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OBJECTIVES

The main objectives of the Journal are:
- To initiate, conduct, and support research in psycho-educational fields of knowledge;
- To assemble all who are interested in these fields for an exchange of ideas and experiences;
- To disseminate research findings;
- To provide a database for members and researchers.

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What are the Effects of Students' Preferences on Choosing Religious and other Schools in Turkey?

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Abstract

In this study the differences between students who preferred to study in Islamic high schools (Imam Hatip) and other high schools in terms of the following issues were examined: a) whether or not students were religious b) whether or not students' parents were religious c) whether or not parents lived in rural areas or in the city d) parents' income level e) students' basic education (grades 1-8) academic achievement f) gender. The study group comprised 500 high school students: 322 students studying at Islamic high schools (Imam Hatip), and 178 students studying at other high schools. Quest Religious Orientation Scale and Islamic Religious Affinity Evaluation Scale were used to collect data. The findings showed that Islamic high school (Imam Hatip) students had more affinities towards religion. It was also found that the parents of the majority of Islamic high school (Imam Hatip) students lived in rural areas. These students had the tendencies in having dogmatic beliefs instead of questioning and improving their way of looking at religion. Especially students who preferred Islamic high schools (Imam Hatip) were found to be low academic achievers in basic education. It was also found that male students had more religious affinities compared to female students. The latest regulations by HEC (Higher Education Council) to decrease students' interests for Islamic high schools (Imam Hatip) did not only seriously affect students who preferred these highs schools but also students who preferred to go to other high schools. It also decreases the ratio of vocational and technical education institutions which perform educational processes effectively in the 21st century.

Keywords: Islamic high school, Imam Hatip, Vocational School, Islamic piety, religion tendency

Introduction

Being active in a field, producing something for the benefit of others and doing it for the purpose of attainment form the basis of professions (Kuzgun, 2000). Professions can be defined as activities which are based on systematic skills and knowledge acquired through education. The rules of professions are determined by the society. Profession is also the most important source of one's identity. Professions help individuals gain respect from others, having contact with people, having a good status in the society and feeling important.

If a person prefers to be in a profession that involves interesting activities, his interest in that profession may positively affect his motivation. Professional values are related with job satisfaction attained through factors such as income, reward etc. Professional values can be classified as intrinsic and extrinsic. Intrinsic values constitute job-related factors such as improving skills, creativity, intriguing job activities. On the other hand extrinsic values are related with values such as income, job safety, recognition, reward etc. which are affected by the physical job factors (Ginzberg, 1972).

People who want to choose their profession usually put job values in order of importance and choose their profession accordingly. People's expectancies from a profession vary depending on the variables such as job, age, socio-economic status and gender (Piskin, 2007) Therefore students before should be tested and given information about professions and guided to choose their high schools according their choice of profession. Yet students choose their high schools under the influence of many psycho-social and economic factors (Splete and Freeman-George, 1985; Naylor, 1986, Robberts, 2002). In Eastern societies students are affected by their parents and social environment and choose to go to high schools for the profession which they are not interested at all (Piskin,

2002). Students also work in professions which do not match with their field of study. In this case education only serves for improving individual's knowledge but nothing more.

In contemporary Turkish education system there are various types of high schools (general high schools, Technical high schools, fine arts high schools, teacher schools, super high schools, Anatolian high schools, Imam-Hatip high schools, Sports high schools, Girl's high schools, Science high schools). It is possible to divide these schools into two groups according their characteristics. General high schools which prepare students for higher education are in the first group while vocational and technical schools form the second group. Imam-Hatip High school which is one of the vocational and technical high schools gives religious education and offer programs for training reverends.

Entrance criteria for Higher Education institutions are determined by CHE (Council of Higher Education) (OSYM, 2007). Students who graduate from general high schools are offered high composite score which makes it easier for their enrolment in universities. On the other hand students, who graduate from vocational and technical high schools, are given low composite score because it is thought that they do receive high quality of education in these schools. Therefore these students have more difficulty entering universities.

In Turkey there are many job opportunities for graduates of vocational and technical high schools both in private and public sector. Yet it is too difficult for graduates of Islamic high school (Imam Hatip)s to find jobs in private sector, because in our country religion related jobs are run by the public sector. Parents prefer to send their children to Islamic high school (Imam Hatip)s because they want their children to get "true knowledge of Islamic religion". Besides there is a social and political pressure on Islamic high school (Imam Hatip) graduates to enrol in universities. This situation has been considered as a serious social and educational problem. There is a common view that the majority of the students come from parents of low socio-economic status who reside in rural areas and that these families and their children have high religious affinities. Yet there is no any research studies confirming these views. Therefore this study aims to find if there is any difference between students who prefer to study in Islamic high schools (Imam Hatip) and students who prefer to study in other high schools in terms of religious affinity, family structure and academic achievement.

Method

Study Group

The study group comprised 500 high school students. 322 students studying at Islamic high schools (Imam Hatip), and 178 students studying at other high schools. 135 of these students are female and 365 of them are male and their age average is 16,5.

Data Collection Instruments

Quest Religious Orientation Scale: In this study Maltby and Day's (1998) Quest Religious Orientation Scale which was adapted from Batson and Schoenrade's (1991a, 1991b) original Quest Religious Orientation Scale was utilized. The scale had 12 items. Scoring for the items is as follows: 1= No, 2= I don't know, 3= Yes (Shaw & Joseph, 2004). Translation of the scale into Turkish and reliability and validity tests of the scale were made by "Yazar" (2005). Islamic religion in Turkey does not encourage questioning. Parents have a dogmatic way of teaching their children about Islam. Therefore, in the original scale the high scores imply high religious orientation, while in the Turkish culture low scores show high religious orientation.

*Islamic Religious Affinity Evaluation Scale:*This scale was developed by "Yazar" (2005) to assess Islamic religious affinity. The scale had 11 questions with three levels ("Never"=1, "Sometimes"=2, "Always"=3). Test-retest correlation (r) was found to be 0.93 and Cronbach alpha coefficient was found to be 0.93. Similar scale reliability correlation with the scale developed by Karaca (2000) was found to be meaningful: r=0.12 (p<0.001). High scores show high Islamic religion affinity. Besides, the participants who scored 23 and above were considered religious while the participants who scored 22 and below were considered non-religious. The scale had questions on the following subjects: a) going to the mosque b) Friday prayers c) praying d) starting a work with bismillah e) fasting f)believing in God g) being covered h) reading Koran i) saying the shahadah (The Shahadah is the Muslim declaration of belief in the oneness of God and acceptance of Muhammad as his final prophet) j) considering one self as religious.

Findings

In this study meaningful differences were found between the students who study at Islamic high school (Imam Hatip) and other high school students (χ^2=23.01, p<.05). 93 % of the Islamic high school (Imam Hatip) students (n=299) had religious affinities while in other high schools 78% of the students had religious affinities. These findings show that students who preferred to study at Islamic high school (Imam Hatip) had high Islamic religious affinities.

