HOW RESPONSIBLE ARE TURKISH SECONDARY SCHOOL STUDENTS FOR DISTANCE LEARNING DURING THE COVID-19 PANDEMIC: A SCALE DEVELOPMENT AND IMPLEMENTATION STUDY

Abstract: The purpose of the current study is to investigate the distance learning responsibility levels of secondary school students attending schools in the Aegean Region of Turkey by developing a scale of responsibility for distance learning. The study is a descriptive study employing the survey model. Two different study groups were used in the current study. In the first stage, a total of 477 secondary school students attending schools in the cities of İzmir, Denizli and Muğla in Turkey in the 2020-2021 school year were included in the study group to develop the Scale of Responsibility for Distance Learning. In the second stage of the study, the study group is comprised of 2043 secondary school students selected from among the secondary school students attending schools located in the cities of İzmir, Manisa, Aydın, Denizli, Muğla, Afyonkarahisar, Kütahya and Uşak in the Agean Region of Turkey in the 2020-2021 school year. The data were collected face-to-face and online via Google Forms during COVID-19 pandemic by using the Scale of Responsibility for Distance Learning. According to the findings of the study, the scale is a valid and reliable scale with adequately satisfied psychometric features. Another finding of the current study is that the participating secondary school students' responsibility scores vary significantly depending on the city where they attend the school, grade level and gender.

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INTRODUCTION

Responsibility for learning is thought to have an important role in the success desired to be achieved in education-instruction. When the literature is reviewed, it is seen that the concept of responsibility for learning is related to concepts such as self-regulation, learner control, and academic self-efficacy. According to Yakar (2017), responsibility for learning is important as it is a key structure in students' school success and their academic-educational-instructional life. Responsibility for learning is thought to have an undeniable place in success. In many classrooms from different levels of education, it is necessary to determine students' levels of responsibility for learning and to create quality learning environments that will facilitate the achievement of educational goals. Learning is the holistic changes experienced by individuals (living beings) in knowledge, emotion, behaviour and all other dimensions. Learning is an inevitable, multidimensional and integrated structure. Responsibility for learning is what learners feel while acting for purposes such as completing the things they feel lacking, fulfilling the tasks, and determining the requirements to reach the goals. Responsibility for learning is an important indicator in determining the quality of learning.

According to Allan (2006), as dimensions of responsibility for learning, "orientation towards school and learning" helps learners to increase their knowledge about the learning environment at school; "active participation in learning activities" enables learners to participate actively in the learning-teaching process; "control of learning and autonomy" refers to the supervision of learners' state of learning by themselves and the instructor and automatization of learning; "initiative" refers to learners' taking the responsibility for their own learning and directing the outcome; "control of learning resources" refers to availability of resources needed to learn to learners and management of these resources; "control of the behaviours in the classroom and cooperation" refers to the management of learners' reactions and behaviours in the learning environment and what they do as a group of learners.

According to Bacon (1993), responsible learners always do their best to learn and show persistent attitudes towards the removal of barriers to learning. Responsible learners see act of responsibility for learning as a tool to ensure school success and to achieve long-term individual career goals. As an indicator of students' acts of responsibility for learning, attitudes and behaviours such as "wanting to learn as soon as possible", "trying to do their best as much as possible", "believing that school success is important for future success", and "preferring challenging learning tasks" can be listed (Allan, 2006). These behaviours can be expressed as behaviours that students can exhibit in activities that they can perform both inside and outside the school. It is necessary to understand the motivational and will-related processes implied by socio-cognitive theories in order to explain students' responsibilities towards school and learning. While socio-cognitive theories highlight individual influences on learning and performance, it should be recognized that thinking and behaviours somehow depend on environmental factors. While individuals with self-regulation skills learn something, they take control of their own feelings and thoughts and fulfil their own learning responsibilities towards their targeted tasks (Corno, 1992; Zimmerman and Schunk, 1989).

According to Barr and Tagg (1995), those who take responsibility for their own learning are decisive people in setting goals, organizing, taking action, and they can change their behaviour when necessary for their success (Yeşil, 2013). Learners' carrying out activities by taking the responsibility for their own learning makes a significant contribution to the accomplishment of permanent learning through active participation and to the increase in their sense of responsibility. Within the framework of this understanding, education systems are in search of new perspectives and new directions (Başbay, 2008). In the literature, responsibility for learning is generally addressed considering face-to-face educational and instructional processes in schools. However, no research has been found on responsibility for distance learning.

Especially during the COVID-19 pandemic, the importance of distance education and distance learning has started to be felt more.

During the COVID-19 pandemic, students from all levels of education participate in the learning-teaching process through distance education. As it cannot be predicted when this pandemic will end, there is no clarity on how long students will go on learning distance. In the ongoing distance learning process, especially when the affective characteristics of students are considered, responsibility for learning is thought to have an important place in learning as well as in motivation to learn. According to Kaya (2002), distance education is based on motivation to learn as well as being an individual activity. Learning is guided, and getting students active requires constant support. In the centre of learning and teaching in distance education, there should be personal relationships between students and those who support students, the pleasure of working and understanding by participating in emotions. In addition to these, it is thought that the active participation of students in the learning process and their affective characteristics in this process play an important role in their learning.

According to Yıldız (2020), online learning environments have made the online interaction between student and student and student and teacher a part of education by moving educational practices beyond the physical boundaries of the classroom. Thus, students have started to interact with their teachers / lecturers and classmates using synchronous or asynchronous online communication tools (Wang, 2008). In this interaction process, in learner-centred approaches to distance education, it is stated that learners learn actively and they have greater inputs about what they will learn and how and when they will learn it. At this point, it is stated that students take responsibility for their own learning and participate in the process with this responsibility (Duckworth, 2009).

