exploratory and confirmatory factor analyses were different. The exploratory and confirmatory factor analyses applied to the different groups were used to test the construct validity indicated by Erkorkmaz et al. (2013), and Büyüköztürk (2002).

The Draft Scale for the decentralization of the Educational Administration System content validity of which was confirmed and required legal permissions were obtained was sent to the schools and institutions of Seyhan District in Adana Province as presented in Table 2. Exploratory and confirmatory factor analyses were performed to the data obtained from the administrators and teachers.

Due to the fact that all fields in the online scale were requisite, there were no missing or incorrect data. It did not contain missing value. The data were tested for extreme values. Nineteen extreme values were found in the test-retest first measurement and 5 extreme values were found in the second measurement, and these extreme values were excluded from the assessment process. In addition, seven participants did not participate in the second test. After subtracting the outlier and the number of non-participants, test-retest analysis was performed with 378 participants. 437 participants participated in the first application of the scale, 16 outliers were determined, and 421 participants were analysed. 490 participants participated in the second application, 12 outliers were identified, and the analysis was conducted with 478 participants.

The normality tests (Skewness-Kurtosis and Normal Distribution test) were performed to the data obtained from the application of the draft scale form. Based on the normality, the Skewness values were in the range of -.337 to +.112 and the Kurtosis values were in the range of -.518 to +.223. The data with normal distribution was determined to have (-1.0) and (+1.0), Tabachnick and Fidel (2015) determined to have (-1.50) to (+1.50) and George and Mallery (2010) determined to have (-2.00) to (+2.00) Kurtosis and skewness values. Therefore, it could be said that the data has normally distributed.

Table 3. *KMO and Bartlett's Test of Sphericity*

		1st Application	2nd Application
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.978	.981
Bartlett's Test of Sphericity	Chi-Square	25367.529	20714.135
	Degree of freedom(df)	703	630
	Significance level(p)	.000	.000

Correlation matrix, Bartlett test and Kaiser-Meyer-Olkin (KMO) test were used to determine the appropriateness of factor analysis (Sevim, 2014, p. 949; Karagöz, 2016). The Kaiser-Meyer-Olkin (KMO) value calculated to determine the appropriateness of the draft scale for factor analysis was found to be higher than 0.60 with the value of 0.978 for the first application and .981 for the 2nd application (Table 3).

Table 3 presented the KMO values calculated to evaluate the suitability of the data structure for factor analysis in terms of size of the sample groups of both stages as 378 and 421 individuals. This value was considered to be sufficiently high to perform factor analysis (Çokluk et al., 2014). When the Bartlett test results were analysed, it could be observed that the obtained chi-square ($\chi 2$) value was significant at .000 level.

Table 4. *Total Variance Explained 1st Application*

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	28.097	73.939	73.939	15.096	39.726	39.726
2	1.761	4.635	78.574	8.320	21.896	61.622
3	1.317	3.467	82.041	7.759	20.419	82.041
4	.618	1.627	83.668			

Table 5. *Total Variance Explained 2nd Application*

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	%of Variance	Cumulative %	Total	%of Variance	Cumulative %
1	23.778	66.049	66.049	14.899	41.385	41.385
2	2.204	6.123	72.172	6.892	19.143	60.529
3	1.237	3.436	75.608	5.429	15.079	75.608
4	.704	1.955	77.563			

In Tables 4 and 5, the number of components was presented in the first column. In the first column, the group under the name of "Initial Eigenvalues", the total eigenvalue (total), percentage of contribution on variance (% of Variance) and cumulative percentage of contribution on variance (Cumulative %) were presented in terms of their contribution on the total variance. In the second column group called "Rotation Sums of Squared Loadings," there was a suggestion for the factor number (Çokluk, et al., 2014).

Three factors were proposed for the explanatory factor analysis to be performed as could be seen in the second column group of "Rotation Sums of Squared Loadings" in Tables 4 and 5. The reason for the three factor propositions was that there were three components that invalidated the eigenvalues 1. In other words, considering the 'Total' values in the first column group under the heading of "Initial Eigenvalues," there were three factors above the initial essence value 1. It could be noticed that the contribution of these three factors upon the variance was 82.041% for the first application and 75.608% for the second. When determining the number of factors, attention should be paid to how much each factor contributed on the total variance. Considering the "Percent of Variance" values in the first column group under the heading of "Initial Eigenvalues," it was possible to observe that the first three components contributed significantly on the variance, and this contribution decreased from the other components. Consequently, it was determined that the factor number should be set to three. However, before this decision could be finalized, it was useful to analyse the "Scree Plot" graph (slope accumulation graph) (Çokluk et al., 2014). When the Scree plot graph was analysed, the analysis was repeated using the Varimax vertical rotation technique considering that the actual significant decrease appeared after the second factor (Table 5).

Table 6. *Rotated Factor Matrix (Varimax)*

Pre-application factors				Post application factors			
Article	1	2	3	Article	1	2	3
M8	-.784			M3	.827		
M6	-.771			M4	.791		
M7	-.749			M2	.776		
M3	-.737			M7	.776		
M2	-.723			M5	.766		
M9	-.705			M6	.763		
M4	-.695			M1	.698		
M1	-.652			M9		.758	
M5	-.525	-.517		M8		.751	
M11		.837		M11		.740	
M10		.805		M10		.679	
M13		.751		M12		.661	
M21		.697		M29			.793
M14		.691		M26			.792
M12		.679		M25			.790
M27			.788	M31			.784
M31			.783	M30			.782
M26			.778	M36			.781
M35			.776	M18			.778
M19			.770	M23			.771
M38			.768	M27			.766
M17			.767	M33			.765
M23			.760	M24			.758
M24			.759	M35			.758
M32			.750	M28			.750
M37			.750	M15			.741
M28			.743	M21			.734
M30			.738	M22			.728
M25			.733	M34			.726
M22			.733	M13			.712
M20			.732	M14			.705
M33			.730	M32			.702
M36			.727	M17			.700
M16			.725	M20			.698
M18			.725	M16			.687
M29			.695	M19			.632
M15			.647				
M34			.640				

At the end of the preliminary application of exploratory factor analysis, question item of M5 was included both factor 1 and factor 2 (Table 6). Therefore, it was excluded from the scale because the difference in factor loading values was below the target value of .10 (.008) and below the predicted factor loading lower limit value of (.60) (Tabachnick and Fidell, 2015). At the end of the pre-application, interviews were conducted with the teachers and administrators in the educational institutions where the scale was applied and opinions about the survey questions were obtained. The question of 'Which administration system would you work with if it was left to your preference' was added to the personal information section as well as the question designed to measure the perceptions of 'local government' were converted into 5-point Likert-type questions which could better represent the opinions of the experimental subjects in terms of uncertainty and determine whether they agreed or disagreed. For this reason, depending on the feedback obtained for these experimental subjects, these questions were converted to 5-point Likert scale questions for the second stage application (In the explanatory factor analysis, negative (-) values (Table 6, application 1, column 1) indicated that these questions received positive (+) values at the end of the second application revealing the accuracy of the subjects). As could be seen from both application results, the factor and item load values were found to be sufficiently above the value considered to be very good (.70).

According to Table 6, it could be seen that at the end of the pre-application, the first factor was 8, the second factor was 6, the third factor was 23; however, at the end of the second application, the first factor was 7, the second factor was 5 and the third factor was 24. The first subscale was the Locally Administered Perception, the second subscale was the Perception of Local Government's Ability to Govern the Local Administration System, and the third subscale was the Perception of Decentralization's Contribution to Economy, Education, Administration and Social Life.

For confirmatory factor analysis, the factors found in the exploratory factor analysis and the question items under these factors were tested. The Chi-Square (χ2) test and a number of different fit indices were also used to test the model fit in confirmatory factor analysis. If these fit indices were excellent and acceptable with the predicted scale results, the scale could be able to measure the determined variables and factors. The preference of integration indices depended on the specific aims of the researchers (İlhan & Çetin, 2014, p. 31). The confirmatory factor analysis was applied to the teachers and administrators in the second group and the results were presented in Table 7.

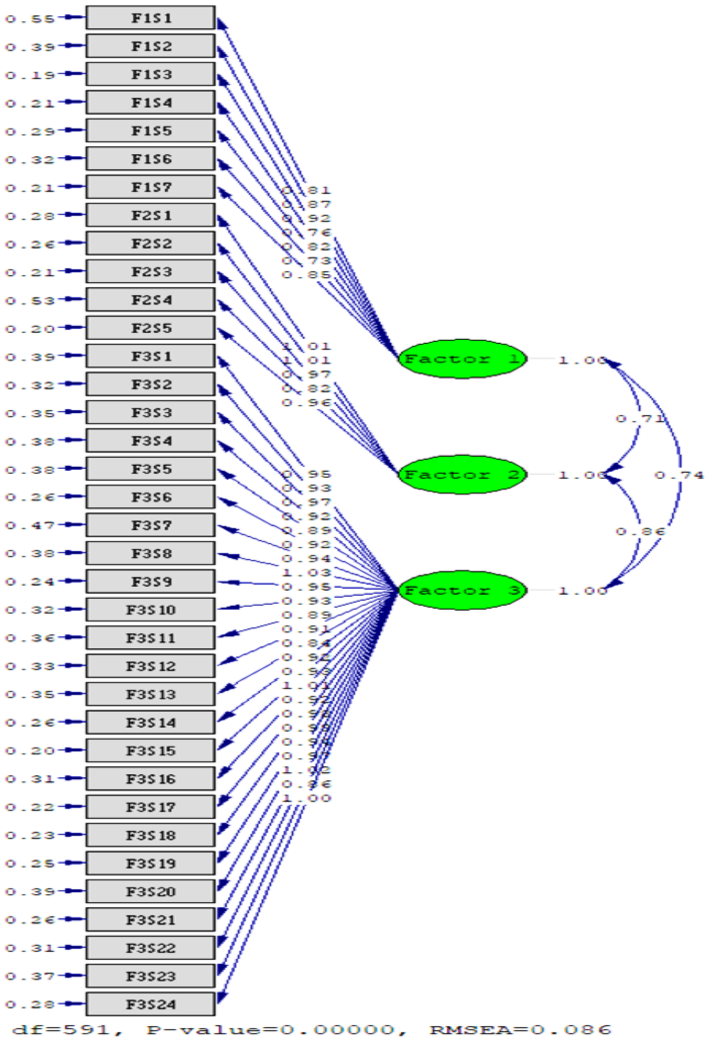
Table 7. *Excellent and Acceptable Compliance Criteria for Compliance Indices Used in the Research*

Index	Perfect Consistence Criteria	Acceptable Consistence Criteria	Research Finding	Result
X^2/sd	0-3	3-5	4.36	Acceptable
RMSEA	.0<RMSEA<.05	.05<RMSEA<.10	0.086	Acceptable
CFI	.95 <CFI < 1.00	.90<CFI<. 95	.99	Perfect
NNFI	.95<NNFI(TLI)<1.00	.90<NNFI(TLI)<.95	.99	Perfect
NFI	.95<NFI<1.00	.90<NFI<.95	.98	Perfect
SRMR	.0<SRMR<.05	.5<SRMR<.08	.032	Perfect
GFI	.95<GFI<1.00	.90<GFI<.95	.76	Poor Compliance
AGFI	.90<AGFI<1.00	.85<AGFI<.90	.73	Poor Compliance
RFI	.95<RFI<1.00	.90<RFI<.95	.98	Perfect
IFI	.95<IFI<1.00	.90<IFI <.95	.99	Perfect
PNFI	.95<PNFI<1.00	.50<PNFI<.95	.92	Acceptable
PGFI	.95<PGFI<1.00	.50<PGFI<.95	.68	Acceptable
AIC	Comparison model smaller than AIC		1332,00<2819,44	Acceptable
CAIC	Comparison model smaller than CAIC		3207,16<4774.96	Acceptable
ECVI	Comparison model smaller than ECVI		2,79<5.91	Acceptable

Reference: This result was adapted from Schumacker and Lomax (1996), İlhan & Çetin (2014)

In confirmatory factor analysis, many different fit indices were used together with the Chi-Square (χ2) test to test the model fit. Among these indices, there were good agreement for goodness of fit index (GFI), poor agreement for adjusted goodness of fit index (AGFI), excellent agreement for standardized root mean square residual (SRMR), comparative fit index (CFI) for acceptable the root mean square error of approximation (RMSEA) perfect fit, perfect fit for relative fit index (RFI), perfect fit for incremental fit index (IFI), perfect fit for normed fit index (NFI), perfect fit for non-normed fit index-Tucker-Lewis index (NNFI-TLI) acceptable fit for parsimony adjusted NFI (PNFI), acceptable compliance for parsimony adjusted goodness of fit index (PGFI), acceptance for an akaike information criterion (AIC) (acceptable for choosing between the different models), acceptance for a consistent akaike information criterion (CAIC) and expected cross validation index (ECVI) (Table 7). The path analysis related to these fit indices was shown in Figure 3. Analysis of the model measurement reference adaptations indicated that the scale had a good fit with the indices. The scale was revealed that the desired perceptions could be measured in accordance with the determined sub-factors (Çelik & Yilmaz, 2016, p. 39). The scale could be deemed sufficient to measure the decentralization perception in educational administration system. The results indicated that the scale was valid and reliable.

Figure 1. *Path Analysis*



RELIABILITY

The reliability of the scale was tested by the Cronbach's alpha internal consistency coefficient and test-retest reliability coefficient. In order to evaluate the reliability of the scale related to the Decentralization of Educational Administration System, item analysis was performed and Cronbach's Alpha, Spearman-Brown and Guttman internal consistency coefficients were all calculated.

In the correlation analysis between test and retest measurements, it was found that r= 896 and $p < 0.05$. Cronbach's Alpha was found to be 0.934. This indicated a high positive correlation between test-retest measurements. It meant that there was a significant relationship between the test-retest measurements of the scale items and the stability, consistency and reliability of the measurements were high (Table 8).

Table 8. *Decentralization of Education Administration System Scale, Internal Consistency Coefficients*

	pre-post test	1st Application	2nd Application
Cronbach Alpha	0.934	0.971	0.973
Spearman-Brown	0.945	0.895	0.944
Guttman	0.934	0.926	0.877

Table 8 presented that the Cronbach's Alpha, Spearman-Brown and Guttman values were relatively high. Since all internal consistency coefficients were higher than 0.80, it was possible to mention that the reliability of the scale related to the Decentralization of Educational Administration was high. In other words, it could be said that all the items in the scale related to the Decentralization measured the same property. The reliability coefficients obtained by the two methods showed that the measurements of the scale were reliable.

ANALYSIS OF DECENTRALIZATION PERCEPTION IN EDUCATION ADMINISTRATION SYSTEM BY PERSONAL AND PROFESSIONAL VARIABLES

In order to test whether there was a significant difference between the Perceptions of Decentralization of the Educational Administration System according to certain variables, normality and homogeneity of variances were tested. As the results of the tests data were normally distributed and the population variances were equal (homoscedasticity), parametric tests, t-test and ANOVA analysis were used (Büyüköztürk, 2014; Tabachnick & Fidel, 2015). The t-test was used to determine the level of significance (p = 0.05) between two independent variables and ANOVA was used for more than two variables; in other words, t-test was performed for gender, marital status, participation status and preference variables, whereas ANOVA analysis was performed for the variables of age, seniority, educational status, and institution.

The results of ANOVA and t-test representing the differences between the personal and occupational characteristics of the administrators and teachers in the sample and the mean scores of the scale related to the Decentralization of Educational Administration System were presented below (Table 9,10,11,12 and 13).

Table 9. *Age Variable ANOVA Results*

	n	$\bar{X}$	S		df	Mean Square	F	p
20-25	14	3.74	.774	Between Groups	4	.627	.820	.513
26-30	71	3.41	.801	In-Group	473	.765		
31-35	111	3.41	.882	Total	477			
36-40	99	3.31	.924	Gabriel test p value=.165				
40 and older	183	3.39	.876					
Total	478	3.39	.874					

According to Table 9, because the, p value for the variable of age in ANOVA test results was 0.513>0.05, there was no significant difference between the age groups, and the variance between groups was homogeneous. The decentralization perception in educational administration system did not differ according to the average age groups. Since the number of samples in the groups did not differ significantly, the Gabriel test was performed to determine the difference. According to the results of the Gabriel test, the p value was higher than 0.05 in all age groups, and there was no significant difference between age groups.