Meaningful differences were found between Islamic high school (Imam Hatip) students and other high school students in terms of parents' places of residence (χ^2=110.75, p<.05). 57% of the Islamic high school (Imam Hatip) students (n=184) and 9% of other high school students (n=16) reside in villages or towns. These findings show that students who preferred to study at Islamic high school (Imam Hatip) come from rural areas. No meaningful differences were found between Imam Hatip High school students and other high school students in terms of students' gender (χ^2=2.13, p>.05). This finding shows that gender does not play an important role in students' high school preferences. Meaningful differences were found between Islamic high school (Imam Hatip) and other high school students in terms of parents' income (χ^2= 87.61, p<.05). Parents of 71% of students (n=230) studying at Islamic high school (Imam Hatip) had low income level while parents of 38% of the students (n=67) had low income level. These findings show that students who preferred Islamic high school (Imam Hatip)s came from parents with low income level.

Meaningful differences were found between Islamic high school (Imam Hatip) students and other high school students in terms of their basic education academic achievement (χ^2=19.68, p<.05). Basic education academic achievement of 28% of Islamic high school (Imam Hatip) students (n=89) is very low while academic achievement of 20% of the students is very good (n=65). On the other hand basic education academic achievement of 18 % of other high school students (n=32) is very low while 37% of them is very good (n=66). These findings imply that students who preferred Islamic high schools (Imam Hatip) have very low basic education academic achievement. No meaningful differences were found between Islamic high school (Imam Hatip) and other high school students' evaluation of their parents' religious orientation (χ^2= 1.49, p>.05). This finding shows that there is no difference between Islamic high school (Imam Hatip) and other high school students in terms of their way of perceiving their parents' religious orientation. 62 % of both Islamic high school (Imam Hatip) and other high school students thought that their parents had high religious orientation.

Table 1 *Findings related to religious high school and other high school students*

		Islamic high school		Other high school		
		N	%	N	%	χ^2
Religious Affinities						
	Low	23	7.1	39	21.9	
	High	299	92.9	139	78.1	23.01*
Places of residence						
	Villages/towns	184	57.14	16	8.99	
	City	138	42.86	162	91.01	110.75*
Gender						
	Female	80	24.84	55	30.89	
	Male	242	75.16	123	69.11	2.13
Income level						
	Very low	230	71.4	67	37.6	
	Low	79	24.5	54	30.3	87.61*
	High	13	4.0	57	32.0	
Academic achievement						
	Very low	65	20.2	66	37.1	
	Low	168	52.2	80	44.9	
	Good	75	23.3	30	16.9	19.68*
	Very good	14	4.3	2	1.1	
Religious orientation of parents						
	Low	9	2.8	2	1.1	
	Medium	113	35.1	64	36.0	1.49
	High	200	62.1	112	62.9	

(*) $p<.05$

Comparisons related to Islamic religious affinities and religious orientations are shown in Table 2, and Table 3.

Table 2 *Means and standard deviations of Islamic Religious Affinity and Religious Orientation*

		Islamic Religious Affinity			Religious Orientation		
	N	M	Sd	t	M	Sd	t
School							
Imam Hatip high school	322	26.49	2.85		20.66	9.01	
Other high schools	178	23.90	2.72	9.881*	21.06	4.65	0.553
Gender							
Female	135	24.80	2.47		20.21	4.89	
Male	365	25.86	3.21	3.463*	21.01	8.56	1.035
Place of Residence							
Village-town	200	26.71	3.10		21.19	10.86	
City	300	24.82	2.80	7.075*	20.55	4.62	0.898

* $p< 0.05$ significant.

Meaningful differences were found between Islamic high school (Imam Hatip) and other high school students in terms of their religious affinities (t=9.881, p<.05). The average of Islamic high school (Imam Hatip) students' religious affinities is higher than that of other high school students (Table 2). This finding shows that religious affinities of Islamic high

school (Imam Hatip) students are higher than those of other high school students. No meaningful differences were found between Islamic high school (Imam Hatip) and other high school students in terms of their religious orientation (t=0.553, p>.05). This finding implies that religious orientation of both Islamic high school (Imam Hatip) and other high school students is in the same level.

Table 3. *Analysis of Variance for related to Islamic religious affinity and religious orientations*

	N	Islamic Religious Affinity			Religious Orientation		
		M	Sd	F	M	Sd	F
Parents' Income Level							
Very low	297	26.03	3.05		21.22	9.29	
Low	133	25.23	2.84	11.05*	20.01	4.39	1.16
High	70	24.26	3.12		20.57	4.89	
Total	500	25.57	3.07		20.80	7.74	
Student Perception of their parents' religious orientation							
Low	11	26.27	4.20		23.63	6.78	
Medium	177	25.03	3.03	4.12*		21.83	11.28
3.54*							
High	312	25.84	3.00		20.12	4.62	
Total	500	25.57	3.07		20.80	7.74	
Students' basic education level academic achievement							
Very low	131	25.44	2.59		19.34	4.76	
Low	248	25.47	3.31		21.52	9.82	
Good	105	26.03	3.06	1.01	21.00	4.83	2.33
Very good	16	25.25	2.67		20.31	4.38	
Total	500	25.57	3.07		20.80	7.74	

* p<.05 significant

Meaningful differences were found between female and male students in terms of their Islamic religious affinities (t=3.463, p<.05). The average of male students' Islamic affinities is higher than those of female students (Table 2). This finding shows that Islamic affinities of male students are higher than those of female students. No meaningful differences were found between female and male students in terms of their religious orientation (**t**=1.035, p>.05). This finding shows that both female and male students have the same level of religious orientation.

Meaningful differences between students' Islamic religious affinities and their parents' places of residence (t=7.075, p<.05) were found. The average of Islamic religious affinities of students whose parents reside in villages or towns is higher than those of students whose parents reside in the city (Table 2). This finding implies that religious affinities of students whose parents reside in villages or towns are higher than those of students whose parents reside in the city. No meaningful differences were found between students' religious orientation in terms of their parents' places of residence (t=0.898, p>.05). This finding shows that students whose parents reside in village-town and students whose parents live in the city have the same level of religious orientation.

In order to determine if there is any difference between students' Islamic religious affinities in terms of their parents' income level, LSD Post Hoc test was conducted. The results showed that students whose parents had very low income level (M=26.03, s.d=3.05)

had higher Islamic religious affinity compared to those whose parents had low income level (M=25.23, s.d.=2.84) and those whose parents had very high income level (M=24.26, s.d.=3.12). No meaningful differences were found between students' religious orientation in terms of their parents' income level ($F_{(2,497)}$=1.16, p>.05). LSD Post Hoc test showed meaningful differences between students' perceptions of their parents' religious orientation and their Islamic affinities ($F_{(2,497)}$=4.12, p<.05). The test results showed that students who perceived their parents' religious orientation high (M=25.84, s.d.=3.00) had higher religious affinities than those who perceived their parents' religious orientation as moderate (M=25.03, s.d=3.03). The LSD Post Hoc test showed meaningful differences between students' religious orientation and the way they evaluated their parents' religious attitudes ($F_{(2,497)}$=3.54, p<.05). The test showed that students who evaluated their parents' religious attitudes high (M=20.12, s.d.=4.62) had lower religious orientation than those who evaluated their parents' religious attitudes as moderate (M=21.83, s.d.=11.28). This also shows that these students do not satisfactorily question their religious beliefs. The post hoc analysis showed no meaningful differences between students' basic education level academic achievement and their religious affinities ($F_{(3,497)}$=1.01, p>.05). The analysis also showed no meaningful differences between students' basic education level academic achievement and their religious orientations ($F_{(3,497)}$=2.33, p>.05).