Regarding the affective characteristics of students while participating in distance learning, Kaya (2002) points out some advantages of distance learning, such as providing opportunities for independent and individual learning and giving the individual the responsibility for learning but he also talks about some serious disadvantages such as not being able to provide sufficient support to students who do not have the habit of learning on their own without help. Moore (1973) defines students who are autonomous in their learning as individuals who can stimulate themselves in learning, know the ways to achieve goals, and evaluate their own success by measuring it. In the process of distance education, students and teachers are in separate places, learners are responsible for their own learning, learners are offered a wide range of options about the choice of courses, the format and method of the course and students learn at their own pace whenever and wherever they want (Keegan, 1996). Except for the summer holiday in 2020, students have been experiencing distance learning from 23 March 2020 until the present day. According to the statistics on formal education issued by the Ministry of National Education (2020);

> "…In Turkey, in preschool, elementary and secondary education, there are a total of 18,241,881 students of whom 9,435,000 are males and 8,806,881 are females… A total of 2,516 hours of broadcasting was made on TRT EBA TV Primary School, TRT EBA TV Secondary School and TRT EBA TV High School between March 23 and June 19. During the distance education process, 7,383,213 students, 1,030,516 teachers actively used the Education Information Network (EBA) … EBA also developed an educational infrastructure that can be used for 7 days 24 hours for 18 million students … 5,954,174 live lessons have been delivered in the EBA live classroom application so far. In addition, programs were prepared for 8th and 12th grade students covering the subjects they are responsible for in YKS and LGS (National Central Exams) exams. … EBA Academic Support, which was put into service recently and powered by artificial intelligence for the use of students preparing for the university exam has been used by 1,170,168 students and 189,477 teachers…"

Participation of such a large number of people in the distance education process requires seeking solutions to the problems that might arise. This search for solutions must be supported with scientific and academic research. In this context, the participation of students in the education services offered by the Ministry of National Education and the state of their knowledge, emotions, behaviours and skills in the learning-teaching process are considered worth examining.

The Ministry of National Education (2020) explained the details of the distance education process for the fall term of the 2020-2021 school year (1st term) as follows;

> "…With the new academic year, we will share the weekly course schedules of TRT EBA Pre-school / Elementary School, Secondary School and High School channels, where 812 teachers work in 112 branches and 1,653 lesson videos are prepared and broadcast in 13 studios, to the mobile phones of the parents of our 18 million students via SMS ... Our lesson broadcasts will continue to be displayed three times a day to allow our students to compensate and reinforce.... In addition, 60 thousand tablet computers provided by public institutions and organizations, local administrations, private sector organizations and civic initiatives and 500 thousand tablet computers to be provided by our ministry will be distributed to students in need according to the distribution strategy we have prepared in light of the official data until the end of the year ... Live classroom applications, which have served 49 million 768 thousand class hours since 23 March 2020, when we started distance education, will actively serve during this period … With the integration of EBA live classroom and alternative applications into our system, we have the capacity to do approximately 2 million lessons per day … Our EBA internet portal, which has become the world's most visited education website with 9.1 billion clicks, is at the service of our students with more than 1,700 lessons and more than 40,000 rich, reliable and interactive contents ... In EBA, video or interactive lectures complying with the subjects and objectives in the curriculums and exercises, summaries, infographics, project documents, special content for teachers, more than 5,000 books and more than 240,000 questions are presented to our teachers and students...".

In this statement, while the Ministry of National Education provides information on the provision of necessary services, infrastructure, content and equipment, it also reveals some data on participation in the distance education process. In addition to the active participation of students in distance education activities, the adaptation of students from every region of the country to this process, the efficiency, success and permanence of distance learning, the affective status of students and in particular their responsibility for distance learning should be examined.

Gündüz Öğüdücü (2020), in his article titled "New Education Order After Coronavirus", defines the process as follows;

> "…This epidemic has affected education worldwide … Educational institutions at all levels from primary and secondary schools to high schools and universities have been almost completely closed … According to UNESCO data, all schools in 191 countries have physically suspended education, while schools in 5 countries have been partially closed … Approximately 1 billion 723 million students worldwide have been affected by this situation … The coronavirus forced educators to produce innovative solutions in a short time to make distance education efficient … For example, in Hong Kong, students were educated at home with interactive applications. In China, where the population is very high, students continued their education with television broadcasts, as in our country ... In this process, students were tried to be followed with different applications … However, as students were not adequately followed by teachers, as in the classical education applied in classrooms, learners' responsibility to learn in distance education has increased significantly ... That is, responsibility for learning outweighed responsibility for teaching … Taking this responsibility is easier for individuals who have learned to learn ... However, as it is not possible for students of primary school age to fulfil this responsibility, their

families are also involved in this process... For disadvantaged students and their families who have difficulty in accessing the Internet, computer or television, this responsibility has become even more severe … In addition to being educational centres, schools are the environments where children and young people socialize and prepare for social life ... Today's students, who will be the employees and leaders of the future, need all kinds of social, emotional and academic support in order to be successful in their social relations and business life…".

As can be seen above, the learning responsibility attributed to students from all levels of education is one of the affective characteristics that students need to have in the distance learning process and should be emphasized strongly. Otherwise, students' distance learning processes may be interrupted.

Undoubtedly, students may face many problems in this difficult process. These problems include not having tools such as internet connection and computer, tablet, loss of motivation for learning, low responsibility for learning, inability to manage the learning process, and inability to actively participate in the learning-teaching process. In order to overcome these problems, it seems to be necessary to determine the level of responsibility of students for distance learning. In this connection, the purpose of the current study is to develop the scale of the responsibility for distance learning and to investigate secondary school students' level of responsibility for distance learning in the Aegean Region of Turkey.