Table 10. *Seniority Variable ANOVA Results*

	n	X̅	S		df	Mean Square	F	p
1-5	74	3.50	.819	Between Groups	4	.819	1.072	.370
6-10	97	3.43	.903	In-Group	473	.764		
11-15	98	3.45	.890	Total	477			
15-20	124	3.28	.870	Gabriel test p value = .564				
21 and up	85	3.34	.870					
Total	478	3.39	.874					

According to Table 10, the p value for the variable of seniority in ANOVA test results was 0.370>0.05, there was no significant difference between seniority groups, and the variance between the groups was homogeneous. The average of the decentralization perception in educational administration system did not differ according to the average of the seniority groups. As the difference between the number of samples in the groups was not significantly large, the Gabriel test was performed to determine the difference. Since the Gabriel test p values for all seniority groups were 0.564>0.05, it could be said that there was no significant difference in the decentralization perception in educational administration system.

Table 11. *Learning Status according to ANOVA Results*

	n	X̅	S		df	Mean Square	F	P
Associate Degree	9	3.89	.441	Between Groups	2	1.165	1.528	.218
Undergraduate	404	3.38	.858	In-Group	475	.762		
Master's Degree and Higher.	65	3.39	.995	Total	477			
Total	478	3.39	.874	GT2 Hochberg test p value **=** .129				

According to Table 11, the p value for the variable of educational status was found to be 0.218> 0.05, so there was no significant difference between the educational status groups and the variance between the groups was not homogeneous. The perception of the educational administration system decentralization did not differ according to the educational status groups. Since there was a significant difference between the number of samples in each of the groups, the Hochberg GT2 test from Post Hoc analyses were used to analyse the variance between the groups. Because the Hochberg-GT2 p values of the whole learning group were .129>0.05, it could be said that there was no significant difference in the decentralization perception in educational administration system.

Table 12. *Institution Variable ANOVA Results*

	n	X̅	S		df	Mean Square	F	p
Kindergarten	21	3.62	.771	Between Groups	4	3.093	4.155	.003
Primary school	144	3.35	.781	In-Group	473	.744		
Middle School	148	3.57	.864	Total	477			
High school	161	3.24	.940	Games- Howell Test p Value= .060				
Provincial / District National Education Directorate or other	4	2.57	.670					
Total	478	3.39	.874					

There were large differences between the number of teachers and administrators' according to the institution in which they worked. This was arisen from the high difference between the number of participants in the institutions. There were significant huge differences between the number of participants from primary, secondary, and high schools and the number of participants from kindergarten and Provincial/District National Education Directorate or other institutions. For example, while 161 participants were from high schools, the number of participants from the Provincial / District Directorate of National Education or other institutions was only 4. When the difference in the number of samples between the groups was very high, the Games-Howell test as Post Hoc analysis was used to determine the difference. As result of this test, the p value was found to be .060 which was higher than 0.05 significance value; therefore, it could be stated that there was no significant difference between all groups. However, on average, the kindergarten variable was the highest, and the Provincial / District National Education Directorate or other variable was the lowest.

Table 13. *T-Test Results for All Variables*

		n	$\bar{X}$	**S**	t	df	p
Gender	Female	247	3.23	.820	-4.163	476	.000
	Male	231	3.55	.899			
Marital status	Married	379	3.40	.861	.560	476	.575
	Single	99	3.34	.924			
Participation status	Administrator	79	3.68	.908	3.303	476	.001
	Teacher	399	3.33	.856			
Choice	Decentralization administration	260	3.88	.639	17.310	476	.000
	Central Administration	218	2.79	.736			

According to Table 13, there was a significant difference between male and female perceptions (t_{476}=.163, $p<.05$). Considering the averages, it was possible to mention that the males' Educational Administration System (EMS) decentralization perceptions ($\bar{X}$=3,55) were higher rather than the averages of females ($\bar{X}$=3,23), whereas the males' perception of decentralization was significantly more significant than females.

In terms of the variable of marital status, since the p values were 0.575>0.05, there was no significant difference between married and single participants. In terms of the males' Educational Administration System Decentralization, it could be noticed that single participants ($\bar{X}$=3.34) and married participants ($\bar{X}$=3.40) were very close to each other.

According to Table 13, there was a significant difference between administrators and teachers' perceptions (t_{476}=3.303, $p<.05$). Considering the averages, the average perceptions of administrators ($\bar{X}$=3.68) were higher than the average of the teachers ($\bar{X}$=3.33). It was possible to mention that administrators' perceptions of decentralization were more significant than teachers. Administrators were more interested in decentralizing administration.

According to Table 13, there was a significant difference between Local Government and Central Government perceptions in terms of preference variable (t_{476}=17.310, $p<.05$). Considering the averages of those who preferred Local Administration for Decentralization ($\bar{X}$=3,88) when compared with those who preferred centralized administration ($\bar{X}$=2,79), it was possible to say that those who preferred Local Administration were more significant than those who preferred centralized administration.

DISCUSSION, CONCLUSION AND SUGGESTIONS

DISCUSSION

DeVellis (2014) defined the scale as "a measurement tool (p.11) that was carefully and validly prepared when we could not rely on behaviour as an indicator of a phenomenon," while Özdamar (2016) defined it as "a measurement tool developed specifically to digitize affective, cognitive, behavioural, educational, and reactive emotion-state characteristics that were felt, known, but not observed". The decentralization scale of the education administration system was a study aiming to measure the causes of an intrinsically accepted phenomenon and developing and proposing new strategies depending on these reasons. The lack of an up-to-date scale has led to the need to improve this scale.

In order to determine the consistency of the scale items and the extent to which it covered decentralization of the educational administration system; expert opinions were obtained. Since the scope validity of the generated scale was 0.91>=0.62, it was statistically significant and was suitable for further statistical studies. The content validity of the scale was statistically significant, and therefore it was deemed appropriate for subsequent statistical studies. Tabachnick and Fidel, (2015), stated that it was very important to obtain expert opinions when developing a scale to ensure the consistency of the results of future research (Tabachnick & Fidel, 2015, pp. 17,60). Therefore, the scale items were suitable for subsequent statistical analyses and included the relevant area.

Exploratory and confirmatory factor analyses were performed to determine the construct validity. Erkorkmaz et al. (2013) stated that confirmatory factor analysis was an extension of exploratory factor analysis which provided information to establish a hypothesis (Erkorkmaz et al., 2013, p. 211). Again, Ozdemir et al. (2018) used exploratory factor analysis for construct validity and confirmatory factor analysis to confirm the construct validity in their study. At the end of the exploratory factor analysis, a scale including 36 items with 3 factors was obtained. The value explaining the total variance of the scale was found to be 75.608 and the Kaiser-Meyer-Olkin sampling adequacy value was .981. (Table 3). When the findings of the study were analysed, the load value of the items in the scale was found to be between 0.632 and 0.827. A factor load value of 0.45 or higher was a good measure of the validity of the scale (Büyüköztürk, 2007). These values indicated that the factor loads were acceptable at the validity dimension of the scale. It was noticed that the structure included three factors in which the first factor had 7 items, the second factor had 5 items, and the third factor had 24 items. The first sub-dimension was Local Perception of Administration, the second sub-dimension was the Perceptions of Local Government's Ability to Manage Educational Administration System, and the third sub-dimension was Perception of Contributions of Decentralization on Economy, Education, Administration and Social Life (Table 6).

The Chi-Square ($\chi 2$) test and several different fit indices were used to test the model fit of the confirmatory factor analysis. These fit indices revealed that the scale was possible to measure the variables and factors determined if the predicted scale results were at perfect and acceptable levels. The preference of integration indices was dependent on the specific aims of the researchers (İlhan & Çetin, 2014, p. 31). Because of the details of the purpose of the research and the importance of the subject to educational stakeholders, the authors preferred a quite large group of indexes (Table 7). As result of the analysis, it was observed that 6 fit indexes were in perfect fit, 7 fit indexes showed acceptable fit, and 2 fit indexes were poorly matched. The scale was sufficient to measure the decentralization perception in educational administration system in the scientific field. According to Çelik and Yilmaz (2016), the good fit of model measurement reference revealed that the determined factors were capable of measuring the perceptions in identified sub-items. The results obtained proved that the scale was valid and reliable. For the reliability of the scale, the internal consistency coefficients Cronbach's Alpha (0.973), Spearman-Brown (0.944) and Guttman (0.877) were found to be relatively high. If the reliability coefficient was calculated to be 0.7 or higher, this would indicate that the reliability of the test scores was sufficient (Büyüköztürk, 2007). In addition, Kotaman (2013) stated that the scales with internal consistency also provided structural validity. According to these results, the scale was found to be valid and reliable. In this study, the scale of the decentralization perception in educational administration system as a reliable and valid 5-point Likert-type perception scale was developed.

When the average responses of the administrators and teachers were analysed based on age (Table 9), seniority (Table 10), education status (Table 11) and marital status (Table 13) in the scale of Decentralization of Educational Administration System, it was observed that there were no significant differences between groups. They perceived the question items and the concept of decentralization in the educational administration system in the same way. The preferences for decentralization of the education administration system were high in terms of local governance in all levels of seniority. According to Korkmaz (2010, p. 77) despite the differences in the educational level of administrators, the reason why there was no significant difference in the opinions regarding the decentralization of education, the lack of effect on education situations as result of implementing the decisions taken by the central government in addition to the fact that administrators with different levels of education were, in practice, subjected to the same laws and requirements.

In this study, there was no significant difference in the opinions of the participants regarding the decentralization of the educational administration system according to the level of educational institution they worked in (Table 12). However, administrators and teachers working in preschool institutions had higher perceptions of decentralization in educational administration than those working in other educational institutions, indicated by their average responses to the scale questions ($\bar{X}$=3.62) in comparison to those in other educational institutions (Table 12). This appeared because municipalities and various associations contributed on the administration of the majority of preschool education institutions in the Turkish educational system. Therefore, it could be said the local governments had positive contributions on teachers and administrators in these institutions. This was possible to occur due to the positive results of local support provided by the educators in the kindergartens participating in the research in terms of the administration and quality of education. In fact, in Koçak-Usluel's (1995), study, it was found that more authority was demanded in preschool and primary education institutions, whereas secondary education and special status secondary education institutions demanded more central administration. Similarly, Yıldırım's (2008) study showed that preschool education was administered and financed by local authorities in many European countries (such as Germany, UK, Estonia, Finland, Netherlands, Italy, Lithuania, and Poland).

There was a significant difference between males and females in terms of the gender variable. Analysis of the averages revealed that the mean of male decentralization of education ($\bar{X}$=3.55) was higher than the female average ($\bar{X}$=3.23). It could be said that males preferred decentralization of educational administration system more than females. This could be arisen from the intense interest of males in administration affairs. Since males were found to be more interested in administration affairs and had more communication with local authorities, male educators were more possible to have preferred decentralization.

There was a significant difference between the opinions of the administrators and teachers regarding the decentralization of the educational system. The analysis of the averages proved that the mean of the administrators related to the Decentralization of the Educational Administration System ($\bar{X}$=3.68) was higher than the average of the teachers ($\bar{X}$=3.33) (Table 13). It could be stated that administrator's perceptions of decentralization were more statistically significant than the teachers, and they had a higher interest in administration in terms of decentralization. However, in Bozan's (2002) study, the majority of administrators working in the field were reported to be less enthusiastic about decentralization of the educational administration system (p. 161-162). Nevertheless, it has been observed in recent years that local administrations have particularly provided suport for schools for minor repairs, and the lack of bureaucratic procedures in their work and operations has affected the perceptions of administrators with regard to local governments and decentralization. In particular, due to education related policies in the metropolitan municipality law, suport for education may have resulted in the elimination of previously held negative perceptions. In Bakioğlu's (2014) study, it was revealed that education was managed and financed by local governments in many European countries. As result of EU projects prepared by the educational institutions in recent years, stakeholders have been able to observe how responsibility for education administration systems has been given to local governments in these EU countries, and the high quality of the education services provided may have led to an increase in the administrators' tendencies towards the decentralization of educational administration. Teachers' high participation rates could also be attributed to these factors.

The most important finding of this study was that administrators preferred decentralization more than teachers in terms of local and central administration preferences (Table 13). This was because they had more exposure to the limitations of central government in the administration processes. It was thought that the use of local facilities by administrators created a facilitating effect in regard to problem solving and made them aware of the fact that local businesses created a sustainable structure and that they preferred local administration. Teachers were not as interested in administration affairs, but although they had no much interest as administrators, they still preferred locals.

The sample group included only teachers and administrators, and it can be considered as a limitation of the study. However, it was thought that the participation of parents and local administrators in the sample group would eliminate this limitation. According to the findings obtained, it was noticed that the positive and negative aspects of decentralization reviewed in the literature were compatible with the findings of this study, and a stable success was achieved in educational administration in countries employing the principles of decentralization. According to this result, it could be stated that the results obtained in the study could be a good guide for policy makers. Finally, the developed scale was also possible to be a good source for scientific researches.

CONCLUSION

This study identified the problems that could arise as result of the decentralization of educational administration system in Turkey; preventative measures were considered to provide a significant contribution on eliminating false perceptions apeared among stakeholders about overcoming possible difficulties and decentralization of educational administration systems. As result, it could be used as a scientific source for overcoming administrative problems that have occurred in education in Turkey.

Performing exploratory factor analysis to draft scale questions which were validated with expert suport, "Local administration perception," "Local Administrations Perception of Administration Systems," and "Decentralization in Economy, Education, Administration and Perception of Contributions to Social Life" were the three factors determined on the basis of the confirmatory factor analysis performed according to the model reference compliance results. A five-point Likert-type scale was developed for interpreting the perceptions related to the decentralization of educational administration system possible to be used for educational administrators, policy developers and academicians in their work. It was able to measure the desired perceptions adapting well-defined factors within the sub-items.

To summarize, the scale developed in this research was intended to measure the perceptions of education stakeholders' efforts to decentralized educational administration. Most of the studies in the field were surveys and have largely been used to express opinions. The questionnaires have mostly been related to the decentralization dimension of educational services; however, this study focused on educational administration systems, in particular.

SUGGESTION*S*

It has been recommended to test the validity and reliability of this scale performing repeated measurements with education stakeholders in other provinces.

Using confirmatory factor analysis with a different sample group has been suggested for the subsequent studies. For example, the sample group could be further strengthened through the participation of parents.

In a region with well-equipped educational facilities and a sound infrastructure, it is recommended that the educational administration system is piloted, and the results should be monitored accordingly. Based on the obtained results, decisions can be made regarding plans to decentralize the educational administration system. It may not be possible to make efficient decisions without piloting the system first.

The researchers can transform the scale developed in the future into an interview form and make a comparative analysis with the scale results.

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AUTHOR CONTRIBUTION

The first author contributed to conceptualization, methodology, formal analysis, research, resources, data curation, writing—original drafting, writing, review, and editing. The second author contributed to project management, methodology, validation, supervision, review, writing, and editing.

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APENDIX

SCALE OF PERCEPTION OF DECENTRALIZATION IN EDUCATION ADMINISTRATION

Dear Participant,
The aim of this study (Decentralization of Education Administration System) is to develop a scale for the degree of aplicability of Decentralization of the Educational Administration System with the opinions of School / Institution Administrators and teachers. This scale will be the source of studies related to decentralization in the educational administration system which is frequently mentioned. I would like to thank you for accepting and taking time to contribute on this academic study. It is necessary for your research findings to be valid if you answer the questions sincerely and objectively. Please do not leave unmarked item and select an option for each item. Thank you for your contribution.
Respectfully.