Discussion

This study showed that the majority of Imam Hatip High school students are the children of rural families. These students had tendencies of dogmatic beliefs instead of questioning their religious beliefs. Therefore it could be argued that Islamic high school (Imam Hatip) students had more religious affinities than other high schools students. Considering the fact that the perception of these students on their parents' religious beliefs is relatively higher compared to other high school students, this finding is not a surprise. It could be said that parents whose religious affinities are high can ask their children to conform to religious values. Low income level can also affect this situation. It could also be argued that in the future these students can have dilemma between their religious beliefs and scientific thinking even if they successfully complete their higher education.

The study showed that students who preferred Islamic high school (Imam Hatip) come from low income families. Low income level may also be an indication of low education level. This could also show that these students have fatalistic attitudes. Besides, students who preferred Islamic high school (Imam Hatip)s had low basic education level achievement. Islamic religious affinities of male students were found to be higher than those of female students.

In Turkey as the income level decreased people had more Islamic affinities because they saw Islam as the only way of salvation. An extreme inclining towards religion brings bigotry. It could be argued that if income level gets higher inclining towards religion will also decrease. It is therefore important that the government should accelerate economic investments in the Eastern part of Turkey. Besides, the latest regulations by HEC (Higher Education Council) to decrease students' interests for Islamic high school (Imam Hatip)s did not only seriously affect students who preferred these highs schools but also students who preferred to go to other high schools.

In Turkey the ratio of vocational and technical schools compared to other high schools is 31% (MONE Statistics, 2007). Eventually this situation increases inequalities in education and attenuates vocational technical education. It also decreases the ratio of vocational and

technical education institutions which perform educational processes effectively in the 21st century.

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The Effectiveness of a Phonological Awareness Training Intervention on Pre-reading Skills of Children with Mental Retardation

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Abstract

Phonological awareness is the ability to manipulate the individual speech sounds that make up connected speech. Little information is reported on the acquisition of phonological awareness in special populations. The purpose of this study was to explore the effectiveness of a phonological awareness training intervention on pre- reading skills of mentally retarded children. A total of 47 children mental retardation participated in this study. The sample was randomly divided into two groups; experimental (n= 24, 19 boys, 5 girls)and control (n= 23 , 20 boys and 3 girls). ANCOVA and Repeated Measures Analyses were employed for data analysis. Findings from this study indicated the effectiveness of the program employed in improving pre- reading skills in the target children.

Keywords. Phonological awareness, pre-reading skills, mentally retarded children

Introduction

Phonological awareness refers to the ability to perceive and manipulate the individual speech sounds, known as phonemes, that make up connected speech (Yopp & Yopp, 2000). Skill in phonological awareness entails the analysis of speech sounds as they appear in isolation and/or in the context of words, phrases, and sentences (Neuman, Copple, & Bredekamp, 2000). Speakers generally do not attend to individual phonemes as they listen to or produce speech; rather, they process phonemes automatically while giving direct attention to the meaning of the message conveyed (Adams, Foorman, Lundberg, & Beeler, 1998). Phonological awareness involves the acquisition of a variety of metalinguistic insights that relate to understanding the sound structure of language, including (a) identifying phonemes in the context of syllables and words; (b) blending phonemes to form syllables, words, and sentences; (c) segmenting wholes into parts (i.e., sentences into words and words into constituent syllables or phonemes); (d) analyzing word parts (e.g., if /b/ is deleted from bat, the resulting word is at); and (e) analyzing sound correspondences within groups of rhyming words (DiSanto, Kraft, Lentini, & Sivitz, 2000; International Reading Association [IRA], 2000; Stone, Merritt, & Cherkes-Julkowski, 1998; Yopp & Yopp, 2000).

Phonological processing involves a certain kind of knowledge about words- that they are made up of individual speech elements, which can be divided into segments of sounds smaller than a syllable. It is one aspect of the spoken language system which is important to early reading . Phonological processing is an insight about oral language, in terms of understanding that words are composed of sequences of small sounds called phonemes. In other words, phonological processing is a linguistic awareness that enables the individual to make use of information about speech and sound structure of the language (Mourad Ali , 2007) .

So, present research study seeks to explore the effectiveness of a phonological awareness – based program in improving pre-reading skills in children with mental retardation. It addresses the following questions:

1- Are there differences in post – test scores mean between control and experimental groups on pre-reading test ?
2- If the programme is effective, is this effect still evident a month later?

Literature review

Phonological Awareness

Definition of Phonological Awareness

Phonological awareness can be defined as the ability to define and manipulate the sound structure of oral language (Layton & Deeny,2002). Phonological awareness acquisition involves the learning of two things. First, it involves learning that words can be divided into segments of sound smaller than a syllable. Second, it involves learning about individual phonemes themselves (Torgesen, 2000). The awareness of phonological structure of a word helps children to draw connections between the spoken form of a word and its written representation (Gillon, 2004).

Level of Phonological Awareness

Phonological awareness is a general ability that has multiple dimensions varying in difficulty (Smith, Simmons &Kameenui, 1998). Gillon (2004)describes phonological awareness in terms of three different levels. They are onset-rime awareness, syllable awareness and phoneme awareness.

Onset-rime Awareness

Adams (1990) describes the rime as the obligatory part of the syllable consisting of its vowel and any consonant sounds that come after it, whereas onset consists of any consonant sounds that precede the vowel. Children are considered to have awareness of onset-rime if they can analyze syllables into onset and rime units in an oddity tasks (Treiman, 1992).

Syllable Awareness

Adams (1990) defines syllable awareness as the ability to detect the smallest unit of speech that can be produced in isolation. Some linguists suggest that children develop syllable awareness before the development of other phonological skills such as on-set rime and phonemic awareness (Adam, 1990; Tingley, Dore, Parsons, Campbell & Bird 2004; Treiman,1992).

Phonemic Awareness

Gillon (2004) defines phoneme as the smallest unit of sound that influences the meaning of a word. Adams (1990) states that the awareness of phonemes includes the abilities to segment, rearrange, and substitute them one for the other. Many researchers claim that awareness of phonemes is critical for learning an alphabetic writing system (Sawyer & Fox, 1991; Treiman, 1992; Adams, 1990; Cook & Bassetti 2005).In addition, Torgesen (2000) suggests that although phonemic decoding skills should never be considered the end goal of reading, research now shows that, for most children, these skills are a critical step along the way toward effective reading skills.Share & Stanovich (1995) point out that phoneme awareness performance is a strong predictor of long-term reading and spelling success and can predict literacy performance more accurately than variables such as intelligence, vocabulary knowledge, and socioeconomic status.