METHOD

The current study is a descriptive study employing the survey model. The survey model is "a research model that tries to describe a case as it was or is and to describe the individual, event or object being studied in its own conditions as it is" (Büyüköztürk, Kılıç-Çakmak, Akgün, Karadeniz and Demirel, 2014; Karasar, 2008). In the current study, first the scale of responsibility for distance learning was developed. In the second stage of the study, the scale developed was administered to the secondary school students that could be reached in 8 cities of the Aegean Region to elicit the students' level of responsibility for distance learning.

STUDY GROUP

Two different samples were constructed to be used in the first and second stages of the study. In the first study group, a total of 477 secondary school students (251 females and 226 males) attending schools in the cities of İzmir, Denizli and Muğla in the Aegean Region of Turkey in the 2020-2021 school year were included. From among the returned scales, 448 were found to be correctly completed and the validity and reliability studies of the scale were conducted on the data obtained from these 448 students. In the second stage of the study, the study group is comprised of 2043 secondary school students selected from among the secondary school students attending schools located in the cities of İzmir, Manisa, Aydın, Denizli, Muğla, Afyonkarahisar, Kütahya and Uşak in the Agean Region of Turkey in the 2020-2021 school year by means of the convenience sampling method. During the data collection process, the data obtained from 108 participants were found to be invalid and excluded from the analysis. In Table 1, information about the study group used in the second stage of the study is given.

Table 1. Information about the Study Group Used in the Second Stage of the Study

Variable	Province/Grade Level/Gender	N	%
Province	İzmir	288	14.1
	Manisa	226	11.1
	Aydın	310	15.2
	Denizli	274	13.4
	Muğla	279	13.7
	Afyonkarahisar	206	10.1
	Kütahya	255	12.5
	Uşak	205	10.0
Grade Level	5th Grade	504	24.7
	6th Grade	477	23.3
	7th Grade	496	24.3
	8th Grade	566	27.7
Gender	Female	1116	54.6
	Male	927	45.4
Total		2043	100.0

DATA COLLECTION TOOLS AND DATA COLLECTION

In the current study, as the data collection tool, the Scale of Responsibility for Distance Learning whose validity and reliability studies were conducted was used. The scale was developed on the basis of the Scale of Responsibility for Learning, which had been developed by Yakar and Saracaloğlu (2017) to determine students' level of responsibility for learning. The Scale of Responsibility for Learning is a five-point Likert scale designed in the form of self-report scale ("Completely unsuitable for me=1", "Unsuitable for me=2", "A little suitable for me=3", "Suitable for me=4", "Completely suitable for me=5"). The scale consists of 35 items and a single dimension and there is no item reversely scored in the scale. Some values of the Scale of Responsibility for Distance Learning are given in Table 2.

Table 2. Values of the Scale of Responsibility for Distance Learning

The Number of Items	Cronbach Alpha Internal Consistency Coefficient	Minimum Score to be Taken from the Scale	Maximum Score to be Taken from the Scale	Level Intervals				
				Very Low Level	Low Level	Medium Level	High Level	Very High Level
35	.964	35.00	175.00	35.00-62.99	63.00-90.99	91.00-118.99	119.00-146.99	147.00-175.00

In line with the purposes of the study, the data were collected in all the cities located in the Aegean Region of Turkey by using the Scale of Responsibility for Distance Learning after the required permissions had been taken from the concerned authorities. Due to the disadvantages brought about by the pandemic, the data collection process lasted for about 3 months. Some of the data were collected through face-to-face administration of the scale while the majority of the data were collected online via Google Forms.

DATA ANALYSIS AND INTERPRETATION

In the first stage of the study, exploratory and confirmatory factor analyses and item analyses were conducted on the collected data to determine the validity and reliability features of the Scale of Responsibility for Distance Learning to be developed. As a result, values proving that the scale is valid and reliable were obtained. SPSS 22.0 program package was used for the exploratory analysis while AMOS 22.0 was used for the confirmatory factor analysis. In order to test the validity of the scale, Kaiser-Meyer-Olkin (KMO) and Bartlett test values, and then extraction, component values, the total variance explained by the scale, goodness-of-fit values, CFA and C.R. values and item total correlations were calculated while in order to test the reliability of the scale, the split-half reliability of the scale and Cronbach Alpha internal

consistency coefficients of the scale were calculated and level intervals of the scores to be taken from the scale were explained. After the information has been given about the stages of the development of the Scale of Responsibility for Distance Learning, interpretations about the usability of the scale are given.

In the second stage of the study, the secondary school students' level of responsibility for distance learning attending schools in the Aegean Region was investigated in terms of province where they attend school, grade level and gender. In this regard, first, normality tests were conducted in SPSS 22.0 program package and as the Kolmogorov-Smirnov and Shapiro-Wilk values were found to be significant, it was concluded that the distribution is not normal. Therefore, Kruskal Wallis Test was used in the comparative analyses conducted for the variables of province and grade level, which had more than two categories while Mann-Whitney U Test was used for the gender variable having two categories and then the results were analyzed and interpreted by using the Tamhane comparative analysis technique, one of the components of these tests.