Suphi Turhan &Ahmet Güneyli
Near East University Institute of Educational Sciences
Department of Educational Administration, Supervision, Economics and Planning

PART 1 Personal Information
This section includes some personal information about you.
You are expected to answer placing a (X) in the option that suits you.

1.	Gender	( ) Female ( ) Male
2.	Marital status	( ) Married ( ) Single
3.	Age	( ) 20-25 ( ) 26-30 ( ) 31-35 ( ) 36-40 ( ) 41 and above
4.	Seniority	( ) 1-5 ( ) 6-10 ( ) 11-15 ( ) 16-20 ( ) 21 and above
5.	Education status	( ) Associate Degree ( ) Bachelor's degree ( ) Master and above
6.	Title	( ) Teacher ( ) Administrator
7.	Institution	( ) Kindergarten ( ) Primary School ( ) Secondary School ( ) High School ( ) Provincial / District Directorate of National Education
8.	Which administration system would you like to work with, if left to your preference?	( ) Decentralization administration ( ) Central Administration

		I strongly agree	I agree	Undecided	I do not agree	I strongly disagree
PART 2. Perception of Decentralization						
9.	Decentralization performs structural and economic functions effectively and efficiently.	5	4	3	2	1
10.	Decentralization is solution-oriented and development-oriented in administration.	5	4	3	2	1
11.	Decentralization facilitates public participation in administration.	5	4	3	2	1
12.	Decentralization has fast decision-making mechanisms	5	4	3	2	1
13.	Decentralization is open to change and innovation.	5	4	3	2	1
14.	Decentralization reduces bureaucratic work and operations.	5	4	3	2	1
15.	Decentralization has a versatile communication in administration.	5	4	3	2	1
PART 3. Perceptions of Local Governments on Educational Administration Capacity						
16.	Local governments can create a democratic environment for the Educational Administration System.	5	4	3	2	1
17.	Local administrations can create the physical infrastructure for administration of the Educational Administration System.	5	4	3	2	1
18.	Local governments can create human resources for the Educational Administration System.	5	4	3	2	1
19.	Local governments can create financing sources for educational administration system.	5	4	3	2	1
20.	Local governments can manage the educational system effectively and functionally.	5	4	3	2	1

PART 4. Perception of Decentralization's Contributions on Economics, Education, Administration and Social Life						
21.	Decentralization of Educational Administration System reduces the MoNE's workload and enables it to create more realistic and effective education policies.	5	4	3	2	1
22.	Decentralization of Educational Administration System provides strengthening of local organizations and performs the tasks that MoNE cannot perform more effectively.	5	4	3	2	1
23.	Decentralization of Educational Administration System increases the quality of education increasing competition between regions and provinces.	5	4	3	2	1
24.	Decentralization of Educational Administration System facilitates the prioritization and solution of problems enabling local selection of training administrators.	5	4	3	2	1
25.	Decentralization of Educational Administration System increases education investments providing more financial resources to the public.	5	4	3	2	1
26.	Decentralization of Educational Administration System brings dynamism (mobility) to local governments.	5	4	3	2	1
27.	Decentralization of Educational Administration System enables on-site use of budgets transferred to education.	5	4	3	2	1
28.	Decentralization of Educational Administration System makes the administrator apointments local making them more fair.	5	4	3	2	1
29.	Decentralization of Educational Administration System affects the economy of the region and country positively.	5	4	3	2	1
30.	Decentralization of Educational Administration System makes the linear relationship between education and economy more effective.	5	4	3	2	1
31.	Decentralization of Educational Administration System reduces bureaucracy and paperwork.	5	4	3	2	1
32.	Decentralization of Educational Administration System reduces educational backwardness between provinces or regions.	5	4	3	2	1
33.	Decentralization of Educational Administration System facilitates determining educational priorities of the province or region.	5	4	3	2	1
34.	Decentralization of Educational Administration System provides local dynamics to education.	5	4	3	2	1
35.	Decentralization of Educational Administration System improves governance and participation.	5	4	3	2	1
36.	Decentralization of Educational Administration System improves accountability and transparency.	5	4	3	2	1
37.	Decentralization of Educational Administration System enables the public to adopt and suport education more.	5	4	3	2	1
38.	Decentralization of Educational Administration System increases the quality of education increasing the supervision of the society.	5	4	3	2	1
39.	Decentralization of Educational Administration System increases competition in service to education.	5	4	3	2	1
40.	Decentralization of Educational Administration System enables the participation of individuals in decision-making processes and eliminates decisions made by a single individual.	5	4	3	2	1
41.	Decentralization of Educational Administration System enables adoption of democratic education.	5	4	3	2	1
42.	Decentralization of Educational Administration System ensures equality of oportunity in education.	5	4	3	2	1
43.	Decentralization of Educational Administration System enables training program to be administered according to the needs of the current environment.	5	4	3	2	1
44.	Decentralization of Educational Administration System makes administrators and teachers more active.	5	4	3	2	1

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Impacts of a Cognitive Behavioral Approach Based Social Skills Training on the Social Skills of Freshman Students*

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Abstract

The present study aims to examine the impacts of CBT-based social skills training on the social skill levels of university freshmen. The sample of the study was comprised of 131 first year university students including experimental design with pre-test, post-test, and follow-up test with the control group. Social Skills Inventory (SSI) was applied to these 131 students and 20 students with scores below the standard deviation of the average were included in the study. The students were randomly assigned to the experiment and control groups in equal numbers. Mann-Whitney U Test, the Friedman test, and Wilcoxon Marked Rank Test was used. According to the results of this research, the SSI scores of the students in the CBT-based social skills group showed a significant increase after the social skills training and the effect of this increase continued in the follow-up study. An increase in the post-test scores of students in the control group received from SSI was also observed, and it was concluded that this increase was not statistically significant. As a result, it has been revealed that social skills training based on CBT is effective in increasing the social skill levels of first year university students.

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INTRODUCTION

Throughout their life, each individual meets certain physiological, social, and affective needs in order to continue their development. People live together and interact with each other in order to meet the need for sociability, which occupies an important place among these requirements. In this way, they can convey their feelings and thoughts to other people and thus establish communication. Social skills play an important role in ensuring and maintaining this communication in a healthy manner.

Social skills are defined as behaviors that a person exhibits to perform a social task (Gresham, 2016). These behaviors, which include skills such as problem solving, decision making, assertiveness, and interaction, are acquired through learning (Cook et al., 2008; Kolb & Hanley-Maxwell, 2003). The process of acquiring social skills begins with learning basic social skills in childhood, and over time these skills are developed and social relationships are formed (Salavera et al., 2017). In his theory of social skills, Riggio (1986) addressed basic social skills in six dimensions: Emotional expressivity, emotional sensitivity, emotional control, social expressivity, social sensitivity, and social control. Emotional expressivity refers to the ability to send nonverbal messages; emotional sensitivity refers to the ability to receive these nonverbal messages and communicate without words; and emotional control is used to express the ability to adjust and control nonverbal communication. Social expressivity includes verbal communication and self-expression skills, while social sensitivity encompasses the ability to receive and listen to these verbal messages. Finally, social control refers to role-playing and self-expression skills. Riggio (1986) noted the importance of keeping all dimensions in balance, rather than developing one dimension in the display of social skills.

People of different age groups are accepted through social skills and can develop positive relationships. In this context, it can be said that social skills are vital in peer and family relations, business life, academic environment, and many other areas of life (Yüksel & Erzincanlı, 2020). It may sometimes be difficult to demonstrate social skills despite their critical importance in people’s lives. As an example, factors such as the inability of an individual to learn behavior or generalize this acquired knowledge to different situations can prevent them from displaying social skills (Baker & Edelmann, 2002; Yüksel, 1999). As a result, people with low social skills may have difficulty initiating and maintaining social interaction, making friends, and effectively coping with the problems encountered in community life (Canpolat & Atıcı, 2019; Cartwright-Hatton et al., 2005). As a matter of fact, researches indicate that children and young people who lack social skills experience various problems. Studies illustrate that such people experience social isolation, are in a risky position in terms of bullying (Buhs et al., 2006), and have problems in their social relations and school life (Bracken & Fischel, 2007).

Such problems caused by the lack of social skills can further escalate if not intervened and can cause serious problems especially in the later years of children and young adults' lives (Craig et al., 2016). Social skills training programs have been developed by researchers in order to prevent these problems and improve the social adaptation of those who lack social skills. Social skills trainings are individual or group trainings aimed at eliminating problematic behaviors as well as teaching certain social skills. Although social skills training differs according to the approach taken as a basis, it is mostly based on (a) acquiring social skills, (b) demonstrating these skills, (c) eliminating problem behavior, and (d) maintaining social skills (Cook et al., 2008).

Cognitive behavioral approaches and techniques are often used in social skills training (Cook et al., 2008). Many findings have been obtained in previous studies indicating the effectiveness of this approach. It was reported in these studies that social skills training based on cognitive behavioral approach reduced social phobia in children (Donovan et al., 2015; Schleismann & Gillis, 2011; Spence et al., 2000), increased social cohesion in individuals diagnosed with schizophrenia (Rus-Calafell et al., 2013), and increased problem solving skills of individuals with disabilities (Khani & Moghaddam, 2019; Lecomte et al., 2012).

When the relevant literature is examined, it is seen that there are studies which show that various social skills trainings improve children and adolescents' social skill levels (Kılıç & Güngör-Aytar, 2017; La Greca & Santogrossi, 1980; Pekdoğan, 2016), their relationships with family and friends (Hon & Watkins, 1995), their social adjustment (Kabasakal & Çelik, 2010), and social problem-solving skills (Dereli, 2009). There seems to be a need for social skills training aimed at college freshmen when it is considered that social skills training programs are generally applied on children. When the studies conducted to improve the social skills of university students are examined, it has been observed that these programs are effective in increasing the social skills (Yüksel, 1999) and happiness (Shayan & AhmadiGatab, 2012) levels of university students, and in strengthening their social self-efficacy (Olaz et al., 2014), as in children and adolescents.

A cognitive behavioral therapy-based social skills training program has been developed in the present study to increase the social skills of university freshmen and the impact of the program on the social skill levels of students has been examined. Because students often find themselves in a new academic and social environment when starting their university education and need to improve their social skills to solve new social tasks (i.e. meeting someone or attending social events). Hence, it is considered that social skills training is necessary for helping students cope with the adaptation problems they experience during this period (Ioannidi & Gogaki, 2020). The aim of this study was to examine the impacts of social skills training program developed based on cognitive behavioral approach on social skill levels of first year university students. The research questions are as follows:

1- Is there a significant difference between the social skills pre-test mean scores of the participants in the experimental and control groups?

2- Is there a significant difference between the social skills pre-test, post-test and follow-up test mean scores of the participants in the experimental group?

3- Is there a significant difference between the social skills pre-test, post-test and follow-up test mean scores of the participants in the control group?

METHOD

RESEARCH DESIGN

A pre-test, post-test, control group semi-experimental design was used in the present study aiming to test the impacts of a social skills training program based on CBT on the social skill levels of freshman students. The 2×3 split-plot included the first element with independent process groups of the experimental and control group, while the second element included the repeated measures related to the dependent variables (pre-test, post-test, follow-up) (Creswell & Creswell, 2017). The research design is shown in Table 1.

Table 1. *Research Design*

Groups	*Pre-test*	*Intervention*	*Post-test*	*Follow-up*
Experimental	M_1	SSTP	M_3	M_5
Control	M_2	-	M_4	M_6

Mi: Measurement, SSTP: Social skills training program

STUDY GROUP

The study group was comprised of 20 freshman students continuing their education during the 2016-2017 academic year at a state university located in Southern Turkey and who volunteered to participate in the study. Convenience sampling method was used in the study. The convenience sampling method is the method in which units that are close and easy to reach are selected as the sample (Büyüköztürk et al., 2017; Creswell & Creswell, 2017). When assigning participants, a subject pool was formed by implementing the Social Skills Inventory to 131 university students attending 1st year level education of primary school mathematics teaching and psychological counselling and guidance programs. A total of 20 students with scores below a standard deviation of the average were included in the study. The students were assigned randomly to the experiment and control groups in equal numbers. Three students from the experimental group and 2 students from the control group left the study due to their time constraints. While the gender distribution of the 7 students in the experimental group was 1 male and 6 female students; the control group was comprised of 3 male and 5 female students making up a total of 8 students.

DATA COLLECTION INSTRUMENTS

PERSONAL INFORMATION FORM

The form contains the participant's personal information such as age, gender, grade level. This form also includes a section containing the informed consent of the participant for taking part in the CBT based Social Skills Training program.

SOCIAL SKILLS INVENTORY

The Social Skills Inventory was developed by Riggio (1986) and was revised in 1989 thus taking its current form (Riggio 2005). Social Skills Inventory is a 90-item self-report type measurement tool to measure basic social skills. Although on a small scale, it is a comprehensive measuring tool, SSI was originally developed for personality and social psychology research. SSI measures social skills in six different subscales. In addition, it calculates the global social skill level that includes all social competence or social skills in total.

The main subscales are:

1. Emotional Expressivity,
2. Emotional Sensitivity,
3. Emotional Control,
4. Social Expressivity,
5. Social Sensitivity,
6. Social Control.

Each of the subscales above consists of 15 items. Sample items of the scale are as follows: “I am able to liven up a dull party” for Emotional Expressivity; “I sometimes cry at sad movies” for Emotional Sensitivity; “I am easily able to make myself look happy one minute and sad the next” for Emotional Control; “I usually take the initiative to introduce myself to strangers” for Social Expressivity; “I’m generally concerned about the impression I’m making on others” for Social Sensitivity; and “I can easily adjust to being in just about any social situation” for Social Control subscale. A five-point Likert-type (1= Not at all like me, 2= A little like me, 3= Like me, 4= Very much like me, and 5= Exactly like me) answer key was prepared for the items in the inventory. The lowest score was 1 and the highest score was 5. An individual can get the lowest 90 points and the highest 450 points from the whole inventory. The minimum and maximum subscores that can be obtained from the inventory are 15 and 75 respectively. Social Skills Inventory was adapted to Turkish by Yüksel (1998), was used in the present study. The total number of items and the number of subscale items in Turkish version are the same as in the original form. Yüksel (1998) reported the internal consistency coefficient of the inventory as .85 and the Cronbach’s Alpha coefficient of the subscales varied between .56 and .82. In addition, Canpolat and Atıcı (2019) found the internal consistency coefficient of the scale as .82 in their study. DiTommaso et al. (2003), on the other hand, concluded that the internal consistency coefficients of the subscales of the SSI ranged from .69 to .90. In this study, the Cronbach Alpha value was calculated as .82.

PROCEDURE

First, the necessary permissions were obtained for using the scale. Afterwards, 131 first year university students voluntarily completed the scale. The implementation of the scale was carried out with the permission of the lecturers and the application process was completed in a single course hour in March 2017. By analyzing the data obtained from the scale, 20 students with a standard deviation (SD: 25.40) below the mean (X = 291.27) were determined and randomly assigned to the experimental and control groups. Interviews were conducted with the students assigned to the experimental group, their informed consent was obtained for their participation in the group, and preliminary information on the process was given. In addition, the participants in the experimental group were informed that the group process would be recorded with a camera, and their questions regarding privacy were answered. The students in the experimental group participated in the Social Skills Training Program once a week for a total of 6 sessions between April 5 and May 10, 2017. Each group session ranged from 60 to 90 minutes and was held in one of the university's group counseling rooms. For the Social Skills Training program, expert opinion was obtained from a faculty member who completed his doctorate in psychological counseling and guidance, and the program was revised accordingly. Moreover, the group leader (1st author) has an European Association for Behavioral and Cognitive Therapies (EABCT) accredited 450-hour CBT training. After each session, supervision was received from a PhD level psychological counselor specialized in the field of CBT.

No study was conducted with the students in the control group. In the last session of the Social Skills Training Program, the students in the experimental group were given a post-test, and the students in the control group were given a post-test in the same week. Follow-up measurement was applied on students in both the experimental and control groups six months after the post-test.