Phonological Awareness Training

According to Oktay & Aktan (2002),phonological ability is not accompanied by an innate ability, which allows children to manipulate phonological elements intentionally. In addition, Cassady and Smith (2004) suggest that children should be trained to blend body-codas first,then to progress to more phonologically difficult blending tasks such as onset-rimes and phonemes. Study by Cheung et al. (2001) also suggests the important role of

phonological training in reading acquisition. They point out that bilingual children develop phonological awareness earlier, but in the end, monolingual children reach the same level once they receive phonological skill training in reading development. However, Durgunoglu (2002) argues that children can gain insight into phonological skills if they have had exposure in their L1.

Assessment of Phonological Awareness

Treiman (1992) states that,onset/rime tasks are easier than other kinds of phonological awareness tasks. On the other hand, onset clusters cause substantial difficulty in the phoneme deletion task. Moreover, the analysis of syllables into phonemes is also difficult. Daly et al. (2005) arrange phonological awareness skills according to their level of difficulty. Skill with rhyming or identifying similar word beginnings or endings is much easier than the skill that requires greater, or more explicit, manipulation of sounds such as segmenting, blending and deleting sounds. Torgesen (2000) suggests three different tasks for assessing phonological awareness. They are sound comparison tasks, phoneme segmentation tasks and phoneme blending tasks. Sound comparison measures are easier and are sensitive to emergent levels of phonological awareness, whereas segmentation and blending measures are sensitive to differences among children during later stages of development involving refinements in explicit levels of awareness. Measures of sensitivity to rhyme are less predictive of reading disabilities than those measures that ask children to attend to individual phonemes.

Relationship between Phonological Awareness and Reading Acquisition

Reading requires two different skills: children need to know how to identify printed words and how to comprehend written material (Torgesen, 2000). Torgesen summarizes the importance of phonological awareness in acquiring accurate word reading skills. First,phonological awareness helps children understand the alphabetic principle. Second, it helps children realize the regular ways that letters represent sounds in words. Lastly, it makes it possible to generate possibilities for words in context that are only partially sounded out. Moreover, as Koda (2005) states, poor readers uniformly are handicapped in a wide variety of phonological tasks. Furthermore, Metsala & Ehri (1998) state that comprehension is a meaning-construction process, which involves integral interaction between text and reader. Extracting phonological information from individual words constitutes one of the first and most important steps in this endeavor. Also phonological skills have a direct, and seemingly causal relationship with reading ability knowledge of letter patterns and their linkages to sounds facilitates rapid automatic word recognition; such knowledge evolves gradually through cumulative print-processing experience; and limited word-recognition skills tend to induce over reliance in context (p.254).

The failure of children to develop early reading skills that contribute to academic and social success has turned out to be a national concern. Poor reading skills result in lower overall academic achievement.

The phonological awareness plays a crucial role in reading and literacy. As the key component that makes the difference between good readers and poor readers, it is often referred to as a predictor to subsequent reading achievement. Although training in phonological awareness skills facilitates positive gains in phonemic awareness, decoding, and spelling, it requires activities characterized as explicit, comprehensive, intensive and supportive.

Phonological Awareness and children with mental retardation

Mental retardation is defined as an intellectual functioning level at or below 70–75 as measured by standardized IQ tests, such as the Wechsler Intelligence Scale for Children—Third Edition (WISC, Wechsler, 1991) or the Stanford Binet Intelligence Scale, Fourth Edition (Thorndike, Hagan, & Sattler, 1986), plus significant limitations in communication, self-care, home living, social, leisure, and health and safety skills; self-direction; functional academics; community involvement; and/or work (Cegelka & Prehm, 1982). Children with mental retardation typically manifest some degree of phonological deficit (Reed, 1994) that may interfere with their realization of the meaning of print (Swank & Catts, 1994).

Identifying and analyzing phonemes are abstract metalinguistic processes that may be difficult for children with mental retardation for several reasons: (a) producing and listening to individual speech sounds may be unfamiliar, (b) phonemes produced in isolation may not sound similar to phonemes coarticulated to form words, (c) some children with mental retardation may not understand instructional terms such as "sounds" or "word parts" (Hoogeveen et al., 1989), (d) they may have difficulty encoding phonological information into memory, and/or (e) they may have difficulty retrieving phonological codes from memory (Catts, 1986). Notwithstanding, several authors recounted successful phonological awareness interventions for children with mental retardation.

These include Conners (1992), who discussed sound discrimination and blending sounds; Hoogeveen et al. (1989), who reported on the isolation of final sounds in words and segmenting sounds in words; Hoogeveen and Smeets (1988), who explored blending sounds to form words; and Kabrich and McCutchen (1996), who inquired into the skills needed for detecting phonemically similar words.

Method

Participants

Children participants selected from two schools for children with mental retardation, called Al Tarbya AL Fekrya schools. Participants' IQ scores were obtained by the school's administration of either the WISC (Wechsler, 1991). The sample was randomly divided into two groups; experimental (n= 24; 17 boys and 7 girls) and control (n= 23; 18 boys, 5 girls).

The two groups were matched on age, IQ ,and Word Recognition Test Scores . Table 1 shows means, standard deviations, t- value, and significance level for experimental and control groups on age (by month), IQ, and pre-reading Test Scores (pre-test)

Table 1. *Pre-test Means, standard deviations , t- value , and significance level for experimental and control groups on age (by month) , IQ, and pre-reading Test Scores.*

Variable	Group	N	M	SD	t	Sig.
Age	Experimental	24	108.1	2.96	-.189	-
	Control	23	109.26	3.01		
IQ	Experimental	24	78.34	4.45	-.221	-
	Control	23	79.89	4.24		
PR skills	Experimental	24	6.82	2.65	-.539	-
	Control	23	6.54	2.32		

Table 1 shows that al t- values did not reach significance level . This indicated that the two groups did not differ in age , IQ , and pre- reading Test Scores (pre-test) .

Setting

The study took place in two schools for children with mental retardation, called Al Tarbya AL Fekrya schools.

Measure

Pre-reading skills scale for children (Mourad Ali , 2008). The scale consists of six sub-sales as follows:

Letter Identification (4 items) . This test requires children to identify the letter from a group in each card that the instructor points to (e.g . what is this letter ; S ….etc).

Rhyming word Recognition (4 items). This test requires children to identify the two words that rhyme from three word (e.g. cat- dog- sat).

Blending Body-Coda (4 items). This task assesses the ability to form a word when it has been segmented into the body and coda. Body is the part of the word starting from the beginning and carrying through the vowel, while coda is the part of the word that comes after the vowel (e.g. sho/p).

Phoneme substitution (4items). This subtest requires children to replace the first phoneme sound of a given word with a new sound (e.g. jeep to /k/).

Sound comparing (4 items). This subtest requires children to identify the to words that sound the same (eg. Man – sun – can).

Sound – blending (4 items). This task requires children to synthesizes or blend each sound in the word (e.g. /k/ /i/ /t/ /e/).

Test reliability

The first issue of reliability was ensuring that The scale total score was a reasonable assessment of one broad construct of pre- reading skills despite the use of six subtests. To test this, Cronbach's alpha statistics was first employed . The result demonstrated the scale produced patterns of responses that were highly consistent, $\alpha = 0.90$.