RESULTS

DEVELOPING SCALE AND VALIDITY-RELIABILITY STUDIES

The studies carried out to establish the validity of the Scale of Responsibility for Distance Learning were conducted in three stages. First, the items in the Scale of Responsibility for Learning developed by Yakar and Saracaloğlu (2017) were examined. From among the items in the scale, the items thought to be suitable to be included in the Scale of Responsibility for Distance Learning with some small changes were determined. Then, the relevant literature was reviewed, and various items were written on the basis of the studies in the literature. Then, the developed items were submitted to the review of a measurement and evaluation expert, an educational psychology expert, a curriculum and instruction expert and an educational technologies expert and in light of their feedbacks, a 35-item scale was developed. This scale was administered to 477 secondary school students (448 of them were correctly completed). The collected data were subjected to factor analyses and item analyses in SPSS 22.0 and AMOS 22.0 program packages.

In order to determine the construct validity of the scale, exploratory factor analysis (EFA) and then confirmatory factor analysis (CFA) were conducted. In the analysis of the items to be included in the scale, the item analysis technique based on the item total correlation was used. In order to estimate the reliability of the scale, the internal consistency and split-half methods were used. In the estimation of the reliability through the internal consistency method, Cronbach Alpha internal consistency coefficient was calculated.

VALIDITY

After the required corrections were made on the basis of the expert review for the face validity of the scale, the scale was administered to 448 students and in order to determine the construct validity, first exploratory factor analysis and then confirmatory factor analysis were conducted. In the principal components analysis, Kaiser-Meyer-Olkin (KMO) value (.812) and Bartlett test (2297.829, df=595, p=.000) were found to be significant. As the KMO value was found to be higher than .60 and Bartlett test was found to be significant, the data were considered to be suitable for factor analysis (Büyüköztürk, 2005; Seçer, 2013). Thus, exploratory factor analysis was conducted. In order to determine the number of important factors, the factors having an eigenvalue higher than 1 and the variance explained were examined. As a result of the exploratory factor analysis and rotation, it was concluded that the scale is consisted of 35 items and a single dimension. According to Büyüköztürk (2010), this scale can be considered to be a unifactorial scale. The fact that the items in the scale were found to have high factor loading values before the rotation, that the variance explained by the first factor is high and that the

eigenvalue of the first factor is three times higher than the eigenvalue of the second factor can be seen as evidence supporting the unifactorial structure of the scale. In such cases, researchers can decide on the factor structure of the scale on the basis of theoretical and empirical evidence. After the analysis of the principal components of the scale, the values of the exploratory factor analysis were examined. The results of the exploratory factor analysis obtained for the Scale of Responsibility for Distance Learning are given in Table 3.

Table 3. Results of the Exploratory Factor Analysis of the Scale of Responsibility for Distance Education

Item	Extraction	Component	Item	Extraction	Component
1	.560	.525	19	.524	.481
2	.727	.536	20	.637	.644
3	.662	.585	21	.598	.706
4	.510	.549	22	.647	.570
5	.668	.648	23	.647	.782
6	.601	.568	24	.548	.561
7	.530	.551	25	.511	.578
8	.674	.628	26	.697	.636
9	.715	.588	27	.739	.574
10	.583	.699	28	.592	.629
11	.653	.617	29	.733	.644
12	.727	.612	30	.668	.724
13	.709	.691	31	.594	.703
14	.555	.605	32	.596	.635
15	.633	.637	33	.609	.715
16	.597	.584	34	.629	.595
17	.655	.713	35	.570	.637
18	.584	.625	Total Variance Explained by the Scale: 47.690%		

As a result of the exploratory factor analysis, it was found that the 35 items in the scale were collected under a single factor. The scale items collected under a single dimension explain 47.690% of the total variance. After the exploratory factor analysis, confirmatory factor analysis was conducted in AMOS program package to confirm the construct validity of the scale. The goodness-of-fit values of the scale were determined in this confirmatory factor analysis. The fit values of the Scale of Responsibility for Distance Learning are given in Table 4.

Table 4. Fit Values Obtained from the Confirmatory Factor Analysis of the Scale of Responsibility for Distance Learning

Fit Measure	Fit Values of the Scale	Good Fit Interval	Acceptable Fit Interval
X^2	2199.923 (Acceptable Fit Interval)	$0 \leq X^2 \leq 2df$	$2df < X^2 \leq 3df$
X^2/df	3.92 (Acceptable Fit Interval)	$0 \leq X^2/df \leq 2$	$2 < X^2/df \leq 3$ or <4
RMSEA	.077 (Acceptable Fit Interval)	$0 \leq RMSEA \leq .05$	$.05 < RMSEA \leq .08$
SRMR	.074 (Acceptable Fit Interval)	$0 \leq SRMR \leq .05$	$.05 < SRMR \leq .10$
CFI	.962 (Acceptable Fit Interval)	$.97 \leq CFI \leq 1.00$	$.95 \leq CFI < .97$ or $.90 \leq CFI < .97$
GFI	.943 (Acceptable Fit Interval)	$.95 \leq GFI \leq 1.00$	$.90 \leq GFI < .95$
AGFI	.864 (Acceptable Fit Interval)	$.90 \leq AGFI \leq 1.00$	$.85 \leq AGFI < .90$

The fit values obtained from the confirmatory factor analysis of the Scale of Responsibility for Distance Learning; RMSEA: .077 (within the acceptable fit interval); SRMR: .074 (within the acceptable fit interval); CFI: .962 (within the acceptable fit interval); GFI: .943 (within the acceptable fit interval); AGFI: .864 (within the acceptable fit interval), were found to be good enough (Browne and Cudeck, 1993; Hu and Bentler, 1999; Schermelleh-Engel, Moosbrugger and Müler, 2003). The Chi-square value for the model was calculated to be X^2=2199.923;

df=561; p<.001 and found to be significant. When the Chi-square divided by its degrees of freedom was calculated, it was found to be $X^2/df=3.92$ and as the value is lower than 4, it indicates an acceptable fit (Şimşek, 2007; Seçer, 2013). The results of the confirmatory factor analysis of the Scale of Responsibility for Distance Learning are given in Table 5.