INTERVENTION

The Social Skills Training program was a psycho-educational group study based on Cognitive Behavior approach. The main purpose of the Social Skills Training Program is to enable individuals to increase their social skills levels. The goals of the process and sessions were determined first when developing the social skills training program, thus drawing up a general framework for the program. Later, content for these goals was created. Summarizing was requested at the beginning and end of each session, and the participants were asked to provide feedback on the process, the group leader and themselves at the end of each session. Thus, it was aimed to ensure that the acquired information on social skills is permanent. The sessions and aims in the program are presented in Table 2.

Table 2. *Social skills training program*

Session	*Aims*
Session 1: Meeting and Introduction to CBT	To meet group members and understand the group process To explain general goals of the program To form group rules To comprehend the Cognitive Behavioral Therapy approach and its basic philosophy, thought-emotion-behavior relationship
Session 2: Social skills and importance of thoughts	To learn social skill concept To recognize problems occur in social areas To recognize the effect of problems occur in social areas on their lives To understand the role of thinking in the problems they experience in their social life. To recognize negative automatic thoughts To realize their coping mechanisms
Session 3: Body language	To understand the importance of body language To comprehend the importance of expressing oneself in non-verbal ways.
Session 4: Nonverbal communication	To realize the nonverbal messages To perceive accurately the nonverbal messages from others

Session 5: Me language	To distinguish between "you language" and "me language" expressions To comprehend the importance of using "me language" in their conversations.
Session 6: General Assessment and closure	To notice the skills gained in group To end the group relationship To evaluate the sessions and the program To leave the group with positive emotions

DATA ANALYSIS

SPSS 23.0 software was used for data analysis. Significance level was selected as p< .05 for data analysis. Descriptive statistical techniques were used when calculating mean and standard deviation values for scores received by experimental and control groups from measurements. One of the conditions for parametric tests is the normal distribution of data. It was concluded as a result of the normality analysis that the data did not display normal distribution. Because the data is not normally distributed, Mann-Whitney U Test was performed to determine whether there is a difference in pre-test scores between experiment and control groups in terms of social skill level. Later, the Friedman test which is the non-parametric form of one-way analysis of variance for repeated measures was used. In addition, the Wilcoxon Marked Rank Test was used to determine the measurements with significant differences.

FINDINGS

Descriptive statistics were calculated related to scores received by the participants in the experimental and control groups. The values obtained are presented in Table 3.

Table 3. *Descriptive statistics*

Variable	*Groups*	*N*	*Pre-test*		*Post-test*		*Follow-up test*	
			Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*
SSI	Experimental	7	230.98	25.47	270.31	21.21	271.54	22.52
	Control	8	230.80	24.71	260.80	12.76	266.21	18.95
	Total	15	230.88	24.15	265.24	17.27	268.70	20.10

Social skill scores of the participants in the experimental group increased in post-test (X= 270.31) and follow-up (X= 271.54) measurements. In addition, an increase was observed in the social skill scores of the participants in the control group, in their post-test (X= 260.80) and follow-up (266.21) measurements.

Mann-Whitney U Test was performed to determine whether there is a difference in pre-test scores between experiment and control groups in terms of social skill level. According to these Mann-Whitney U test results a difference could not be observed between the pre-test scores of the experimental and control groups [U(15) = 25, p> .05].

Friedman test was used afterwards for identifying whether this increase was statistically significant or not. Analysis results are presented in Table 4.

Table 4. *Friedman test results*

Groups	*Measures*	*N*	$\bar{X}_{Rank}$	χ^2	*df*	*p*
Experimental	Pre-test	7	1.07	9.556	2	0,008*
	Post-test	7	2.36			
	Follow-up test	7	2.57			
Control	Pre-test	8	1,38	5.097	2	0,078
	Post-test	8	2,19			
	Follow-up test	8	2,44			

**p< .05*

There was a statistically significant difference between the pre-test, post-test, and follow-up test means of the experimental group [$\chi^2_{(2)}$ 9,556, p< .05], but no statistically significant difference was found between the pre-test, post-test and follow-up test means of the control group [$\chi^2_{(2)}$ 5,097, p> .05]. Table 5 presents the results of the Wilcoxon Signed Ranks test applied to determine the measurements with this difference.

Table 5. *Wilcoxon signed ranks test results of the experimental group*

	Negative ranks			*Positive ranks*			*Test statistics*		
	N	Mean rank	Sum of ranks	N	Mean rank	Sum of ranks	Ties	*Z*	*p*
(Pre-test)-(Post-test)	0	0	0	6	3.5	21	1	-2.201[a]	.028*
(Pre-test)-(Follow-up)	0	0	0	7	4	28	0	-2.366[a]	.018*
(Post-test)-(Follow-up)	3	4	12	4	4	16	0	-.338[a]	.735

**p< .05*

[a] *Based on negative ranks*

It can be observed when Table 5 is examined that there is a significant difference between the experimental group's pre-test and post-test (z = -2.201, p < .05), pre-test and follow-up test (z = -2.366, p < .05) mean scores. There was no significant difference between the post-test and follow-up test mean scores (z = -.338, p> .05). It can be understood based on these findings that the mean scores of the post-test and follow-up test are significantly higher than pre-test mean scores. Based on these results, it can be put forth that the applied social skills training program has an impact on the social skills of freshmen.

DISCUSSION

The aim of the present study was to examine the impacts of a cognitive-behavioral approach-based social skills training program prepared to improve the social skill levels of new university students.

A significant difference was found between the pre-test and post-test mean scores of the students in the experimental group participating in the program, and no difference was observed between the post-test and follow-up test mean scores. Accordingly, the social skill levels of the students in the experimental group increased significantly compared to before the procedure and the effect of this increase continued in the monitoring study at the end of the intervening six-month period. On the other hand, an increase in the social skill levels of students in the control group was also observed, however it was concluded that this increase is not statistically significant. In other words, the social skill levels of the students in the control group increased after the procedure. It is thought that the increase in the social skill levels of students in both the experimental and control groups is related to the implementation time of the program. The application of this social skills training program was started during the first weeks of the spring semester which was completed towards the summer, when the weather got warmer and the students could spend more time outside thus engaging in more physical activity. In the study, which emphasizes the importance of physical activity for individuals, the Turkey Public Health Care Institution (2014) states that physical activity contributes significantly to the development of social relationships, communication skills and positive self-perception in individuals. Therefore, it is possible that the social skill levels of the students in the control group may have increased since the implementation process coincides with a season in which students spend more time outdoors.

The effectiveness of the training has been examined over various samples during other experimental studies utilizing social skills training based on cognitive behavioral approach. Laugeson and Park (2014) used cognitive behavioral methods to improve the social skills of adolescents diagnosed with autism spectrum disorder and found an increase in the social skills, peer interactions, and social sensitivity of adolescents. Herbert et al. (2005) examined the effects of cognitive behavioral group therapy and social skills training on individuals with social anxiety. The study results illustrate that the intervention provided a decrease in the social anxiety and depression levels of the participants. In another study, Canpolat and Atıcı (2019) applied the cognitive behavioral social skills training program on university students and found that the social skills and psychological well-being levels of the students increased significantly. Rus-Calafell et al. (2013) applied cognitive behavioral social skills training to individuals diagnosed with schizophrenia. According to the results obtained, the social adaptation, interpersonal interaction and social cognition levels of the participants in the experimental group differed from the participants in the control group. Maddox et al. (2017) examined the effects of cognitive behavioral group therapy on social impairment in adolescents with autism spectrum disorder. According to results, adolescents’ social impairment improved during treatment and continued to improve through the 3-month follow up. Granholm et al. (2013) applied cognitive behavioral social skills training to older with schizophrenia. The treatment showed significant improvements in motivation, depression, anxiety, positive self-esteem and life satisfaction.

These research findings in the literature and findings from the current study show that cognitive behavioral social skills training programs are effective in improving social skills.

CONCLUSION

The current study aims to examine the impacts of the cognitive behavioral social skills training program. The results of the study showed that the social skills training program is effective in improving the social skill levels of university freshmen which continued during the follow up study. In addition, a statistically insignificant increase was observed in the social skill level of the control group, who took part in the study and did not receive any intervention. For this reason, there was a need to make some suggestions in order to identify the reason for the increase in social skill levels of the students in the experimental group more clearly and to obtain more realistic results about the effectiveness of the applied program:

Social skills training based on CBT prepared within the scope of the research was applied in the spring term. During this period, students have experienced the first difficulties in the school adaptation process and have the opportunity to socialize more with the warming of the weather in Turkey at these times. It can be recommended to carry out the application during the fall period when first-year students encounter the new environment and have relatively less opportunities for socializing.

Only the social skill level of university students was considered as the dependent variable in the present study. Variables other than social skills can be included in the research in later studies and the effect of the program on these variables can be examined.

No intervention was made on the students in the control group participating in the study and only the pre-test and final tests were applied. More reliable results on the effectiveness of the program can be obtained by adding a second control group to the study (placebo control group in which activities that are not associated with social skills are applied).

AUTHOR CONTRIBUTION

The researchers contributed equally to the study.

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Do Attitudes Towards Animal Rights Predict Empathy?*

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Abstract

The attitudes that are formed due to human-animal interactions has proven to be an essential and unique research field for psychology. This study aims to determine whether the attitudes of adults towards animal rights significantly differ according to the following variables: gender, educational background, marital status, having children, pet ownership, and membership to non-governmental organizations dealing with animal right issues. It also examines how attitudes towards animal rights predict empathy. The participants of the study are 493 adults (289 female, 204 male), living in Turkey. The participants were determined through convenient sampling method. The data was collected through Attitudes towards Animal Rights Scale and Basic Empathy Scale. Independent samples t-test and multiple standard linear regression analysis were used for the analysis. The results revealed significant differences between the participants' attitudes towards animal rights and their gender, educational background, marital status, having children, pet ownership, having a pet in the past and membership to non-governmental organizations dealing with animal right issues. In addition, regression analysis showed that attitudes towards animal rights and having pets in the past accounted for empathy. The study showed that respect to animal rights is an important variable that accounts for empathy. Suggestions and directions for further research are discussed.

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INTRODUCTION

Since the beginning of history, humans and animals have always lived together and interacted with each other and animals have played a significant cultural and social role in modern societies in many areas (Taylor & Signal, 2005). One of these roles is the beneficial effects of animals in mental health areas such as more motivation, less anxiety or depressive symptoms, increased social relations and emotional wellbeing (Bolstad et. al., 2021; Foerder & Royer, 2021; Hawkins et al., 2021; Janssens et. al., 2020). Animal rights refers to dealing with human-animal relations as a social movement within the framework of laws and organizations (Siddiq et al., 2018). If humans see animals as creatures that are different from them and inferior to them, they are likely to develop an attitude based on the assumption that animals exist only to serve them, which might lead to unethical and harmful consequences such as extinction of some animals, shortage of resources due to overuse of animal products and some certain ecological risks (Beatson & Halloran, 2007). The terms animal rights and animal welfare differ from each other in some ways. First of all, animal rights developed much later than animal welfare. In addition, animal welfare deals with well-being of animals, and it suggests that especially animals which need human care should be fed well enough, their necessary medical needs should be met, and they should never be exposed to any physical or mental violence (Hile, 2009). On the other hand, "animal rights" goes even further by suggesting that animals should never be used for work, agriculture, food, clothing or entertainment purposes. In other words, animal rights advocates emphasize that animals should be treated as fairly as humans. When it comes to political concerns for animal rights issues, there is more information needed regarding our attitudes, beliefs and perceptions (Widdicombe & Dowling-Guyer, 2021).

Although animals have an important role in every society, the attitudes towards animals can differ depending on cultures or individual differences like age, experience with animals, and gender (Morrison et al., 2021). The related literature includes many studies focusing on attitudes towards animal rights. One of these studies examined university students' attitudes towards animal testing. The study found that the group that supports animal testing consists of males who are masculine, conservative and have low empathy levels, and those who are against animal testing often support vegetarianism (Broida et al., 1993). Another similar study revealed that sensitive and imaginative people have more positive attitudes about animals than rough and realistic individuals and women have more positive attitudes towards animals than men (Mathews & Herzog, 1997). In another study conducted with university students, results showed that growing up in rural areas had significantly lowered attitudes towards animal scores. It was also found that women, students who had experiences with pets and service animals, and those who are learning about animals using newspapers/magazines have more positive attitudes towards animals (Morrison et al., 2021). In a different study with psychology students, the researchers found that women, people who support left-wing policies, those who consider themselves pet lovers and vegetarians have more negative attitudes towards experiments using animals when compared to other groups (Furnham & Heyes, 1993). The study conducted by Vigorito (1996) revealed that first year students have more negative attitudes towards animal rights than fourth year students. Similarly, Pious (1996) found that professionals in the field of psychology support the animal tests that only involve observation and confinement, but do not approve tests that are likely to cause pain or death; he also found that opposition to animal testing was stronger in women. Some research conducted in the following years showed that women are against the exploitation of animals in experiments more than men, educational background does not cause significant difference on attitudes; the strongest attitudes against exploitation of animals in experiments come from vegetarians (Furnham et al., 2003); people who currently have a pet or had one during his/her childhood have more positive attitudes towards animal rights (Hazel et al., 2011); and men have lower levels of positive attitudes and emotional empathy for animals when compared to women (Paul & Podberscek, 2000).

Unfortunately, there are few studies focusing on animal rights in Turkey. One study showed that most of the participants believed that animal rights are not paid enough attention in Turkey (Özkul et al., 2013). In another study, the researchers found that students and academic staff at veterinary faculties have positive attitudes regarding the ethical status of animals and women are more positive in their attitudes than men. The study also revealed that academic staff are more positive than students just like pet owners who are more positive than those who do not own a pet (Özen et al., 2009). A similar study focused on the importance of individuals' attempts to understand animals' emotions and opinions for a positive animal-human interaction (Çalışkan et al., 2014).

Another issue discussed in relation to animal-human relations is empathy, which has a significant role in behaviors towards humans and animals (Thompson & Gullone, 2008). Empathy has a multi-dimensional structure, which consists of cognitive and affective components, and is defined as an individual's quick and spontaneous connection with someone else's emotional state (De Waal, 2008; Erlanger & Tsytsarev, 2012). Since animals cannot express themselves verbally, humans must develop certain skills to understand them. It is possible for individuals to feel empathy with creatures that are different from them (Decety & Jackson, 2004; Rothgerber & Mican, 2014). Interacting with animals brings physical, psychological and emotional benefits to individuals. For instance, Melson and Fogel (1989), suggests that children develop social and emotional skills when they observe and keep animals or interact with them.A study showed that having a dog during early childhood is significantly related with social development in both girls and boys (Dueñas et al., 2021). In another study it was found that children's empathy levels increased when they fed a pet dog in their classroom for three months (Hergovich et al., 2002) and the children with high levels of commitment for pets had higher levels of empathy and prosocial behaviors (Bratko et al., 1999; Daly & Morton, 2003). Another study found that children who have a companion animal and who scored animals higher on sentience capabilities have more pro-animal attitudes (Menor-Campos et. al., 2019). There are also some studies showing that having a pet during childhood predicts higher levels of empathy (Bratko et al., 1999; Daly & Morton, 2006; Daly & Morton, 2009; Ellingsen et al., 2010; Paul, 2000; Paul & Serpell, 1993; Rothgerber & Mican, 2014; Vizek-Vidović et al., 2001). Another study showed that children tend to have more understanding about the welfare of pets, rather than farm animals. The children showed cognitive empathy towards farm animals, but the affective empathy was more limited. As for the reason for this difference, the study suggested that most of the children had less contact with farm animals than they had with pets (Burich & Williams, 2020). Another study showed that cruelty to animals in primary school children had significant positive correlation with aggression and negative correlation with empathy (Akdemir & Gölge, 2020). As for adult groups, the following findings were reported in various studies: women are more empathic than men and old people are more empathic than young people (Angantyr et al., 2011); people who currently have a pet have more positive attitude towards animals than those who do not have any and there is a positive significant correlation between empathy and attitude towards animals (Taylor & Signal, 2005); people who are involved in activities aiming to protect animals have higher scores both in attitudes towards animals and empathy towards people (Taylor & Signal, 2007); people who support animal rights have higher levels of empathy (Hills, 1993); and there is a positive and meaningful correlation between empathy towards animals and positive attitudes towards animals (Ellingsen et al., 2010).