Test validity

Ten professors of psychology were given the scale to rate the items. Agreement proportions were ranging from 90% to 100% .

Test scoring

The score on each item ranging from 0 to 1 score , and the total score on the scale ranging from 0 to 24 scores .

Procedure

Participants were selected, then pretest data were collected using the pre- reading skills test. The classroom PA training program was conducted by the second author with the experimental class in one large group for 5 weeks with 20 minute sessions conducted three times a week .A variety of fun, play-based phonological activities were used with the class that incorporated the spectrum of PA skills (e.g., rhyming, sound/syllable matching, sound/syllable isolation, sound/syllable blending, sound/syllable addition or substitution, and sound/syllable segmentation).

The children participated by singing, listening, answering questions, and following directions. The following is a list of the PA activities addressed during training:
1. Sound Matching/Sound Identification
2. Rhyming Activities
3. Sound Addition or Substitution Activities
4. Sound/Syllable Blending Activities

5. Sound/Syllable Segmentation Activities.

The second author started with the earlier developing PA skills, such as matching and rhyming, and moved throughout the continuum of PA skills. These activities were rotated from easiest to hardest throughout the 5 week training period. At the end of the study, the posttest data were collected again   using the same measure to determine the effectiveness of the PA training.

Experimental Design

An experimental pretest-posttest control-group design was used in this study. In this mixed design, two groups are formed by assigning half of the participants to the experimental group and half to the control group. Both groups were pretested and posttested in the same manner and at the same time in the study. The bivalent independent variable was the PA training and it assumed two values: presence versus absence of PA training. The dependent variables were the gains in scores on pre- reading skills test.

Results

Table 2 shows data on ANCOVA analysis for the differences in post- test mean scores between experimental and control groups in pre- reading skills test scores . The table shows that the (F) value was (285.166) and it was significant value at the level (0.01).

Table 2. *ANCOVA analysis for the differences in post- test mean scores between experimental and control groups in pre- reading skills test scores*

Source	Type 111 sum of squares	df	Mean square	F	Sig.
Pre	5.814	1	5.814		
Group	1123.316	1	1123.316	285.166	0.01
Error	173.323	44	3.939		
Total	1297.277	46			

Table 3 shows T test results for the differences in post- test mean scores between experimental and control groups in pre- reading skills test scores . The table shows that (t) vale was (16.75). This value is significant at the level (0.01) in the favor of experimental group. The table also shows that there are differences in post- test mean scores between experimental and control groups in pre- reading skills test scores in the favor of experimental group.

Table 3. *T. test results for the differences in post- test mean scores between experimental and control groups in pre- reading skills test scores*

Group	N	Mean	Std. deviation	t	Sig.
Experimental	24	16.583	2.44	16.75	0.01
Control	23	6.826	1.37		

Table 4 shows data on repeated measures analysis for pre- reading skills test. The table shows that there are statistical differences between measures (pre- post- sequential) at the level (0.01).

Table 4. *Repeated measures analysis for pre- reading skills test*

Source	Type 111 sum of squares	df	Mean square	F	Sig.
Between groups	1351.970	1	1351.970	643.039	0.01
Error 1	94.611	45	2.102		
Between Measures	955.545	2	477.772	136.724	0.01
Measures x Groups	647.176	2	323.588	92.601	0.01
Error 2					
	314.498	90	3.494		

Table 5 shows data on Scheffe test for multi-comparisons in pre- reading skills test . The table shows that there are statistical differences between pre and post measures in favor of post test, and between pre and sequential measures in favor of sequential test, but no statistical differences between post and sequential test.

Table 5. *Scheffe test for multi-comparisons in pre- reading skills test*

Measure	Pre M= 6.82	Post M= 16.58	Sequential M= 6.48
Pre	--	--	--
Post	10.41*	--	--
Sequential	966*	0.75	--

Discussion

The main objective of the present study was to explore whether there were differences in post – test scores mean between control and experimental groups on pre – reading skills . The study also examined if the program was effective, if this effect was still evident a month later.

The results of this study as revealed in tables 3 and 5 show that the phonological awareness program was effective in improving the pre- reading skills of children in experimental group, compared to the control group whose subjects did not receive such an intervention.

The present study comes to try to resolve the conflict. Many researchers are still trying to answer the "chicken and egg" question of which came first. Is PA a prerequisite for learning to read or does PA develop as a consequence of being exposed to reading instruction (Yopp, 1992). A great majority of research conducted supports the idea of PA as a powerful predictor of early reading achievement.

This study supported other research findings in the literature about teaching children at-risk for reading disabilities and future academic failure (Vellutino & Scanlon, 1987; Wagner, et al., 1997). These children could benefit from a supplemental curriculum using appropriate sequence to train their phonological awareness, which is said to be a reliable predictor of future reading development. The effects of phonological awareness instruction have been addressed in previous research; however, this study contributed to the literature in several significant ways. First, it extended the participants to children as young as preschool and had implications that phonological awareness was teachable to younger children. Second, the results of this study indicated that children being considered at-risk for reading abilities and had not received any formal reading instruction are capable of improving their pre-literacy skills in preparation for their future reading. Finally, it is significant for educators to

work to prevent reading failure in young children. This study demonstrated that phonological awareness skills can be effectively instructed to preschool children better positioning them for reading success.

Worth mentioning is that students in the experimental group retained the learnt information for a long time even after the period of the program finished, and this indicates the training effect.

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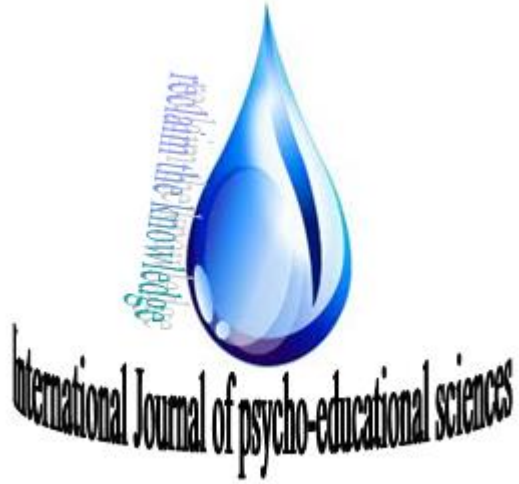
Teaching Languages and Its Affects on Sustainable Development: A New Idea; Language for Specific Purposes (LSP)

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Abstract

Language has a paramount role in the quest for development on human, social, political, technological and any other form of development. A paramount role because knowledge, which is the life wire of any development effort, is acquired through information. Information comes through communication powered by language. So, teaching language has a great importance on future sustainable development. Speaking and understanding the same language is vital for transferring the information which is necessary for building a sustainable development in the world. But not only teaching the foreign language but also teaching the foreign language for specific purposes has just come out as an idea in every field of development. The paper begins by defining the methods of effective language teaching methods and goes on defining the concept of English for Specific Purposes (ESP) and goes further to critically analyze the affects of language teaching on sustainable development. All ideas are supported by appropriate examples.