Table 5. Results of the Confirmatory Factor Analysis of the Scale of Responsibility for Distance Learning

Item	CFA	C. R.	Item	CFA	C. R.	Item	CFA	C. R.
1	.71	14.51	13	.65	14.14	25	.71	14.55
2	.78	14.58	14	.78	14.63	26	.65	14.30
3	.69	14.23	15	.64	14.26	27	.72	14.61
4	.68	14.49	16	.68	14.47	28	.61	14.53
5	.63	14.25	17	.64	14.75	29	.73	14.66
6	.64	14.18	18	.63	14.52	30	.73	14.77
7	.72	14.48	19	.64	14.24	31	.71	14.46
8	.75	14.51	20	.71	14.62	32	.67	14.72
9	.77	14.76	21	.68	14.48	33	.72	14.75
10	.66	14.50	22	.68	14.57	34	.67	14.73
11	.67	14.62	23	.68	14.33	35	.68	14.70
12	.75	14.64	24	.63	14.55			

According to the results of the confirmatory factor analysis, the factor loading values of all the items in the scale are statistically significant. The item-factor loading values were found to be ranging from .61 to .78. When the C.R. values of all the items in the scale are examined, it is seen that factor-loading values are statistically significant. These findings show that the scale has the construct validity. After the establishment of the construct validity, the item-total correlation values of the items in the scale were examined. The results of the item-total correlation analysis of the items in the scale are given in Table 6.

Table 6. Results of the Item-Total Correlation Analysis of the Items in the Scale

Item	Item-Total Correlations	Item	Item-Total Correlations
1	.733	19	.765
2	.780	20	.635
3	.712	21	.703
4	.696	22	.774
5	.759	23	.771
6	.700	24	.660
7	.764	25	.673
8	.625	26	.628
9	.796	27	.783
10	.687	28	.743
11	.601	29	.663
12	.791	30	.708
13	.688	31	.681
14	.705	32	.613
15	.638	33	.708
16	.693	34	.686
17	.697	35	.636
18	.611		

When the item-total correlations within the results of the item analysis conducted on the scale items were examined, the correlations were found to be ranging from .601 to .783. These values obtained for the scale items can be said to make contribution to the validity of the scale.

RELIABILITY

In order to test the reliability of the scale, first split-half test was conducted and then Cronbach Alpha internal consistency coefficients were calculated. The Cronbach Alpha internal consistency coefficient obtained from the split-half test was calculated to be $r_{1/2}=.894$. A $r_{1/2}$

value higher than .80 indicates that the scale is highly reliable (Özdamar, 1999; Tavşancıl, 2006). In addition, the Cronbach Alpha internal consistency coefficient for the whole scale was found to be .944, which can be interpreted as an indication of high reliability. The scores related to the use of the Scale of Responsibility for Distance Learning are given in Table 7.

Table 7. Scores related to the Use of the Scale of Responsibility for Distance Learning

The Number of Total Items	Cronbach Alpha Internal Consistency Coefficient	Minimum Score to be Taken from the Scale	Maximum Score to be Taken from the Scale	Level Intervals				
				Very Low Level	Low Level	Medium Level	High Level	Very High Level
35	.944	35.00	175.00	35.00-62.99	63.00-90.99	91.00-118.99	119.00-146.99	147.00-175.00

When the Scale of Responsibility for Distance Learning is used in any study, a single score will be obtained by the participant and the evaluation will be made on this score. For example, when a participant takes 98.00 points from the scale, it will be evaluated that he/she has a medium level of responsibility for distance learning, and when a participant takes 140.00 points from the scale, it will be evaluated that he/she has a very high level of responsibility for distance learning.

THE LEVEL OF RESPONSIBILITY OF THE STUDENTS ATTENDING SCHOOLS IN THE AEGEAN REGION FOR DISTANCE LEARNING

First, in line with the purpose of the current study, the normality of the distribution of the data was checked to analyze the data and in this connection, Kolmogorov-Smirnov and Shapiro-Wilk were calculated and found to be significant (p<.05), which means that the distribution is not normal. Therefore, Kruskal Wallis Test was used for the variables of province and grade level having more than two categories while Mann-Whitney U Test was used for the variable of gender having two categories. The results of the Kruskal Wallis test conducted to determine whether the students' scores taken from the scale vary significantly depending on the province where they attend school are given in Table 8.

Table 8. Kruskal Wallis Test Analysis Results of Students' Responsibility Scores for Distance Learning by Province

Province	N	μ	S	Mean Rank	X^2	df	p
İzmir	288	123.25	23.69	781.59			
Manisa	226	137.45	25.18	1143.23			
Aydın	310	134.11	26.42	1062.01			
Denizli	274	135.65	24.65	1093.18			
Muğla	279	137.46	25.01	1142.04	106.111	7	.000
Afyonkarahisar	206	124.63	24.33	824.82			
Kütahya	255	137.12	24.01	1123.89			
Uşak	205	130.91	26.13	978.50			
Total	2043	132.71	25.48				

The results of the Kruskal Wallis test and Tamhane comparison analysis conducted to determine whether the secondary school students' scores taken from the Scale of Responsibility for Distance Learning vary significantly depending on province have revealed that the mean scores of the secondary school students attending schools located in the cities of Muğla, Manisa, Kütahya, Denizli and Aydın are significantly higher than those of the secondary school students attending schools located in the cities of Afyonkarahisar and İzmir and that the mean score of the students attending schools located in the city of Uşak is significantly higher than that of the secondary school students attending schools located in İzmir (X^2=106.111; df=7; p=.000). When the students' mean responsibility scores obtained in the comparisons made were examined, a significant difference was found in favour of the secondary students attending

schools located in the cities of Muğla, Manisa, Kütahya, Denizli and Aydın. In other words, it can be said that the secondary school students attending schools located in the cities of Muğla, Manisa, Kütahya, Denizli and Aydın have higher responsibility for distance learning than the secondary school students attending schools located in the cities of Afyonkarahisar and İzmir in the Aegean Region.