This study focuses on finding answers to the following questions: (1) Do the attitudes of adults towards animal rights differ according to the following variables: gender, educational background, marital status, having children, pet ownership and membership to non-governmental organizations dealing with animal rights issues. (2) To what extent do attitudes towards animal rights and pet ownership predict empathy?

METHOD

PARTICIPANTS

Within the scope of the study, 510 participants replied to the scale; however, 12 participants did not reply to all the items. Also, one participant was younger than 18 years old and four sets of data were found to have extreme values during the statistical analyses. Thus, they were excluded from the data set. As a result, the study was completed with 493 participants (289 female and 204 male), whose ages range between 18 and 72 (the average being 27.1); 52% of the participants were younger than 25 years old; 74% were single; 78% did not have a child; 31% have at least one pet; 69% had a pet sometime in their lives and 5% preferred vegetarian diet.

INSTRUMENTS

THE ATTITUDE TOWARDS ANIMAL RIGHTS SCALE (AARS)

The Attitude towards Animal Rights Scale (AARS) was developed by Akoğlu (2014) to determine people's attitudes towards animal rights. The AARS was developed with 432 participants including 286 women (66.2%) and 146 men (33. 8%). The average age of the participants is 21.54. This 5-points Likert scale is composed of 32 items. A high score from the scale indicates a high level of attitude towards supporting animal rights. Akoğlu (2014) found reliability coefficient α= .90 and the reliability of test-retest, which was administered again 15 days later, as .69.

In this research, the reliability coefficient for the AARS was found α= .90. The factorial structure of this scale was re-analysed in the research, and item factor loadings were found between .31 and .76. The researchers also used the scale as two-factors formation defined by Akoğlu (2014).

BASIC EMPATHY SCALE

Basic Empathy Scale was developed by Jolliffe and Farrington (2006) and adapted to Turkish by Topçu et al. (2010). The scale aims to measure empathy level in terms of four basic emotions; fear, sadness, anger and happiness. The scale was developed with two different groups of 358 and 359 students, whose ages range between 13-21. This 5-point Likert scale consists of 20 items. High scores to be obtained from the scale indicate high levels of empathy. The original reliability coefficient of the scale was calculated as .85 for affective dimension and .79 for cognitive dimension. The reliability and internal consistency coefficient after the adaption of the scale into Turkish were found to be .76 and .80 respectively (Topcu et al., 2010).

The Cronbach alpha coefficient of the scale was recalculated for this research and found to be .85. The factorial structure of this scale was re-analysed in the research, and item factor loadings were found between .45 and .80. The researchers also used the scale as two-factors defined by Topcu et al. (2010).

DATA COLLECTION

This study was approved by the academic ethics committee of a state university in Turkey. The study group was determined by using a convenient sampling method. The criterion for the participation in the study was "being over 18 years old". The data was collected online via GoogleDoc application. The form was shared by the researcher (as a clickable web link) on various social media networks in order to reach potential participants. The names of the participants were not taken as data in the data set. Participants were enlightened that all the information provided would not be used for anything other than research purposes. The form consisted of informed consent form, personal information form and the items of the scale.

DATA ANALYSIS

Histogram, coefficient of variation, Kolmogrov-Smirnov test and skewness-kurtosis analyses were used as normality tests to determine whether the data had normal distribution or not. Kolmogrov- Smirnov test revealed that the data did not show normal distribution. Later, skewness and kurtosis coefficient values were examined and the results for both empathy and attitudes towards animal rights were found to be between ±1 range, which implies that the scores have normal distribution (Büyüköztürk, 2002; Field, 2009). Independent samples t-test and multiple linear regression analysis were done in the analyses of the data. Preliminary analyses were done prior to the regression analysis and the data were found to be appropriate for multiple linear regression analysis. Accordingly, it was found that tolerance values were lower than .10 and VIF values were higher than 0.10, the data did not violate common linearity hypothesis, Cook's Distance value ranged between .00 and .04 for empathy and between .00 and .96 for attitudes towards animals (Pallant, 2017). IBM Statistics SPSS 23 software was used for the analyses and the level of significance was taken as .01.

RESULTS

Independent samples t-test was done to determine whether the attitudes of adults towards animal rights significantly differ according to the following variables: gender, educational background, marital status, having children, pet ownership and membership to non-governmental organizations dealing with animal rights.

Table 1. *Independent Samples t-test for Attitudes Towards Animal Rights*

Variables	*n*	*M*	*SD*	*df*	*t*	*p*	η^2
Gender							
Female	289	138.04	12.51	355.27	8.21	.000**	.12
Male	204	126.66	16.77				
Education Level							
Compulsory education	120	122.62	17.53	163.16	-8.15	.000**	.11
Undergraduate and graduate	373	136.78	12.99				
Marital Status							
Married	128	128.47	12.51	181.68	-3.70	.000**	.02
Single	365	135.04	16.77				
Having children							
Yes	109	129.44	17.18	156.16	-2.76	.006*	.01
No	384	134.44	14.78				
Having pets							
Yes	155	135.91	14.26	329.79	2.62	.009*	.02
No	338	132.15	15.86				
Having pets in the past							
Yes	339	134.96	14.34	253.30	3.28	.001*	.02
No	154	129.75	17.21				
Organization member							
Yes	62	141.85	11.15	99.14	6.08	.000**	.06
No	431	132.11	15.62				

**$p < .001$ *$p < .01$

According to the results, the mean scores of attitude towards animal rights were significantly higher in favor of the first group of participants for each of the following compared pairs: women vs. men ($t_{(355.27)} = 8.21$, $p < .001$); those having undergraduate or graduate level educational background vs. compulsory educational level background ($t_{(163.16)} = -8.15$, $p < .001$); singles vs. married individuals ($t_{(181.68)} = -3.70$, $p < .001$); those having no child(ren) vs. those having child(ren) ($t_{(156.15)} = -2.76$, $p < .01$); pet owners vs. those having no pet animals ($t_{(329.79)} = 2.62$, $p < .01$); those who had once a pet in the past vs. those who did not have a pet in the past ($t_{(253.29)} = 3.28$, $p < .01$) and those who are members of non-governmental organizations dealing with animal rights issues vs. those who are not members of such organizations ($t_{(99.14)} = 6.07$, $p < .001$).

Standard multiple linear regression analysis was done to determine whether attitudes towards animal rights predict empathy or not. The results of Pearson correlation analysis, which was done prior to the regression analysis, are displayed in Table 2 below.

Table 2. *Correlations Between Attitudes Towards Animal Rights, Empathy, and Variables*

Variables	*1*	*2*	*3*	*4*	*5*	*6*
1. Empathy	1.00					
2. Attitudes towards animal rights	.56**	1.00				
3. Having pets	.01	.11*	1.00			
4. Having pets in the past	.15**	.16**	.29**	1.00		
5.Organization membership	.08	.21**	.26**	.12**	1.00	

*p< .05 **p< .01

According to Table 2, there is a strong and positive ($r= .56$, $p < .01$) correlation between empathy and attitudes towards animal rights; and significant, positive and weak correlation ($r= .15$, $p < .01$) between having pet in the past and empathy.

Standard multiple regression analysis was done to determine whether attitude towards animal rights and having pets in the past predict empathy. The variables with significant correlations were included in the analysis. The results are displayed in Table 3.

Table 3. *Multiple Linear Regression Analysis Results*

Variables	*B*	*SD*	*β*	*t*	*p*	*Binary*	*Partial*
Constant	26.72	3.28	-	8.14	.00	-	-
Attitudes towards animal rights	.36	.03	.55	14.38	.00**	.56	.54
Having pets in the past	1.42	.83	.07	1.73	.08	.15	.08
R = .56	$R^2 = .31$						
$F_{(2,490)} = 70.24$	P = .00						

p < .05* p < .01**

Attitudes towards animal rights have significant correlation with empathy and having pets in the past. All these variables together account 31% of the total variance. According to standardized regression coefficient (β), the predictive variables in the order of their predictive power on empathy are attitudes towards animal rights and having pets in the past. When the results regarding the significances of regression coefficients are examined, it can be concluded that attitudes towards animal rights are significantly predictive of empathy. However, having a pet in the past does not have any significant effect on empathy.

DISCUSSION, CONCLUSION AND IMPLICATIONS

DISCUSSION

This study revealed that women have more positive attitudes towards animals than men, which is supported by the findings of different studies (Broida et al., 1993; Driscoll, 1995; Ellingsen et al., 2010; Furnham & Heyes, 1993; Furnham et al., 2003; Hazel et al., 2011; Herzog et al., 1991; Hills, 1993; Kafer et al., 1992; Mathews & Herzog, 1997; Özen et al., 2009; Paul, 2000; Paul & Podberscek, 2000; Phillips & McCulloch, 2005; Signal & Taylor, 2006; Signal & Taylor, 2007; Taylor & Signal, 2005; Pious, 1996). Lifelong learning is considered to be one of the easiest and most important aspects of the learning process. And what people learn naturally or informally, is very important and impactful on their life (Frąckowiak, 2017). It is acknowledged that women's instincts of embracing, and caring are often reinforced by the society even starting from young ages (Melson & Fogel, 1989). In this respect, the fact that "motherly" attitudes such as caring about animals, feeding and protecting them can be considered as the natural consequence of social gender roles.

Through education, individuals can gain knowledge and skills as well as positive attitudes and behaviors (Özkan, 2021). In this respect, another finding of this study is that people with undergraduate and graduate level educational backgrounds have more positive attitudes towards animal rights. This finding is different from some other studies in the literature. Some research revealed no differences according to educational background (Furnham et al., 2003; Signal & Taylor, 2006) and even some studies found that positive attitude towards animal rights decreases as educational level increases (Ellingsen et al., 2010; Kafer et al.,1992). Positive attitudes towards animal rights and animal rights advocacy are largely influenced by the dynamics of the society (Pifer et al., 1994). In Turkey, university campuses house many animals and there are many student clubs and groups aiming to advocate animal rights. And when there is a positive emotional connection to the learning process, it is easier to transfer that subject into the real world (ElAdl & Polpol, 2020). Active participation is an important part of the learning process and educational institutions are not just places where values are lived, but also places where they can be created. (Gündoğdu et al., 2019; Kuuk & Arslan, 2020). Thus, it is easier for students who receive undergraduate and graduate level education to interact with animals or meet people who advocate animal rights and develop more positive attitudes.

The study also showed that single individuals have more positive attitudes towards animal rights than married ones. Similarly, people who do not have children develop more positive attitudes towards animal rights than those who have children. This finding is consistent with the finding of the studies conducted by Kafer et al. (1992), Paul (2000) and Signal and Taylor (2006). The reason behind this finding might be that married people and those having child(ren) spend less time for social activities because of their responsibilities for spouse, parents, work and housework. It is possible that they cannot be interested in animal rights and interact with animals because of their responsibilities.

According to the study, the "attitudes towards animal rights" scores of people who had a pet in the past and those who currently have one are significantly higher than others. Some studies in the literature report that there is a significant relationship between positive attitudes towards animal rights and having a pet in the past (Daly & Morton, 2009; Ellingsen et al., 2010; Paul, 2000; Paul & Serpell, 1993) and currently having a pet (Daly & Morton, 2009; Hazel et al., 2011; Kafer et al., 1992; Özen et al., 2009; Paul, 2000; Taylor & Signal, 2005).

Still another finding of the study is that those who are members of non-governmental organizations dealing with animal right issues have higher scores for attitude towards animal rights, which is supported by the findings of some studies in the literature (Broida et al., 1993; Özkul et al., 2013; Signal & Taylor, 2007). People who have positive attitudes towards animal rights are more eager to advocate these rights. Such non-governmental organizations are established to achieve this goal and they want to act collaboratively as a community so that they can be more effective. Therefore, it is quite reasonable that people with positive attitudes towards animal rights are willing to join these organizations and actively participate in their activities. Another dimension of this situation might be that people come together in these organizations and teach others and improve themselves about the issues related to animal rights.

CONCLUSION

According to the findings, the predictive variables in the order of their predictive power on empathy are as follows: attitudes towards animal rights and owning a pet in the past. Attitudes towards animal rights explain 31% of variance at empathy level. There are some studies which support this finding in the literature (Ascione, 1992; Broida et al., 1993; Daly & Morton, 2006; Erlanger & Tsytsarev, 2012; Ellingsen et al., 2010; Furnham et al., 2003; Hazel et al., 2011; Hergovich et al., 2002; Hills, 1993; Paul, 2000; Poresky & Hendrix, 1990; Signal & Taylor, 2007; Taylor & Signal, 2005; Thompson & Gullone, 2008). However, Daly and Morton (2003) reported that there is not a significant relationship between attitudes towards animals and empathy; and Henry (2006) found a negative correlation between these two variables. Individuals' positive emotions, ideas and behaviors about animals might improve their attitudes towards people as well. Thus, humans should develop their empathy skills so that they can understand the needs of all creatures in nature, help to meet these needs and support their right to live in this world without being exposed to any harm. In this respect, it might be concluded that developing positive attitudes towards animals will increase individuals' empathy levels as well.

IMPLICATIONS

The study showed that respect to animal rights is an important variable that accounts for empathy. It might be suggested that certain activities addressing men should be designed under the light of the findings of this study in order to popularize both empathy and respect for animal rights. Another suggestion might be to design activities to encourage people to adopt animals on the condition that they should assume responsibilities for the care of these animals. Projects, activities and lessons that provide interaction with various animals and teach children about animal rights can also be suggested. Such projects and lessons can be planned and applied for children in compulsory education and for young people in university campuses.

AUTHOR CONTRIBUTION

-The first author made significant contributions to the design of the study, analysis and interpretation of the data.
-The second author was involved in drafting the article, interpreting the results, and critically revising it for important intellectual content.

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The Effect of Task-Based out-of-Class Activities on Language Learning Processes to Create a Natural Language Environment in Teaching Turkish to Foreigners[*]

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Abstract

In the interaction environment, individuals are considered as social actors who perform various tasks in society and use language in various fields while doing these. Activities performed using language for a purpose are called tasks. Organizing out-of-class activities with such tasks in an activity environment aimed at getting to know the target language and culture for learners, is effective in increasing motivation and creating a realistic language environment. In this study, it is aimed to introduce the task-based activities performed outside the classroom with Mongolian students learning Turkish in order to create the closest environment to nature by carrying language teaching out of the classroom in Mongolia, where Turkish is taught as a foreign language, and to reveal the effects of these on the language learning processes of the students. In the study, which was designed with a holistic single case study pattern, the activities that students learning Turkish in Mongolia do outside the classroom under the guidance of researchers during their active education periods is presented in detail in three categories as 'programs, academic activities and social activities'. The opinions of fifteen Mongolian students, who were determined by stratified sampling method, about these activities and their effects on the process were examined. It was seen that these increase the students' ability to use Turkish, teach them how to use the language in which situation, and increase their motivation to learn language positively.