Key Words: Foreign Language, Foreign Language Teaching, Language for Specific Purposes, Sustainable Development.

Introduction

Language is one of the most important areas of human development. Human communication skills constitute the major characteristic that distinguishes him from other living things. More importantly, these skills are also what bring human beings together. Human development can only be sustained when people, individually and collectively, are exposed to new and greater opportunities that result in human potential realization. However, new opportunities arise only when human beings communicate with each other. For any meaningful and sustainable development, therefore, access to information is paramount. Meanwhile the main channel of information flow is communication thereby making communication a preeminent factor in developmental efforts. If effective communication is the taproot of development, then language related issues could not be toyed with since language enjoys the *sine qua non* [5] position in communication (Tuesday, 2011). Furthermore, language proficiency is considered to be a human capital and one can not ignore the fact that human capital development is a current need among all world citizens today. It is on the fore-going that we think any serious discourse on sustainable human development in the world should take into account the linguistic paradigm. In this paper, we will be discussing a dimension of Lingua Franca [6] learning known as language for Specific Purposes (henceforth LSP). Our focus will be on English which have acquired the status of official language in the world.

This paper begins by defining the concept of LSP, goes further to discuss the relation between sustainable development and LSP and also looks at the benefits of the latter to sustainable human development in the world. The paper ends with recommendations on the issue.

Sustainable Development

The concept of sustainable development has come to dominate the debate regarding economic development (Edwards-Jones et al., 2000). It has its origins in the Commission on Environment and Development which was formed by the UN in 1983 to investigate

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[5] *Sine qua non* or *condicio sine qua non* refers to an indispensable and essential action, condition, or ingredient.
[6] A lingua franca is a language systematically used to make communication possible between people not sharing a mother tongue, in particular when it is a third language, distinct from both mother tongues.

environmental issues regarding economic development. In 1987, the Commission published Our Common Future (also known as the Bruntland Report). This report is now acknowledged as a landmark publication in the development of environmental awareness and particularly the need for environmental concerns to be integrated into all aspects of successful development. The report defines sustainable development as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs'. The Earth Summit in 1992 reinforced the concept of sustainable development which has since become widely embraced and integrated into policies and procedures. There is a growing, global consensus that attempts to acknowledge the interests of future generations and other species. Central to sustainable development is how we use the Earth's natural resources and the processes by which they are transformed. This can be described in terms of capital.

Sustainable development is a new issue which has been being studied since 1990s. Because since late 80s technology is governing the world but on the other hand, sometimes technology damages the environment. So clean technology term has been gaining importance throughout the years. There are a lot of different definitions for sustainable development.

According to Hopwood (Hopwood, 2005), sustainable development, although a widely used phrase and idea, has many different meanings and therefore provokes many different responses. In broad terms, the concept of sustainable development is an attempt to combine growing concerns about a range of environmental issues with socio-economic issues.

O'Brein define the term like; the widespread rise of interest in, and support for, the concept of sustainable development is potentially an important shift in understanding relationships of humanity with nature and between people. (O'Brein, 2005).

Additionally, Jeffrey D. Sachs and Walter V. Reid wrote a definition on sustainable development on Policy Forum magazine in 2009 and they say; sustainable development means that economic growth that is environmentally sound. (Sachs and Reid, 2009).

Why does Sustainable Development encompass?

It is necessary to understand what sustainable development encompasses to form a relation between sustainable development and other issues.

Sustainable development encompasses a vast array of projects. The thing they all have in common is that they are designed to help the local and global community for the long term but still meet the needs of our present generation.

When planning a sustainable development project, in order to bring things back on track environmentally, we need to rely more on renewable energy sources like wind power and solar power. They are considered renewable because they are unlimited and don't pollute, unlike fossil fuels, wood, etc. However, sustainable development isn't just about the environment. It also provides steps for action that will create a better future for those of us who live on this planet aside from environmental issues. When you take a look at the bigger picture, sustainable development objectives include three interdependent components:

- Social issues
- Economic issues
- Environmental issues

At first you may wonder how these three categories are linked when it comes to sustainable living, but think about it. Let's take one issue - waste management. This includes both solid waste and sewage but for now we'll narrow it to solid waste. The Environmental

Protection Agency (EPA) states that the average American creates approximately 4.4 pounds of household garbage everyday. That translates to about 1,600 pounds per person, per year, and doesn't even take into account any waste you may generate at work. The question is, "What happens to that garbage?"

In most cases, it is picked up at your home and hauled away by a local waste management company. In some cases the garbage is sorted to see what can be recycled, but eventually, most of the waste ends up in a landfill or what is commonly referred to as a garbage dump. The problem is that our reliance on landfills for waste disposal does not look to the future. What will we do socially when we run out of room in the landfills? How will we afford to deal with it? It doesn't offer a solution socially, economically or environmentally. It is not a sustainable solution.

Definition of LSP Concept

The concept began and was limited to English language for several years before experts and theorists in other languages began to look at that direction. In fact, ESP dominates the available literature on LSP. The reason for this scenario might not be unconnected to the hegemonic status of English as the most widely distributed language of the world.

The term LSP is actually an umbrella term that applies to several different categories of language learning and teaching, which differ according to the learner's needs. The categorization of ESP provided by Robinson (1991) is adopted here to serve as a model for the categorization of LSP:
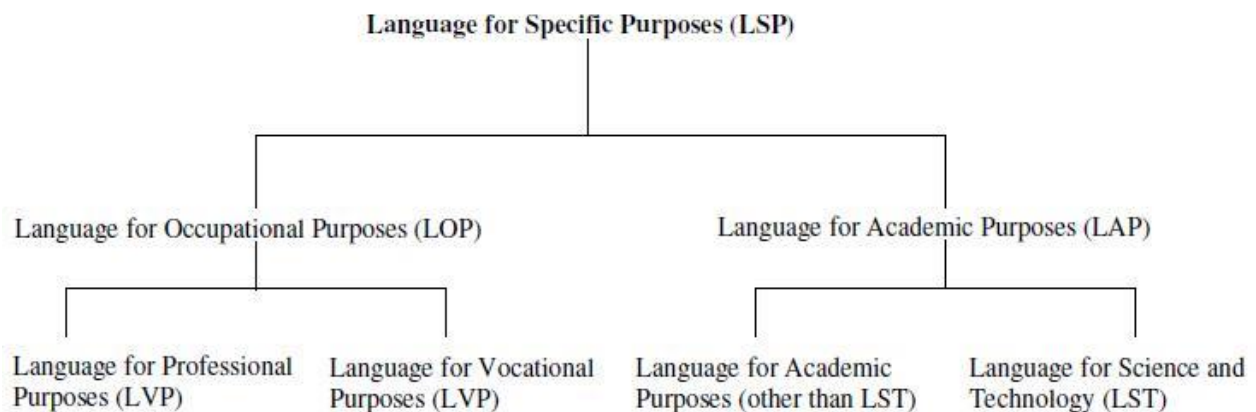
The above schema encompasses two types of instruction: Language for Occupational Purposes (LOP) and Language for Academic Purposes (LAP). While teaching Language for Occupational Purposes is targeted at individuals, such as pilots, hotel personnel, immigration officers, etc., who need particular languages to perform on the job, Language for Academic Purposes, on the other hand, is taught to students with the germane objective of equipping them with the common study skills, such as academic writing, listening to lectures, note-taking, making oral presentations in specific languages, in order that they may succeed in academic settings where languages different from their mother tongue or official languages are used for academic instructions. Specifically, LOP branches off into Language for Professional Purposes (LPP) and Language for Vocational Purposes (LVP). LAP, on its own part, is subdivided into Language for Science and Technology (LST) and LAP other than LST. This model, which can be applied to any language, clearly underscores the need for language teaching, which is aimed at satisfying specific needs of the learner (Tuesday, 2011).