In the current study, Kruskal Wallis test was conducted to investigate whether the secondary school students' scores taken from the Scale of Responsibility for Distance Learning vary significantly depending on grade level and the results of this analysis are presented in Table 9.

Table 9. Kruskal Wallis Test Analysis Results of Students' Responsibility Scores for Distance Learning by Grade Level

Grade Level	N	μ	S	Mean Rank	X^2	df	p
5th Grade	504	128.66	26.45	927.35			
6th Grade	477	130.01	25.83	956.61			
7th Grade	496	131.95	25.09	1000.85	60.053	3	.000
8th Grade	566	139.27	23.34	1179.92			
Total	2043	132.71	25.48				

The results of the Kruskal Wallis test and Tamhane comparison analysis conducted to determine whether the secondary school students' scores taken from the Scale of Responsibility for Distance Learning vary significantly depending on grade level have revealed that the mean score of the 8th graders is significantly different from the mean scores of the 7th, 6th and 5th graders (X^2=60.053; df=3; p=.000). When the secondary school students' mean responsibility scores were examined through comparisons, a significant difference was found in favour of the 8th graders. In other words, it can be said that 8th grade students have higher responsibility for distance learning than the 7th, 6th and 5th grade students attending schools located in the Aegean Region.

In the current study, Mann Whitney U Test was used to determine whether the secondary school students' scores taken from the Scale of Responsibility for Distance Learning vary significantly depending on gender and the results of the test are presented in Table 10.

Table 10. Mann Whitney U Test Analysis Results of Students' Responsibility Scores for Distance Learning by Gender

Gender	N	μ	S	Mean Rank	Sum of Ranks	U	z	p
Female	1116	135.17	24.68	1079.75	1205004.00			
Male	927	129.76	26.11	952.47	882942.00	452814.00	-4.856	.000
Total	2043	132.71	25.48					

When the results of the Mann Whitney U test conducted to determine whether the secondary school students' scores taken from the Scale of Responsibility for Distance Learning vary significantly depending on gender were examined, it was found that the mean score of the female students (μ=135.17) is significantly higher than that of the male students (μ=129.76) (U=452814.00; z=-4.856; p=.000). This finding shows that the female students have higher responsibility for distance learning than the male students.

DISCUSSION, RESULTS AND SUGGESTIONS

In Turkey, the necessary infrastructure and learning management system, tools and materials are provided by the Ministry of Education during the pandemic. Students from all levels of educational participate in live lessons through the Education Information Network (EBA). Unfortunately, students who do not have internet connection or who live in places where there is no internet infrastructure cannot attend live lessons. In order to eliminate such a disadvantage, the Ministry of National Education has developed EBA TV for primary, secondary and high school students in 2020 and put it into service as a national channel. Although these

opportunities are provided to students in terms of participating in classes and improving their learning, students experience various problems in the distance education process. According to Özer, Suna, Çelik and Aşkar (2020), the main determinants of the motivation and continuity of learning in the distance education process are the family's possibilities and the value they attach to education, the physical conditions of children at home and the digital literacy levels of children. Another problem that students can or may experience in this process is the "responsibility for distance learning" discussed in the current study.

What is expected from students in terms of responsibility for distance learning includes adapting to different situations (the lesson in a virtual environment, differentiation of interaction, etc.), entering the lesson on time, active participation in the lesson, completing the tasks given outside the lesson, completing the online tasks given through the EBA system (videos to be watched, tests to be solved, etc.), responding immediately when asked questions during the lesson, not being interested in anything else that will distract them while in the lesson, informing the teacher before the lesson if there is a compulsory situation that causes them to be absent from the lesson, communicating with the teacher about issues or questions they do not understand, and having high motivation for the lesson.

In line with the purposes of the current study, firstly, validity and reliability studies of the Scale of Responsibility for Distance Learning were conducted. The scale was administered to 448 students and then first exploratory factor analysis and then confirmatory factor analysis were conducted to establish the construct validity. In the principle components analysis, Kaiser-Meyer-Olkin (KMO) value was found to be .812 and Bartlett test was found to be significant. As a result of the factor analysis, the 35 items in the scale were found to be collected under a single factor. The scale items were found to explain 47.690% of the total variance. After the completion of the exploratory factor analysis, the goodness-of-fit indices obtained from the confirmatory factor analysis of the Scale of Responsibility for Distance Learning were calculated and the following fit values were found; RMSEA, SRMR, CFI, GFI and AGFI within the acceptable fit interval. These values were found to be good and adequate. According to the results of the confirmatory factor analysis of the scale, the factor loading values of all the items in the scale were found to be statistically significant. In the confirmatory factor analysis, item-factor loading values (CFA) were found to be ranging from .61 to .78. When the C.R. values of all the items in the scale were examined, factor-loading values were found to be statistically significant. These findings show that the scale has the construct validity.

In the current study, in order to establish the reliability of the scale, the split-half method was used and then the Cronbach Alpha internal consistency coefficient was calculated for the whole scale. The Cronbach Alpha internal consistency coefficient obtained from the split-half method was found to be r1/2=.894 and the Cronbach Alpha internal consistency coefficient was calculated to be .944 for the whole scale and these values can be evaluated as an indicator of high reliability. All these results show that the Scale of Responsibility for Distance Learning is a valid and reliable measurement tool. The scale is a valid and reliable measurement tool with adequate psychometric features. This scale based on the concepts related to responsibility for distance learning and teaching can be used to determine secondary school students' level of responsibility for distance learning.