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[*] This study is the updated and improved version of the oral paper titled "Out of Class Activities to Create a Natural Language Environment in Teaching Turkish to Foreigners: The Example of Mongolia" which presented by us at the scientific meeting named "II. International Symposium of Teaching Turkish as a Foreign Language" that was held in Munich, Germany

INTRODUCTION

While language functions as the most basic communication tool through the development of listening, reading, speaking and writing skills so that people can 'understand' and 'tell', it also functions as a social interaction tool in education and training processes. Language learning approaches also developed different perspectives on language in this respect. According to some, language has an impact on human life only because it is a means of communication, while according to others, it is a set of basic skills that exist for the socialization of people. For example, “in the activity approach, individuals are considered as 'social actors' members of society who fulfill various roles and duties in society” (Güneş, 2017). As social actors, language users perform various tasks in society. The concept of 'task' is defined in the Common European Framework of Reference for Languages as "any purposeful action deemed necessary by an individual in order to achieve a particular result". This may be a problem to be solved, a necessity encountered, or a self-determined goal. This definition applies to many actions, such as relocating a wardrobe, writing a book, getting certain conditions accepted during a contract negotiation, playing cards, ordering a meal in a restaurant, translating a foreign language text, or publishing a classroom newspaper through teamwork (CEFRL, 2013, 19). These are also called 'functional activities'. Thus, concepts such as 'activity, task, activity approach, learning by activities' came to the fore in the field of education. “With the activities, work is done on language for language. In the task, on the other hand, work is carried out with activities taken from real life. Both require communication, both use language, but the actual processes of language are applied while performing tasks. The use of language in the task not only results in communication, but is also practiced in the natural setting within the community. Tasks and activities also provide interaction between students” (From Mangenot, 2000; Güneş, 2017). In order to achieve all these, language learners need to perform various tasks both inside and outside the classroom during the education and training processes. Therefore, it is necessary to make use of the task-based teaching method.

Task-based teaching, which is one of the foreign language teaching methods, is a method that enables students to learn the language by doing the tasks given to them in interaction. Prabhu was the first to put the task-based teaching method into practice (Wang, 2006, 10). According to Willis (1996), the importance of task-based teaching is to transfer the activities that involve real communication to the classroom environment. These activities should include meaningful tasks. 'Task' is the keyword for this method. In task-based teaching, where the process is created by defining various language tasks to the students, the implementation of these tasks is sometimes carried out in the form of planned in-class activities. Accordingly, various task classifications were made (Pica, Kanagy & Falodun 1993; Nunan, 1989, 2004; Willis, 1996, cited in Yorulmaz, 2009, 34). Willis put forth the most detailed study at this point and analyzed the tasks in three main sections. These are “pre-task”, “task cycle” and “language focus” The needs of the individual learning the target language will determine the task framework. According to the level and individual differences of individuals learning a foreign language, their terms of office and their types should be determined. Some tasks may go unfulfilled if complex tasks are understood. Concretizing the tasks and supporting them with different disciplines will positively affect the target language learners (Willis, 1996, 56-57, cited in Yorulmaz, 2009, 34). However, this is seen not only in the classroom, but also as a part of both in-class and out-of-class learning processes. Yoğurtçu and Yoğurtçu (2013) conducted research to determine the factors that most affect performance in foreign language learning and they concluded that the factors for effective teaching in the physical environment, equipment and learning attitudes where language teaching is carried out come to the fore as the primary factor in learning motivation. However, it is frequently emphasized by scientists that focusing on out-of-class learning along with the necessary equipment for this teaching will increase efficiency. As a matter of fact, “out-of-school education is a process-based approach that focuses on the active interaction between the student and the environment.

In this process, students actively construct the information they have obtained from their environment, instead of getting the information directly from the teacher. The activities performed provide more concrete foundations for understanding abstract concepts; In addition, out of class activities color the learning process and facilitate the learning process." (Tatar & Bağrıyanık, 2012, 884). Out-of-class environments will also provide new opportunities for diversification and implementation of tasks. The tasks coincide with real life. Students may encounter such learning situations in their daily lives. In other words, situations such as buying clothes from the store, going to the movies, visiting touristic places are not only real life, but also language situations. Regardless of the level of the students, the tasks should be prepared in a way that includes real-life language. Drawing attention to the structure of the language with the technique of raising awareness in the last part of the task does not mean that grammar rules are directly explained or taught. Here, the importance of interaction developed within the group is emphasized (Yorulmaz, 2009). Out-of-class learning activities are a model that paves the way for learning with fun and understanding by involving students in the process by ensuring active participation of students and making certain practices. As required by the constructivist approach have preferred today, the activities performed by the students by living, traveling, seeing and making associations facilitate the student's learning more than the activities carried out in the classroom (Armağan, 2015). There is a multi-faceted process in the understanding of learning that centers the learner and it is imperative to establish a relationship with real life. In this regard, travel, theatre, cinema, friends and family gatherings etc. Informal learning environments, in other words out-of-school activities, can be a bridge in establishing a relationship with real life. Activities in out-of-school environments can be beneficial, especially in terms of realizing learning through real experiences. It is stated that out-of-school learning environments increase the desire to learn and improve motivation and attitude towards learning (Ramey-Gassert, 1997). Learning outside of school offers individuals practical learning opportunities in real life in different situations and environments. Students can learn in accordance with their own characteristics in such learning environments. They can learn and use knowledge, skills and behaviours in the amount and time they want. Out-of-school learning environments such as museums have enriching, supportive, complementary and concretizing features (Siedel & Hudson, 1999). This concretization also provides an opportunity for learners to create their own experiences. Therefore, learning by doing has an effect on the experience of knowledge and skill levels with various applications and the creation of them step by step. "In the cone of experience prepared by Edgar Dale, it was revealed that the individual should start teaching with concrete, simple and easy experiences that appeal to many sense organs" (Köksal & Varışoğlu, 2014).

Learning is affected by the culture, context, and practices in which it emerges (Lave & Wenger, 1991). "As Gardner and Lambert (1972) indicated that motivation to learn a second language creates positive attitude toward the target language and its culture and attitudes then become the milestone of motivation itself." (From Gardner & Wallace, 1972; Kuuk & Arslan, 2020). However, the information presented in traditional classrooms is presented to students by abstracting from the context in which it makes sense. This causes students to be unsuccessful in solving real-life problems. Accordingly, one of the most important points for learning is interaction and the student must be involved in the application. With the activity approach that supports task-based teaching, students are not motivated to learn grammar or culture, on the contrary, they are directed to do interesting tasks and activities. The teacher first prepares the students for the activity, and then puts the activity into practice. Thus, students learn language and culture by doing various activities. In this approach, students are also given various projects. Some of the tasks are making a poster of a favorite hero, preparing a radio broadcast about animals, completing the end of a story, organizing events to celebrate the founding of the school, panel, forum, discussion, etc. (From Puren, 2004; Güneş, 2017). In this direction, going out of the classroom for educational purposes, organizing a planned out-of-class education process, taking an active role in the process, and professional evaluation of the process are the necessities of an effective out-of-class education process. In the study of Lynch and Maclean (2000), both in-class and out-of-class learning environments were combined on the task axis. Fourteen medical personnel learning English for special purposes were divided into pairs, given a research paper and asked to make a poster about it. Afterwards, questions from other couples about the poster hung in the hall were answered, and then there was a collective discussion. As a result of the research, it was stated that task repetitions could be beneficial and contribute to the students' intermediate language research process.

Göçer (2017) suggests choosing the task together with the students during the task-based education activity in teaching Turkish as a foreign language. He emphasizes the importance of creating new tasks, adjusting the learning-teaching environment, practicing spoken texts and conversational exercises. The importance of the effect of the teacher factor in the process was also discussed. While it is accepted that when students are given tasks in areas they are not interested in, motivation is lacking and motivation decreases (Yaylı, 2004), that’s why teacher guidance is important from the determination of the task to the last stage and at the same time, it was determined that students experience permanent learning with a task-based approach (Yaylı, 2005). In addition, it was determined that it has an advantage on speaking skills in the study carried out considering that it may have a positive effect for each skill in language learning processes (Şahin, 2019). Especially for learners who are not in the environment (country) where the learned language is spoken, assigning such tasks in an activity environment aimed at recognizing the target language and culture, organizing out-of-class activities to provide the natural environment of the language are very effective in both increasing motivation and creating a language environment that is close to reality.

PURPOSE OF THE RESEARCH

In this study, it is aimed to introduce the task-based activities carried out outside the classroom with Mongolian students learning Turkish in order to create the closest environment to nature by carrying language teaching out of the classroom in institutions where Turkish is taught as a foreign language in Mongolia and to reveal the effects of these on the language learning processes of the students. For this purpose, answers to the following questions were sought:

1. What are the views of Mongolian students learning Turkish about the effect of celebration and commemoration activities outside the classroom on their language learning processes?
2. What are the opinions of Mongolian students learning Turkish about the effect of academic activities outside the classroom on their language learning processes?
3. What are the opinions of Mongolian students learning Turkish about the effect of social activities outside the classroom on their language learning processes?
4. What are the positive / negative effects of task-based activities outside the classroom on the language learning process of Mongolian students learning Turkish?

METHOD

RESEARCH DESIGN

In the study, a case study, one of the qualitative research designs (Miles & Huberman, 2015), which provides a holistic view of the characteristics of the environment in which it is made, was used. The most basic feature of case studies is the in-depth investigation of one or more cases. In other words, the factors related to a situation (environment, individuals, events, processes, etc.) are investigated with a holistic approach and focused on how they affect the relevant situation (Yıldırım & Şimşek, 2016). Since there is only one analysis unit in the research, the study was designed with a holistic single case study pattern. In this study, a case study, which is one of the qualitative research methods, was used due to the in-depth analysis of the views of the Mongolian students learning

Turkish on the effects of the activities they perform outside the classroom on the language learning processes and their effects on the language learning processes.

STUDY GROUP

The study group of the research consists of 15 Mongolian students studying Turcology in the Department of Asian Studies at National University of Mongolia (NUM). 12 female and 3 male students learning Turkish at B2 and C1 levels were selected by stratified sampling among 28 students studying in the department from the first to the fourth grade and at basic, intermediate and advanced language levels. In the stratified sampling technique, before selecting the sample, the axis is divided into some substrata, and then the samples are selected from these strata (Sencer & Sencer, 1978). The students who made up the study group were at the second, third and fourth grade levels and took an active role in the out of class activities that were the focus of the study. Students are coded as S1, S2,... The student information participating in the research is as follows:

Table 1. *Personal Characteristics of Teachers*

Student	*Gender*	*Age*	Mother Tongue	Grade / Language Level
S1	Female	19	Mongolian	2 / B2
S2	Female	19	Mongolian	2 / B2
S3	Female	19	Mongolian	2 / B2
S4	Female	20	Mongolian	2 / B2
S5	Female	19	Mongolian	2 / B2
S6	Female	19	Mongolian	2 / B2
S7	Female	18	Kazakh	2 / C1
S8	Female	20	Mongolian	2 / B2
S9	Female	20	Kazakh	3 / C1
S10	Female	21	Mongolian	3 / C1
S11	Male	22	Mongolian	3 / B2
S12	Female	21	Mongolian	4 / B2
S13	Female	21	Mongolian	4 / B2
S14	Male	22	Mongolian	4 / C1
S15	Male	22	Mongolian	4 / C1

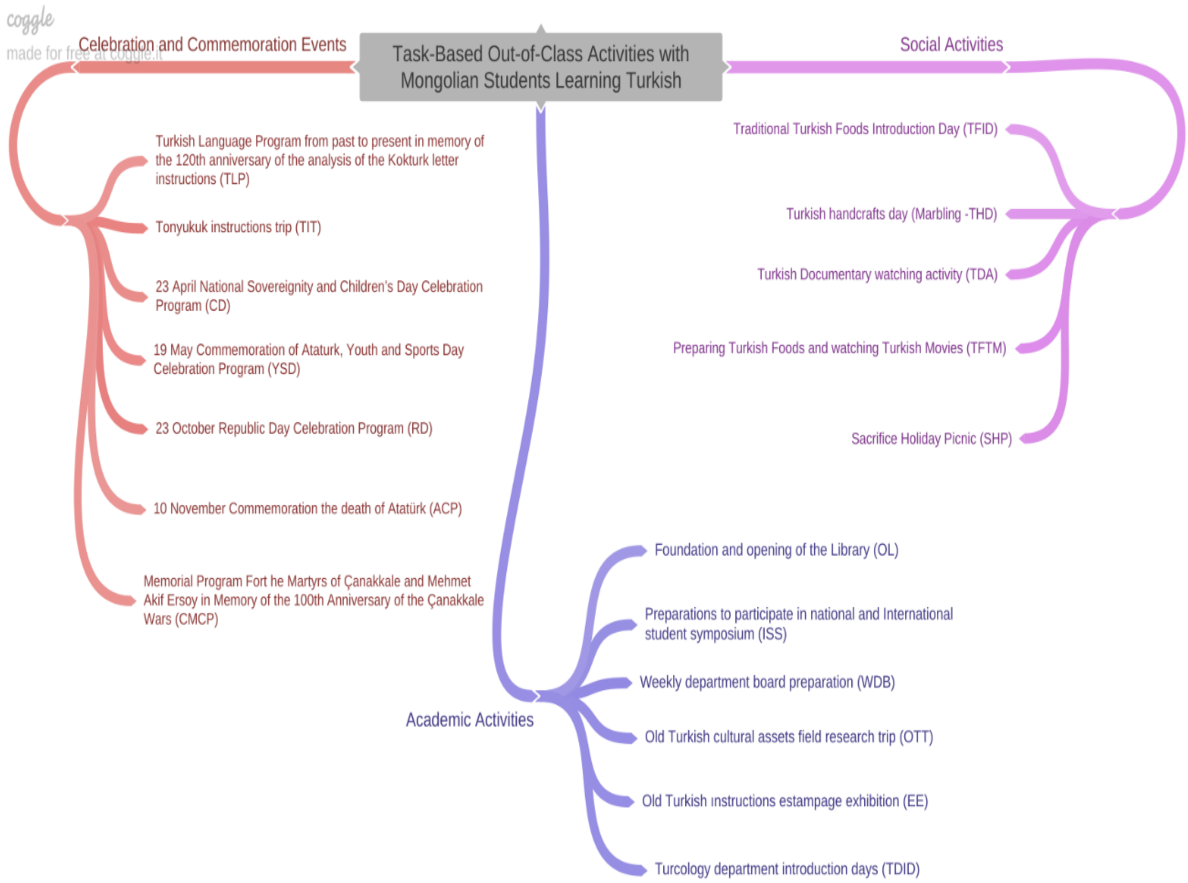
DATA COLLECTION

In the study, a semi-structured measurement tool was developed in order to determine the views of Mongolian students about celebration and commemoration activities outside the classroom, as well as academic and social activities, and their effects on language learning processes. The measurement tool prepared in the research was given its final shape by taking expert opinions. In the first part, students were asked to fill in the relevant information and it was reported that their identity information would not be used in the study.

In the second part, the activities that they can do outside of the lesson, which are thought to affect the Turkish learning processes, are presented as items, and they are also asked to write down different activities that are not on the list but that they do.

Thirdly, the celebration and commemoration activities, academic and social activities that Mongolian students do outside the classroom under the guidance of their teachers were listed and the students were asked to rank them numerically from the most effective to the least. In addition, two open-ended questions were asked to measure the effects of activities on language learning processes and they were asked to write their opinions. The measurement tool, which was given its final shape, was applied by the researchers by planning separate interview times with the students at each grade level. During the 30-minute form filling process, Turkish communication was established. Celebration and commemoration activities, academic and social activities that Mongolian students do outside the classroom under the guidance of their teachers are as follows. The activities are presented in the Figure 1.

Figure 1. *Task-Based Out-of-Class Activities with Mongolian Students Learning Turkish*



A. CELEBRATION AND COMMEMORATION ACTIVITIES

A.1. TURKISH LANGUAGE PROGRAM FROM PAST TO PRESENT IN MEMORY OF THE 120TH ANNIVERSARY OF THE ANALYSIS OF THE KÖK TURK LETTER INSTRUCTIONS (TLP):

The anniversary event was held on December 15, 1893, when the linguist Vilhelm Thomsen explained the analysis of the Orkhon Inscriptions to the scientific world at the Royal Danish Academy of Sciences. During the two-week period, the content of the program, which included activities such as the Old Turkish Artifacts exhibition, the Turkish language commemoration program (poetry reading, documentary screening, exhibition of folk dances), was prepared and implemented.

A.2. TONYUKUK INSTRUCTIONS TRIP (TIT):

In Mongolia, they visited the Tonyukuk Inscriptions, which are 60 km away from the center of the Turkish cultural assets complex, which is the closest to the capital Ulanbator, and they learned the information within the scope of Turkish Language History, Kök Turks and Turkish Culture courses on site. In this trip, the students also made short presentations and gained on-site information through the question-answer method.