Writing specifically about ESP, Hutchinson and Waters (1987) identify two key historical periods that gave birth to the teaching of LSP. According to them, the end of the Second World War heralded an era of unprecedented expansion in scientific, technical and economic activities on an international scale and as a result of the economic power of the United States; English became an invincible international language of science and economy. The second key period, as suggested by Hutchinson and Waters, has to do with the linguistic revolution in the late 1960s and the early 1970s.

During this period, a lot of researches were conducted on the ways in which language is used in real communication settings. With various and significant discoveries in the variables of English usage, the need to teach the specific 'Englishes' along side the traditional general English arose. If language in different situations varies, then structuring language instruction to meet the needs of learners in specific contexts is plausibly desirable. Consequently, English for Science and Technology (EST), the oldest form of LSP, came to life in the late 1960s and the early 1970s. Looking at it from the foregoing, one could clearly see why English has to dominate the other languages in the learning of LSP right from inception till date. Having illuminated the circumstances that gave birth to this paradigm of language teaching and learning there is need to discuss the basic characteristics that make it different from the teaching and learning of Language for General Purposes (Henceforth LGP).

In attempts to distinguish between LSP and LGP, Experts in the field of ESP which include Strevens (1988), Anthony (1997) and Dudley-Evans & St. John (1998) have commonly identified four absolute and seven variable characteristics of ESP which we shall adopt here as the basic characteristics of LSP:

I. Absolute characteristics of LSP

1. Designed to meet specified needs of the learner.

2. Relates in content (i.e. in its themes and topics) to particular disciplines, occupations and activities.

3. Centers on the language (grammar, lexis, and register), skills, discourse and genres appropriate to these activities.

4. Makes use of the underlying methodology and activities of the discipline it serves; (Strevens, 1988)

II. Variable Characteristics

1. Restricted as to the language skills to be learned (e.g. reading only).

2. Not taught according to any pre-ordained methodology.

3. May be related to or designed for specific disciplines.

4. May use, in specific teaching situations, a different methodology from that of general language.

5. Likely to be designed for adult learners, either at a tertiary level institution or in a professional work situation. It could, however, be for learners at secondary school level.

6. Generally designed for intermediate or advanced students.

7. Most courses assume some basic knowledge of the language system, but it can be used with beginners. (Dudley-Evans & St. John 1998)

Drawing from the source, which is ESP, several languages of the world are now having their own version of LSP. Thus, we now have French for Specific Purposes (FSP), German for specific Purposes (GSP), Arabic for Specific Purposes (ASP), Spanish for Specific Purposes (SSP), and Portuguese for Specific Purposes (PSP) etc. Since our study is aimed at sustainable human development in the world through a systematic approach to the teaching and learning of the languages of research and instructions, our focus will henceforth be on the foreign languages that affect the status in the world.

LSP and Sustainable Development

When we consider about our world it presents us huge variety of nature. Especially the continents like Africa, America there are a lot of natural beauty we can say. The sun shines everyday which is the bigest energy source for the world. While the world is very rich and full of natural resources, people resume the nature very rapidly. We think that that's biggest reason is human capital. And even where the human capital is discussed, as noted by Prah (1993) and Bodomo (1996b), the linguistic and socio-cultural dimensions are often marginalized. If human capital development is critical to sustainable development in the world, it goes without saying that language issues must be taken into considerations (Tuesday, 2011). The recognition of the potency of language as a human capital per excellence has led to the development of an interdisciplinary field known as Language Economics bringing together in a common platform economists and linguists (Schultz, 1962). Chiswick (2008:2) defines it as "*the study of the determinants and consequences of language proficiency using the methodology and tools of economics.*" Since the advent of this emerging field of study, many theoretical and empirical works have been carried out to authenticate the noble place of language skills and proficiency in the microeconomic status of individuals (Marschak, 1965; Carliner, 1981; McManus; Trainer, 1988; Grin, 1996, 2003 Bruthiaux, 2003, Chiswick, 2008). Language proficiency is a human capital because it is characterized by the three indicators of human capital: it is productive, costly to produce, and embodied in the person (Tuesday). Having established the status of language proficiency as a human capital, suffice is to say that the learning of relevant foreign languages by the people who are living in different countries will not only boost the quality of their human capital but will equally help in the sustainable human development that is dearly needed in the continent in this 21st century.

As we understand that human being is the centre of any development. So, sustainable development is all about human and human communication. Because conveying information to human, to nations to the world citizens is a major subject. To communicate one another, to get information about any subject a common language is essential.

For sustainable development people should be informed about how they can use natural resources, how they can produce something by using nature, how they can avoid unconscious consuming the natural resources, etc... At the same time there should be only one research and science language for common communication. For mutual understanding, which is an important ingredient of sustainable human development, a country is supposed to have a language that is acceptable to every section constituting it (Tuesday, 2011).

This is where the foreign languages imposed by colonialism come in. These languages – English, French and Spanish – are today the major official languages spoken in the world. These are the languages that have abundance of literature which contain information relevant to development and capacity building. These are the languages serving as working languages for world's international organizations. English and French rank high in the ladder of the internationally most relevant languages of the world.

Beside this, these languages should be taught at school and should be in the education programs in the countries that English or French is not a mother tongue.

Frantz (1996) enumerates 17 benefits the knowledge of a foreign language can bring to a person. We have modified the seventeen benefits here by condensing it to 15 having knocked out 2 which we consider repetitive. The acquisition of a foreign language, according to him,

(1) broadens one's experiences and expands someone's view of the world.

(2) encourages critical reflection on the relation of language and culture, language and thought.

(3) fosters an understanding of the interrelation of language and human nature.

(4) develops one's intellect and teaches him how to learn.

(5) teaches and encourages respect for other peoples.

(6) contributes to cultural awareness and literacy, such as knowledge of original texts.

(7) builds practical skills (for travel or commerce or as a tool for other disciplines).

(8) improves the knowledge of one's own language through comparison and contrast with the foreign language.

(9) exposes someone to modes of thought outside of one's native language.

(10) fosters a sense of relevant past, both cultural and linguistic.

(11) balances content and skill (rather than content versus skill).

(12) expands opportunities for meaningful leisure activity (travel, reading, viewing foreign language films).

(13) contributes to achievement of national goals, such as economic development or national security.

(14) contributes to the creation of someone's personality.

(15) enables the transfer of training (such as learning a second foreign language).