In the second stage of the study, it was investigated whether the levels of responsibility of the secondary school students attending schools in the Aegean Region of Turkey for distance learning vary significantly depending on the city where they attend the school, grade level and gender. The mean responsibility score of the students was calculated to be (μ=132.71) and on the basis of this mean score, it was concluded that the students have a "high level" of responsibility for distance learning. This high level yet is closer to the medium level of the high level category (medium level is 133.00). Thus, necessary studies and activities should be done to increase students' level of responsibility for distance learning to a very high level. Such

studies and activities and support services and guidance are believed to develop students' responsibility for distance learning and lead to positive developments in terms of their academic achievement and motivation.

When the students' scores taken from the Scale of Responsibility for Distance Learning were examined according to the province where they attend school by using Kruskal Wallis test and Tamhane comparison analysis, it was found that the mean scores of the students attending secondary schools located in the cities of Muğla, Manisa, Kütahya, Denizli and Aydın are significantly higher than those of the secondary school students attending schools located in Afyonkarahisar and İzmir and that the mean responsibility score of the secondary school students attending schools in the city of Uşak is significantly higher than that of the secondary school students attending schools located in the city of İzmir. Thus, it can be said that the secondary school students attending schools in the cities of Muğla, Manisa, Kütahya, Denizli and Aydın have higher responsibility for distance learning than the secondary school students attending schools in the city of Afyonkarahisar and İzmir in the Aegean Region. Rather than the city variable, the main reasons for these differences may be shown the efforts of families and students, the budget they allocate for their distance education, and the socio-economic status of the school regions in the cities.

It was also investigated whether the mean scores taken from the Scale of Responsibility for Distance Learning by the secondary school students attending schools in the Aegean Region vary significantly depending on grade level through Kruskal Wallis and Tamhane comparison analysis and it was found that the mean responsibility score of the 8th graders is significantly different from the mean responsibility scores of the 7th, 6th and 5th graders. Thus, it can be said that the 8th graders have higher responsibility for distance learning than the 7th, 6th and 5th graders. This might be because the 8th graders have to prepare for centralized high school entrance exam. Within the framework of the responsibility for distance learning, there are no research results that support or do not support this finding in the literature.

In the current study, Mann Whitney U test was used to investigate whether the secondary school students' scores taken from the Scale of Responsibility for Distance Learning vary significantly depending on gender and it was found that there is a significant difference between the mean score of the female students and that of the male students. Thus, it can be said that the female secondary school students attending schools located in the Aegean Region have higher responsibility for distance learning than the male students. Within the scope of the responsibility for distance learning, no research results were found that support or do not support this finding in the literature.

Regarding the distance learning process, Willis (1992) emphasizes that the primary role of students in distance learning processes is "learning". This challenging task (learning) requires motivation, planning, analyzing and application skills. It is underlined that in distance learning environments, students may encounter complex situations due to various reasons in the learning process and teachers, administrators and educational institutions have various and important responsibilities in this regard. In another study on distance learning, Yılmazsoy and Kahraman (2018) stated that the reason why students should take more responsibility in the distance learning process is that online learning is more flexible, more learner-centred and includes more autonomy compared to face-to-face learning environments, students need to focus on the lesson and make their learning planning for the success of education. Otherwise, educational and instructional environments that are uniform, do not contain innovations and where student achievement is low may emerge.

Hidayati, Budiyono and Sugiman (2018) emphasize that responsibility has various aspects such as fulfilling duties and obligations, taking risks or initiatives, and striving in a disciplined manner until the tasks have been completed. For these reasons, it is necessary to determine the responsibility levels of students for both distance and face-to-face learning and to carry out the

required guidance and support activities. In the perceived classroom responsibility climate questionnaire study conducted with the participation of secondary school students, according to Fernandez-Rio, Cecchini, Merino-Barrero, and Valero-Valenzuela (2019), after the completion of the programs applied to students in order to develop responsibility, measuring the changes occurring in the classroom atmosphere, encouraging students to improve their behaviours, and allowing them to determine their own achievement goals and future can contribute to their academic performance. In another scale development study on responsibility, Akbay, Çapri, and Gündüz (2013) stated that if students, educators and institutions have more information about academic responsibility content and the characteristics of a person with academic responsibility, it will be easier to achieve academic goals.

In the current study, a measurement tool whose validity and reliability studies were completed and which was proved to have adequate psychometric features was developed to measure the responsibility for distance learning and then was used to determine whether the responsibility scores of the secondary school students attending schools located in the Aegean Region vary significantly depending on the city where they attend school, grade level and gender. In light of the findings of the current study, following suggestions can be made: The Scale of Responsibility for Distance Learning can be administered to students from different levels of education and different regions of Turkey so that their level of responsibility for distance learning can be determined. After the determination of students' level of responsibility for distance learning, various activities and support services can be provided to develop this aspect of students, which is an important component of their academic achievement. It is hoped that this developed measurement tool will contribute to the literature and will make distance learning processes more effective and productive during the pandemic and later.