A.3. 23 APRIL NATIONAL SOVEREIGNITY AND CHILDREN'S DAY CELEBRATION PROGRAM (CD):

Elective Turkish lessons are also given at Atatürk School in Mongolia. NUM Turcology students also supported the Children's Day celebrated by the Mongolia-Turkey partnership, the program content was prepared under the guidance of the researcher, and the program was prepared with a three-week out of class study plan. Students of the Department of Turcology and Atatürk School came together and sang songs and poems with the theme of April 23.

A.4. 19 MAY COMMEMORATION OF ATATURK, YOUTH AND SPORTS DAY CELEBRATION PROGRAM (YSD):

Students of the Department of Turcology came together at certain times outside the classroom and took an active role in the selection of poems, memorization, preparation and translation of Turkish-Mongolian speeches for the Youth and Sports Day. Program preparations were carried out in three weeks and on 19 May, A celebration program was held under the auspices of the TR Ulanbator Embassy.

A.5. 29 OCTOBER REPUBLIC DAY CELEBRATION RECEPTION (RD):

NUM Turcology Department students voluntarily learned the Turkish Republic National Anthem by working under the guidance of a researcher during extracurricular times. They sang at the protocol welcoming ceremonies at the reception of the TR Ulanbator Embassy. They applied what they learned at the celebration ceremony held on October 29.

A.6. 10 NOVEMBER COMMEMORATION THE DEATH OF ATATÜRK (ACD):

In the program prepared for Turcology Department students to get to know Turkish literary works in more detail in extracurricular times, Atatürk-themed poems and speeches were selected in a two-week period, while preparing for the program, Turkish conversations about Atatürk's life were made.

A.7. MEMORIAL PROGRAM FOR THE MARTYRS OF ÇANAKKALE AND MEHMET AKIF ERSOY IN MEMORY OF THE 100TH ANNIVERSARY OF THE ÇANAKKALE WARS (CMCP):

With the support of the TR Ulanbator Embassy, a commemoration program was prepared for the 100th anniversary of the Çanakkale Wars and also the anniversary of Mehmet Akif Ersoy; NUM and Mongolian National Defence University (MNDU) university came together. During the two-week preparation period, soldiers and Turcology students studying in Turkish classes performed many activities together on the stage, from marching songs to singing folk songs, from poetry reading to prepared speeches.

B. ACADEMIC ACTIVITIES

B.1. FOUNDATION AND OPENING OF THE LIBRARY (OL):

The process of sorting, numbering and organizing the library of 2000 books sent to Mongolia by YEE within the scope of the "100 Turkey Library Establishment Project" took about three months, and during this process, students came together on certain days of the week under the guidance of the researcher during extracurricular times and took an active role.

B.2. PREPARATIONS TO PARTICIPATE IN NATIONAL AND INTERNATIONAL STUDENT SYMPOSIUM (ISS):

Meetings were held with the volunteer students about processes such as the selection of the subject of the paper, resource scanning, and academic writing, and the preparation of the students to the symposium held in Turkey and their participation with the financial support provided by the department were ensured in a total of 2 weeks.

B.3. WEEKLY DEPARTMENT BOARD PREPARATION (WDB):

One of the activities outside the classroom is the weekly department board preparation activity, which is given as a group assignment and in which alternate groups are assigned. Students were assigned to include various information from Turkish culture to history, from news from Turkey to the promotion of department activities, on the section board, the content of which is regularly renewed at the end of each week.

B.4. OLD TURKISH CULTURAL ASSETS FIELD RESEARCH TRIP (OTT):

A cultural heritage expedition was organized under the guidance of a researcher in order to get to know the rich Turkish cultural assets in Mongolia. The students and faculty members, who camped in Mongolia for two weeks, examined the Turkish cultural artifacts in Central Mongolia.

B.5. OLD TURKISH INSTRUCTIONS ESTAMPAGE EXHIBITION (EE):

The process of obtaining copies of Turkish inscriptions, called estampage, was done by the students themselves during the field research trip carried out under the guidance of the faculty members. The resulting copies were prepared by the students to be exhibited later. The preparation process took a week and then the exhibition, which lasted for three days, was held at the Mongolia National History Museum.

B.6. TURCOLOGY DEPARTMENT INTRODUCTION DAYS (TDID):

Turcology Department students prepare an introductory corner on the department introduction days held in May every spring semester. The students, who conducted research on Turkey and Turkish culture in a three-day period under the guidance of their researcher teachers and then turned it into a intorduction board, took an active role in the introduction day.

C. SOCIAL ACTIVITIES

C.1. TRADITIONAL TURKISH FOODS INTRODUCTION DAY (TFID):

A one-day traditional Turkish food introduction day was organized in the NUM Faculty of Foreign Languages and Cultures. The researcher asked the students to research the recipe of Turkish foods and make them with their own means without too much expense, and the faculty members supported the cooking phase.

C.2. TURKISH HANDICRAFTS DAY (MARBLING-THD):

After the Turkish food introduction day, the handicrafts introduction day was organized, and in the process, the students did research on Turkish handicrafts and prepared introductory material about them. In addition, on the presentation day, with the participation of a marbling artist, they made examples of marbling art on site.

C.3. TURKISH DOCUMENTARY WATCHING ACTIVITY (TDA):

A two-hour program was organized in the university conference hall to watch Turkey Promotional videos and documentaries shot by the Ministry of Culture in Turkey. In the program, the documentaries were watched in Turkish, and then Mongolian translations were made by the students of the Turcology Department to the other participating guests.

C.4. PREPARING TURKISH FOODS AND WATCHING TURKISH MOVIES (TFTM):

Students and Turkish citizens, who came together to watch movies in Turkish at the embassy residence with the support of the TR Ulanbator Embassy, first watched the preparation of Turkish foods with the recipe of the embassy cook, and then watched the movie. Later, they had the opportunity to chat in Turkish about the movie they watched.

C.5. SACRIFICE HOLİDAY PICNIC (SHP):

A picnic was organized by the faculty members for the sacrifice they donated for the students of the TR Ulanbator Religious Representation Department; While celebrating the festival in a cultural context, an environment for communicating in Turkish was provided for students.

DATA ANALYSIS

This research was designed as a qualitative study and qualitative data analysis techniques were used in the analysis of the data. Content analysis was used to analyze the data obtained from the opinions of Mongolian students learning Turkish. Content analysis is a qualitative data reduction and interpretation effort aimed at determining basic coherence and meaning by taking voluminous qualitative data (Patton, 2014). After the transliteration of the data obtained with the semi-structured measurement tool, the researcher made coding on the raw data. During the coding, support was received from two local faculty members who supported the design and implementation of the activities. Categories were created from the determined codes. After the code and category were created, an expert in the field of Turkish education also coded. The data were finalized by comparing the coding process made by the researchers and the expert. The sentences were transcribed as they were, without making any changes or corrections on the expressions of the participants. The findings are presented in tables and sample sections are given from the opinions of the participants to support the codes.

FINDINGS

First of all, in order to determine the variables that affect students' learning Turkish outside of the classroom and to determine their use of Turkish as a language of communication, the question "In which areas / for what purpose do you use Turkish outside of school?" question was asked. The answers given by the students are presented in Table 2:

Table 2. *Using Turkish Out of School by Mongolian Students Learning Turkish*

Student opinions	S	*f*	%
In official institutions of Turkey (Turkish Embassy, TIKA)	S1, S3, S4, S5, S6, S7, S8, S9, S10, S11, S12, S13, S14, S15	14	93.3
With those who speak Turkish/ while speaking Turkish	S1, S3, S4, S5, S7, S8, S9, S10, S13, S14, S15	11	73.3
With those who speak Turkish on the Internet/ While texting with my Turkish friends	S3, S4, S7, S8, S9, S10, S12, S14, S15	9	60
Turkish businesses	S3, S5, S7, S9, S10, S15	6	40
I never use	S2	1	6.6

According to the table, the most effective variable in the language learning process of students is the limited number of native speakers of Turkish in Mongolia and the limited use of Turkish in its natural environment. Because for Mongolian students learning Turkish as a foreign language, it is most possible to transfer Turkish to the communication environment in the official institutions of Turkey (Turkish Embassy, TIKA) (n=14). The second striking variable is that students prefer distance communication channels to create a Turkish language of communication (n=9). According to the table in general, it is seen that the environment for students to learn Turkish and use Turkish outside of the classroom is limited.

The opinions of the students learning Turkish as a foreign language on the activities to improve their Turkish language skills individually outside of school are given in Table 3.

Table 3. *Activities of Mongolian Students Learning Turkish to Develop Individual Turkish Language Skills Out of School*

Student opinions	S	*f*	%
Listen to Turkish music	S1, S3, S4, S7, S8, S9, S10, S11, S12, S13, S14, S15	12	80
Doing Turkish research on the Internet	S1, S3, S4, S5, S6, S7, S9, S10, S12, S14, S15	11	73.3
Watching Turkish movies/series	S3, S4, S5, S7, S8, S9, S10, S12, S14, S15	10	66.6
Reading a book in Turkish	S5, S7, S8, S9, S10, S14	6	40
Watching Turkish TV channels	S3, S7, S9, S10, S14	5	33.3
Keeping a diary in Turkish	S7, S14	2	13.3

According to the table, listening to music (n=12) comes first among the activities that students do individually to improve their Turkish language skills outside the classroom. This is followed by doing research in Turkish on the internet (n=11) and watching Turkish movies/series (n=10). From at the table, it can be seen that students generally prefer internet-based methods that provide distance communication in order to encounter examples of using Turkish as mother tongue and to use Turkish as a tool language. This is followed by online-based remote access TV channels. While the communication environment provided with written materials such as reading Turkish books is less preferred (n=6), only 2 students stated that they kept a diary in Turkish.

In the process of teaching Turkish as a foreign language in Mongolia, in order to determine the effect of task-based out-of-class activities aimed at creating a natural language on the language learning processes of Mongolian students learning Turkish as a foreign language, they were asked to rank the activities divided into categories separately. Then, they were asked to briefly explain the reasons for their preferences. Table 4 shows the order of the celebration and commemoration activities outside the classroom from the most positive to the least positive for the Mongolian students learning Turkish.

According to Table 4, among the task-based celebration and commemoration activities performed outside the classroom, the activity that students think has the most positive effect on language learning processes is CMCP (n=7). This is followed by TLP (n=4) in the second place and RD (n=3) in the third place. According to the activities, it is remarkable that the first three programs are the programs in which the students take part in all processes from start to finish, as well as the activities supported by the official institutions of Turkey and carried out with the participation of native Turkish speakers. The opinion of S4, who thinks that CMCP is the most effective activity, is as follows:

> *The Çanakkale program was the most beneficial one because we students recited poems, sang the National Anthem, and watched a movie.*

The opinion of S7, who thinks that TLP is the most effective activity, is as follows:

> *The 120th Anniversary of the Analysis of Kök Turk Letter Inscriptions. I learned the National Anthem for the first time. I knew things that I didn't know. I enjoyed it all. It's been a great program. It is very important to me.*

The opinion of S5 about the activity of RD as follows:

> *The 29 October Republic Day celebration reception was very nice. We sang and had dinner there.*

Table 4. *Statistical Information on the Ranking of Out of Class Celebration and Commemoration Activities of Mongolian Students Learning Turkish*

Act	1			2			3			4			5			6			7		
	S	*f*	%	S	*f*	%	S	*f*	%	S	*f*	%	S	*f*	%	S	*f*	%	S	*f*	%
CMCP	S1, S3, S4, S9, S10, S11, S12	7	46.6	S13, S15	2	13.3	S2, S5, S6, S7, S8, S14	6	40	-	-	-	-	-	-	-	-	-	-	-	-
TLP	S6, S7, S8, S14	4	26.6	S1, S2, S4, S11	4	26.6	5	5	33.3	S5, S12	2	13.3	-	-	-	-	-	-	-	-	-
RD	S2, S5, S15	3	20	S12	1	6.6	1	1	6.6	S1, S3, S6, S7, S8, S14	6	40	S4, S9, S10	3	20	-	-	-	S13	1	6.6
TIT	S13	1	6.6	S3, S5, S6, S7, S8, S9, S10, S14	8	53.3	3	3	20	S2	1	6.6	-	-	-	S15	1	6.6	S11	1	6.6
YSD	-	-	-		-	-	-	-	-	S9, S10, S15	3	20	S2, S5, S7, S11, S13	5	33.3	S3, S4, S8, S12, S14	5	33.3	S1, S6	2	13.3
ACP	-	-	-		-	-	-	-	-	S4, S11, S13	3	20	S3, 8, S12, S14, S15	5	33.3	S1, S5, S6, S7, S9, S10	6	40	S2	1	6.6
CD	-	-	-		-	-	-	-	-	-	-	-	S1, S6	2	13.3	S2, S11, S13	3	20	S3, S4, S5, S7, S8, S9, S10, S12, S14, S15	1 0	66.6

ACP and CD activities, on the other hand, lag behind in terms of their impact on language learning processes. The program is similar to what has been done before and the fact that it is carried out especially with younger age groups may have an effect. However, no student mentioned a negative effect for all of the activities.

The order of the academic activities outside the classroom from the most positive to the least positive according to Mongolian students learning Turkish is shown in the table below:

Table 5. *Statistical Information on the Ranking of Academic Activities Performed by Mongolian Students Learning Turkish Out of Class*

Act.	1			2			3			4			5			6		
	S	*f*	%	S	*f*	%	S	*f*	%	S	*f*	%	S	*f*	%	S	*f*	%
SAG	S2, S3, S6, S8, 12, S13, S14	7	46.6	S1, S4, S5, S7, S9, S10	6	40	-	-	-	-	-	-	-	-	-	S11, S15	2	13.3
ISS	S5, S7, S9	3	20	S14, S15	2	13.3	-	-	-	-	-	-	S10, S11	2	13.3	S1, S2, S3, S4, S6, S8, S12, S13	8	53.3
OL	S4, S10	2	13.3	S6	1	6.6	S1, S7, S8, S9, S12, S14, S15	7	46.6	S5, S11, S13	3	20	S2, S3	2	13.3	-	-	-
TDID	S11, S15	2	13.3	-	-	-	S2, S13	2	13.3	S3, S4, S7, S10, S12	5	33.3	S1, S5, S6, S8, S9, S14	6	40	-	-	-
EE	S1	1	6.6	S3, S12, S13	3	20	S4, S10, S11	3	20	S2, S6, S8, S9, S14	5	33.3	S7, S15	2	13.3	S5	1	6.6
WDB	-	-	-	S2, S8, S11	3	20	S3, S5, S6	3	20	S1, S15	2	13.3	S4, S12, S13	3	20	S7, S9, S10, S14	4	26.6

According to Table 5, among the task-based academic activities performed outside the classroom, the activity that students think has the most positive effect on language learning processes is OTT (n=7). It is considered as an important activity for Turcology Department students to examine the history and culture of the department they are studying in their own country. The opinion of S10, which thinks that OTT is the most effective activity, is as follows:

> *Research trip. We went to Del Uul District with our fourth graders and teachers. I saw historical things there, we took estampage. We traveled and worked. It is a very important program for us.*

This is followed by ISS (n=3) in the second place and OL (n=12) and TDID (n=2) in the third place. Although volunteerism was the basis for the ISS activity, it was observed that the students mostly tended to participate and tended to join academic activities during extracurricular times. In addition, the fact that the programs will be held in Turkey is a direct factor in this. As a matter of fact, students frequently express that they want to travel to Turkey by learning Turkish. On the other hand, students who did not participate in the ISS activity mostly (n=8) showed this activity in the last place in terms of positive effect.