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ANNEX
DATA COLLECTION TOOL IN THE LANGUAGE OF APPLICATION (SCALE OF RESPONSIBILITY FOR DISTANCE LEARNING)

No.	Uzaktan Öğrenmeye Yönelik Sorumluluk Ölçeği (Ortaokul Öğrencileri İçin) Scale of Responsibility for Distance Learning (For Secondary School Students)	Bana Hiç Uygun Değil	Bana Uygun Değil	Bana Kısmen Uygun	Bana Uygun	Bana Tamamen Uygun
1.	Uzaktan gerçekleştirilen derslerde başarılı olmak için konuları öğrenmem gerektiğini bilirim.	(1)	(2)	(3)	(4)	(5)
2.	Doğru cevabı bilsem de bilmesem de, derslerde sorulan sorulara cevap verme ihtiyacı hissederim.	(1)	(2)	(3)	(4)	(5)
3.	Arkadaşlarımın zorlandığı ders veya konularda onlara yardım etmek isterim.	(1)	(2)	(3)	(4)	(5)
4.	Derste herhangi bir soruya cevap veremediğimde üzülürüm.	(1)	(2)	(3)	(4)	(5)
5.	Derslere veya sınavlara çalışmadan önce çalışma planı yaparım.	(1)	(2)	(3)	(4)	(5)
6.	Öğrendiğim yeni şeyleri arkadaşlarımla paylaşırım.	(1)	(2)	(3)	(4)	(5)
7.	Daha sonra da kullanabilmek için düzenli olarak notlar tutarım.	(1)	(2)	(3)	(4)	(5)
8.	Uzaktan gerçekleştirilen derslerde ve sınavlarda başarılı olmak için ders çalışmam gerektiğini bilirim.	(1)	(2)	(3)	(4)	(5)
9.	Konuları öğrenmede daha başarılı olmak için farklı yollar denerim.	(1)	(2)	(3)	(4)	(5)
10.	Uzaktan işlenen konuları anlamak için çaba harcarım.	(1)	(2)	(3)	(4)	(5)
11.	Sanal sınıfın düzenini bozmamak için davranışlarıma ve tepkilerime dikkat ederim.	(1)	(2)	(3)	(4)	(5)
12.	Daha iyi bir öğrenme ortamı için, sanal sınıfta bulunan herkesin sınıf kurallarına uyması gerektiğini düşünürüm.	(1)	(2)	(3)	(4)	(5)
13.	Gördüğüm konuları tekrar ederek bir sonraki derse hazırlıklı katılırım.	(1)	(2)	(3)	(4)	(5)
14.	Anlayamadığım konuları dijital imkânları kullanıp araştırarak öğrenmeye çalışırım.	(1)	(2)	(3)	(4)	(5)
15.	Uzaktan işlediğimiz konuları daha iyi öğrenebilmek için farklı kaynaklardan soru çözerim.	(1)	(2)	(3)	(4)	(5)
16.	Sanal sınıfta öğrenme sürecinde diğerleriyle etkileşimde bulunmaya gayret ederim.	(1)	(2)	(3)	(4)	(5)
17.	Ders için bana verilen ödevleri istenilen biçimde yaparım.	(1)	(2)	(3)	(4)	(5)
18.	Sanal sınıfta derslere zamanında giriş yapmaya özen gösteririm.	(1)	(2)	(3)	(4)	(5)
19.	Dersle ilgili kullanmam gereken araç-gereç ve materyalleri düzenli olarak yanımda bulundurmaya çalışırım.	(1)	(2)	(3)	(4)	(5)
20.	Ödevlerimi ertelemeden zamanında yaparım.	(1)	(2)	(3)	(4)	(5)
21.	Konuları öğrenirken her birine yeterli çalışma süresi ayırırım.	(1)	(2)	(3)	(4)	(5)
22.	Uzaktan yapılan dersin eğiticisi ile sürekli iletişim halinde olmaya çalışırım.	(1)	(2)	(3)	(4)	(5)
23.	Ders çalışırken zamanı etkili kullanmaya çalışırım.	(1)	(2)	(3)	(4)	(5)
24.	Çalışırken en çok zorlandığım konulara daha fazla vakit ayırırım.	(1)	(2)	(3)	(4)	(5)
25.	Arkadaşlarımdan birisi öğretmene soru sorduğunda öğretmenin cevabını dikkatle dinlerim.	(1)	(2)	(3)	(4)	(5)
26.	Ödevlerimi günü gününe yaparım.	(1)	(2)	(3)	(4)	(5)
27.	Ödevlerini yapamadıklarında, arkadaşlarıma elimden geldiğince destek olmaya çalışırım.	(1)	(2)	(3)	(4)	(5)
28.	Sanal sınıfta bizden dersle ilgili bir görev istendiğinde, onu yapmaya gönüllü olurum.	(1)	(2)	(3)	(4)	(5)
29.	Uzaktan gerçekleştirilen derslere devamlı olarak erişim sağlama isteği duyarım.	(1)	(2)	(3)	(4)	(5)
30.	Uzaktan öğrenme sürecinin daha verimli olabilmesi için gerekli olanakları sağlamaya çalışırım.	(1)	(2)	(3)	(4)	(5)
31.	Dersle ilgili bana verilen görevleri en iyi şekilde yapmaya özen gösteririm.	(1)	(2)	(3)	(4)	(5)
32.	Uzaktan da olsa yeni bir şey öğrenmek benim için çok önemlidir.	(1)	(2)	(3)	(4)	(5)
33.	Uzaktan eğitim gerçekleştirilirken kendi öğrenme sürecimi başarıyla düzenlerim.	(1)	(2)	(3)	(4)	(5)
34.	Dersle ilgili uzaktan eğitim etkinliklerine katılmamın öğrenmeme katkı sağlayacağını düşünürüm.	(1)	(2)	(3)	(4)	(5)
35.	Dersin eğiticisinden dönüt alabilmek için çaba harcarım.	(1)	(2)	(3)	(4)	(5)