The opinion of S4, who thinks that OL is the most effective activity, is as follows:

> *I liked the most about the establishment and opening of the library. It was the most perfect thing for me to see that 2 thousand books were together, to organize them and to make categories. We learned a lot during the time we made them, I was satisfied.*

No student mentioned a negative effect for all of the activities. However, the second of the activities with the weakest effect was WDB (n=4). Although it is a factor in this that the event, which is held alternately every week, is based on repeated assignment, it was observed that in the process, it creates a fun environment for students to prepare a board with visuals on a topic that changes every week. The order of the social activities outside the classroom from the most positive to the least positive according to Mongolian students learning Turkish is shown in Table 6:

Table 6. *Statistical Information on the Ranking of Out- of- Class Social Activities of Mongolian Students Learning Turkish*

Act.	1			2			3			4			5		
	S	*f*	%	S	*f*	%	S	*f*	%	S	*f*	%	S	*f*	%
SHP	S6, S7, S9, S10, S14, S15	6	40	S1, S2, S5, S8, S12, S13	6	40	S11	1	6.6	S3, S4	2	13.3	-	-	-
TFTM	S4, S, S12, S13	4	26.6	S6, S9, S10, S15	4	26.6	S3, S5, S7, S14	4	26.6	S1	1	6.6	S2, S11	2	13.3
TFID	S1, S2, S3, S5	4	26.6	S7, S14	2	13.3	S4, S6, S8, S9, S12, S3	6	40	S11, S15	2	13.3	S10	1	6.6
THD	S11	1	6.6	S3, S4	2	13.3	S, S2, S10	3	20	S5, S6, S7, S9	4	26.6	S8, S12, S13, S14, S15	5	33.3
TDA	-	-	-	S11	1	6.6	S15	1	6.6	S2, S8, S10, S12, S13, S14	6	40	S1, S3, S4, S5, S6, S7, S9	7	46.6

According to Table 6, the activity that students think has the most positive effect on language learning processes among task-based social activities outside the classroom is SHP (n=6). Along with the students of the Turcology Department learn all the features of Turkish culture theoretically in the lessons, they find the activities carried out as social activities and supported by the official institutions of Turkey useful. It is in question that students who have limited encounters with native language users want to learn by experiencing a cultural feature as it is lived in Turkey. Considering the fact that TFTM (n=4) and TFID (n=4) are in the second place after BP, which is seen in the first place in terms of positive impact, it is noteworthy that each of them reflects a part of Turkish culture, also includes food that it is carried out as a stakeholder with native Turkish speakers. The opinion of S9, who thinks TFID is the most effective event, is as follows:

Turkish food day. Because I love Turkish food, especially meat dishes. I recognized them.

The opinion of S3, who thinks THD is the most effective activity, is as follows:

I think the most useful Turkish handicrafts day (marbling making) is very interesting.

The opinion of S8 about TFTM activity as follows:

Every event is good at the Turkish Embassy. It was very interesting and fun.

When all activities are evaluated, it can be stated that it has a positive effect in the form of being student-centered, supporting cooperation, experiencing a real communication process, and focusing on the use of the target language in this process, the interaction of four basic language skills, and as a result, the development of students' language levels. In addition, it turns out that all of them are seen as activities that reflect the target language and culture, offer an environment close to nature even though they are far from the country where they are spoken, and allow the transfer of culture with the language. The fact that no negative effects are mentioned also supports this situation.

Students from Mongolia, who learn Turkish as a foreign language, were also asked, "What did you learn about Turkish and Turkish culture through these activities?" The concepts that the students stated that they learned about Turkish and Turkish culture at the end of these activities were coded and presented in the Figure 2.

In order to measure the overall effect of all task-based activities outside the classroom on the language learning processes of Mongolian students learning Turkish as a foreign language, the question "What are the positive / negative effects of these activities you do outside of class on your language learning process?" the question was asked. The answers given by the students to this question were coded and three categories were formed: the effect on language skills, the effect on communication skills, and the effect on information acquisition processes. Accordingly, the students stated that they achieved 6 gains in terms of language skills, 6 in terms of communication skills, and 4 in terms of acquiring knowledge.

All of them gave positive opinions and said that they liked it very much and that it was beneficial for them.

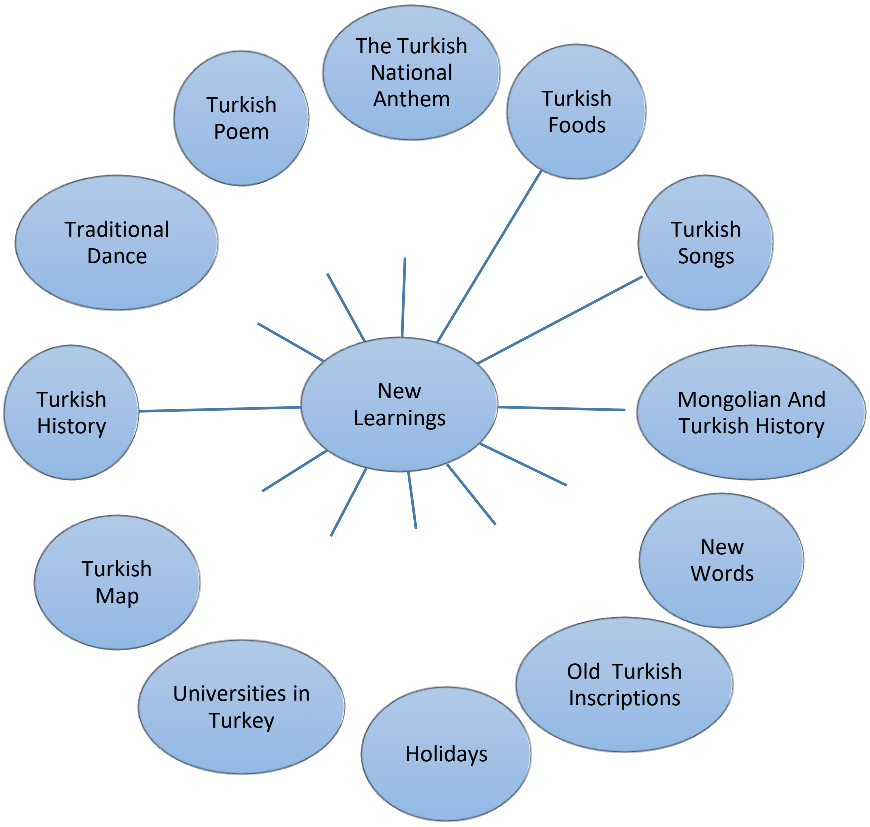
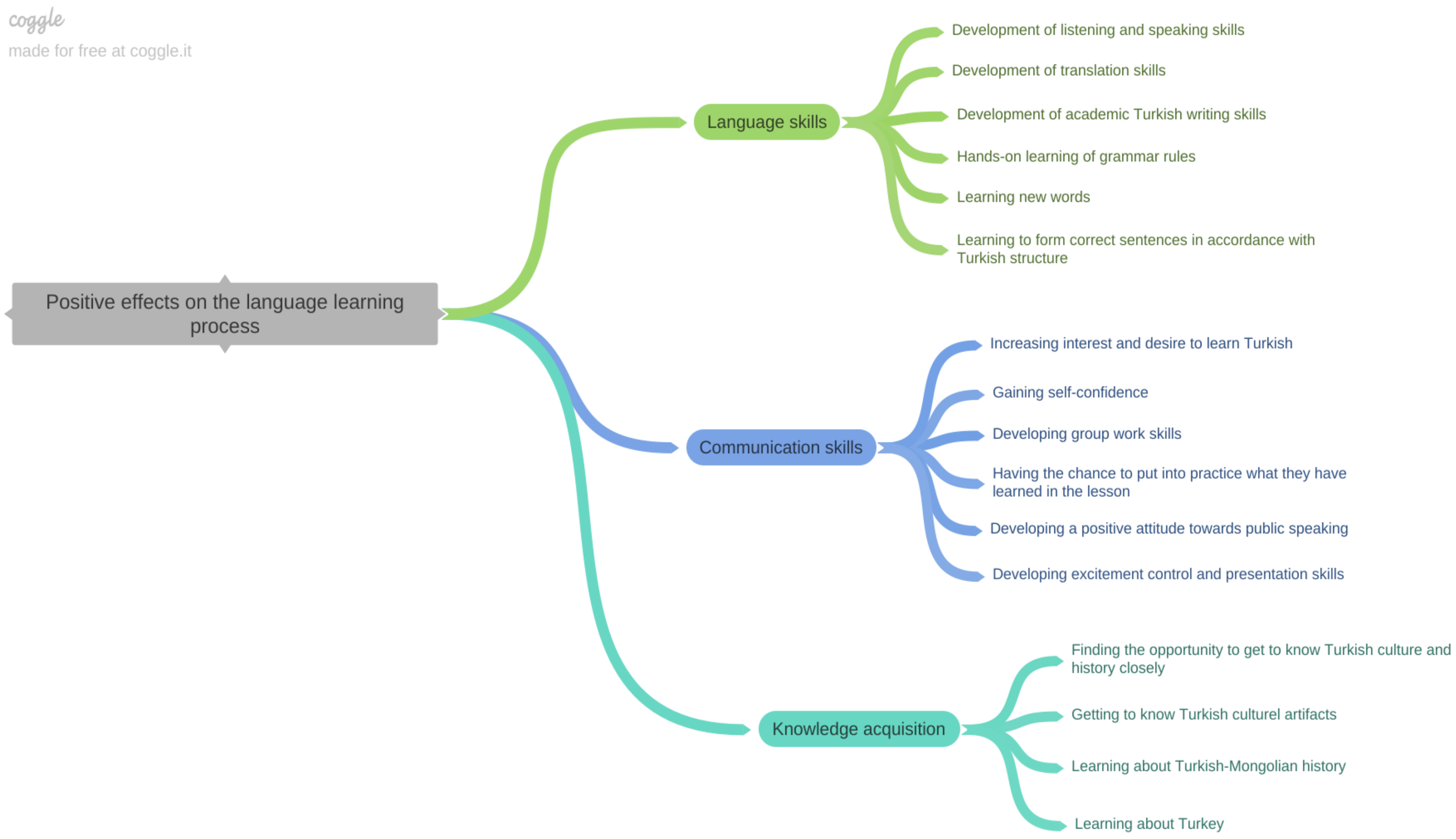


Figure 2. *Learned About Turkish and Turkish Culture*

Apart from this, the students said that they found the activities fun and useful. There was no mention of an adverse effect. It was observed that these activities increase the students' ability to use Turkish throughout the learning process, increase their skills in how they will use the language, and positively affect their language learning motivation. Student acquisitions are presented in the diagram below:

Figure 3. *Positive Effects on the Language Learning Process*



DISCUSSION & CONCLUSION

In this study, which was carried out in Mongolia in order to create the closest environment to nature by carrying language teaching out of the classroom in institutions where Turkish is taught as a foreign language, to introduce the task-based activities performed outside the classroom with Mongolian students learning Turkish and to reveal the effects of these on the language learning processes of the students, based on the students' opinions, it was revealed that the preparation of environments where students can engage in social interaction outside of the classroom has a positive effect. It was observed that students who move out of school and take an active role in the whole planned process, especially in regions where the native speakers of the target language are few, also get the chance to experience the natural language environment by being brought together with native speakers, and this develops a positive perspective in the language learning process.

Due to the distance of Mongolia from Turkey and the small number of Turkish population living in the country, it is difficult for Mongolian students learning Turkish to come together with individuals whose mother tongue is Turkish in social environments. Various social activities are organized from time to time in order to prepare environments where students can speak Turkish. In foreign language teaching, the interest in cultural environments is brought to the forefront with activities such as food and handicraft promotion days, and students are provided to get to know the culture to which the language belongs. As Merrill, Li, Jones (1990) and Jonassen (1991) pointed out, isolated and artificial school environments cannot provide a context for learning. Learning environments should offer rich contexts that reflect the real world and daily life, and at the same time give students the opportunity to apply their acquired knowledge in environments with the same characteristics as real environments (Cited Alkan, Deryakulu & Şimşek, 1995).

The activities, which cover approximately 2 years / 4 teaching periods mentioned in the study, were carried out on a voluntary basis. Out-of-class activities, which are planned between 3 days and 3 weeks and where students take an active role from the beginning to the implementation stage, enriched the learning environments. With out-of-school activities, the individual uses what s/he has gained in the learning environment in real situations. It was demonstrated once again with these activities that out-of-school learning environments increase the desire to learn, improve motivation and attitude towards learning (Ramey-Gassert, 1997). Out-of-school learning environments have enriching, supportive, complementary and concretizing features. At the same time, it gives the individual skills such as developing mental skills, making empathetic associations, looking critically, producing and applying appropriate solutions to problems, and acting creatively (Siedel & Hudson, 1999, 9).

When it is looked at all the activities carried out in the process in general, it is seen that the embassy and centers of other institutions, other universities and Mongolia educational institutions, as well as museums, picnic areas, exhibition centers, cultural centers, where official contacts with Turkey will be established, have been turned into learning environments. Due to the low number of Turkish citizens residing in Mongolia, the means of communicating with people whose mother tongue is Turkey Turkish are also very limited. In this respect, it can be said that learning environments are enriched and while these are being done, cooperation and interaction with existing country institutions are ensured, and communication is established with the carrier and representative institutions of the target language. This has increased the power of education to provide real environments. As a matter of fact, out-of-class education refers to the educational channels one is in from the moment one leaves the classroom. While these educational channels can be zoos, museums, aquariums, science camps, science centers, planetariums, they can also consist of places such as school gardens, trekking and camping areas (Ertaş, Şen & Parmaksızoğlu, 2011). For this reason, it has provided an advantage for students in creating a language environment closest to nature.

Learning is influenced by the culture, context, and practices in which it emerges. Accordingly, one of the most important points for learning is interaction and the student must take part in practice (Kılıç, 2004). In the study, when the students were asked what they learned about Turkish and Turkish culture, it was concluded that many new learnings such as the National Anthem, Turkish food, songs and dances took place. Therefore, the transfer of culture along with the language was supported, and it was ensured that they came together with native speakers of Turkish, especially in situations such as the sacrifice holiday picnic, the Çanakkale Martyrs' Commemoration Program.

It is an accepted fact that motivation stimuletes the student in the foreign language learning process and increases the determination to use the target language (Cited from Ahmed 1989, Karcı & Gündoğdu, 2018). In the answer given by the students to the question about the positive or negative effects of all activities in the process, it was concluded that "new learning occurs with the development of language skills and communication skills". Students stated that their motivation and self-confidence increased with the task-based activities carried out during the language learning process, their interest and desire to learn Turkish increased, and they participated in all activities willingly. In addition, the fact that they stated that they did not have any negative effects supported the situation.

Among the celebration and commemoration activities carried out by the students, they showed the activities celebrated on historical and cultural grounds as those that had a positive effect on their language learning processes. It was observed that the students, who are intertwined with Mongolian history and show great interest in the history of the Republic of Turkey as well as in general Turkish history, work devotedly in the preparations for celebrating such holidays, and try to learn by following every detail carefully.

It is important for students to continue their academic learning even if they move away from the classroom environment with academic activities carried out outside the classroom. In such activities it is aimed that students come together and do work in Turkish. and this way they learn the knowledge they will acquire in classrooms in social environments.

Mongolia provides language proximity and historical unity to students learning Turkish; It offers opportunities for students to learn the starting points of history on site and to see cultural assets closely. This situation also increases students' desire to learn by seeing themselves closer to this language and culture. The academic activities based on the task, the unity of history, language and culture, and the fact that there are many works of Turkish culture in the region, provided an advantage for the students to see the right information on site and to obtain and share them. In addition, in the international activities in the field of Turcology, students were supported to do their own studies and they were provided to learn Turkish at an academic level.

A social interaction environment in which the target language Turkish can be used was provided for students with task-based social activities outside the classroom. In the interviews held with the students, they stated that one of the most effective ways of learning a language for them is to meet with Turks living in their country from time to time. The social activities organized by the teacher in the process provided a rich environment and colored the process.

AUTHOR CONTRIBUTION

First author has made substantial contributions to conception and design, have been involved in drafting the manuscript, acquisition of data, analysis and interpretation of data and have given final approval of the version to be published.

The second author revised it critically for important intellectual content, analysis and interpretation of data.

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