Taking a critical look at the benefits listed above, one could suggest that somebody with the knowledge of an additional international foreign language is better positioned to succeed at work and in life than another people who is just internationally monolingual. An internationally bilingual person appears to have more access to information than someone who is competent only in one international language. Learning a foreign language, like travel, is a veritable avenue to broaden one's horizons. It lubricates opportunities not only in one's vocation or profession but also in one's intellectual potential and ability to share and work with others. With the gale of globalization becoming the order of the day, people are increasingly realizing the need to be in touch with realities expressed in the languages and cultures of other people in the world. There is, today, an increased awareness of global interdependence and multilateral needs and most people cannot afford to be disintegrated from these global human realities.

Apart from the above-mentioned dividends accruable to the learner of a foreign language, many investigations in bilingual education and cognitive psychology also suggest that foreign language study stimulates the cognitive development of the brain (Peal and Lambert, 1962; Diaz, 1983; Commins, 1984; McLaughlin, 1984; Weatherford (1986). Peal and Lambert (1962:20), for instance, found out that a person with experiences in two cultures has an advantage over another person with a monolingual experience. According to them:

Intellectually his experience with two language systems seems to have left him with a mental flexibility, superiority in concept formation, a more diversified set of mental abilities... In contrast, the monolingual appears to have a more unitary structure of intelligence which he must use for all types of intellectual tasks.

This singular discovery has led some researchers to speculate that bilinguals may have acquired some language abilities inherent in their bilingualism that enables them to possess higher mental flexibility. Coupled with the fact that people who understand more than one language and culture can communicate and relate more conveniently with people of other nationalities and cultures, it is presumably possible that through the learning of another language and culture, people become more effective solution-providers especially in the area of pressing social problems. This is made possible because learners of other international languages will automatically be exposed to a wider variety of solution-providing mechanisms.

Conclusion

It is our belief that the major challenge facing the world in this 21st century is that of human development. Countries that are regarded as developed today were able to attain that status because they have qualitative human capacity base. In our candid opinion, foreign language learning for specific purposes is an area that needs to be explored in all countries' educational programs.

As far as we understand, English, French and Spanish are the most common languages in the world. So for any researches, any type of communication or any kind of development including sustainable development, learning these languages is so important.

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The effects of differentiated instruction by integrating multiple intelligences and learning styles on solving problems, achievement in, and attitudes towards math in six graders with learning disabilities in cooperative groups

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Abstract
This study investigated the effect of using differentiated instruction by integrating multiple intelligences and learning styles on solving problems , achievement in , and attitudes towards math in six graders with learning disabilities in cooperative groups. A total of 60 students identified with LD were invited to participate. The sample was randomly divided into two groups; experimental (n= 30 boys)and control (n= 30 boys). ANCOVA and T .test were employed for data analysis. Findings from this study indicated the effectiveness of differentiated instruction by integrating multiple intelligences and learning styles on solving problems , achievement in , and attitudes towards math in the target students. On the basis of the findings, the study advocated for the effectiveness of using differentiated instruction by integrating multiple intelligences and learning styles on solving problems , achievement in , and attitudes towards math in learning disabled students.

Key Words: differentiated instruction, multiple intelligences and learning styles, solving problems, academic achievement , attitude, learning disabled.

Introduction

For students to achieve at high levels in a math class, they must not only know a list of formulas and algorithms, but also know how to apply these. As stated by Boaler (2008), "if young people are to become powerful citizens…they need to be able to reason mathematically – to think logically, compare numbers, analyze evidence, and reason with numbers" (p. 7).

VanSciver (2005) stated, "Teachers are now dealing with a level of academic diversity in their classrooms unheard of just a decade ago" (p. 534). In a single classroom, students' learning abilities may range from above grade level to below grade level. Levy (2008) stated that "students enter classrooms with different abilities, learning styles, and personalities…." (p. 161). Teachers need to find adequate strategies that provide students with the support needed to achieve standards presented through problem solving .Differentiating instruction by integrating student's multiple intelligences and learning style is one such strategy. According to Lawrence-Brown (2004), "with suitable supports, including differentiated instruction, students ranging from gifted to those with significant disabilities can receive an appropriate education in general education classrooms" (p.34).

History of Differentiated Instruction

Research suggests that students are more successful when taught in ways that are responsive to their individual readiness levels (Vygotsky, 1978, 1986), interests (Csikszentmihalyi, 1990; Maslow, 1962), learning profiles (Sternberg, Torff, & Grigorenko, 1998), and motivational catalysts (Hertzberg, 1959). Maslow's hierarchy of needs suggests that students will learn if basic satisfiers are met. Gardner's theory of multiple intelligences and Sternberg's theory of thinking styles (Sternberg & Williams, 2003) advocate for an understanding of the ways in which individuals process and make sense of information. Hertzberg's work on motivation identifies internal motivators that lead to satisfaction and fulfillment and external motivators that are largely found to be dissatisfiers. According to Vygotsky, students learn best when moderately challenged and should, thus, be instructed in their zones of proximal development – the range of learning between what is too easy and what is too difficult to accomplish. Differentiation specifically responds to progress on the learning continuum and helps to bridge what students already know with what they need to learn (Heacox, 2002). "To differentiate instruction is to recognize students' varying background knowledge, readiness, language, preferences in learning, interests, and to react

responsively" (Hall, 2002, p. 1). It requires flexibility in both teaching and expectations that drive instruction and allows for multiple sense-making strategies.

In some ways, differentiated instruction emanates from the work of John Dewey (1916) who advocated for alignment of teacher instruction to the needs of students. It prepares students for democracy (Waterman, 2007) as it gives students responsibility for their own learning. However, it may have been Betts' (1946) work on differentiation that was the first pure focus on what he referred to as "differentiated guidance" grounded in the belief that constant evaluation of individual strengths and weaknesses allowed progression through developmental stages.

Differentiated instruction is also situated in research related to cognition and the brain (Jensen, 1998) as well as multiple intelligences (verbal/linguistic, logical/mathematical, visual/spatial, bodily/kinesthetic, musical, interpersonal, intrapersonal, and naturalist) (Gardner, 1993), firmly grounding it in an understanding of how people learn. According to Clark (2002), children learn more quickly when instruction is made relevant. The brain changes physically and chemically when challenged and, without challenge, neurons cease to fire and the brain does not increase in capacity. The idea of student choice is based on brain research conducted by Deci (1995) and Jensen that says students are intrinsically motivated if they have choices. Along similar lines, Bloom's (1994) Six Levels of Higher Thinking (knowledge, comprehension, application, analysis, evaluation, and synthesis) are also embedded to ideas of differentiating instruction as they encourage greater rigor for some students and variability among all.

Implementation began in the general education classroom (Hall, 2002) and continues to be predominantly situated there today because of the intent to maximize learning for all students in the same classroom. According to Slavin (1987, 1993), slow learners are rarely more successful when placed in homogeneous groupings. Differentiated instruction supports a community of learners rather than groups of students labeled as slow and fast (Corley, 2005).

Learning is the construction of understanding and application which requires that individuals make their own meaning (Corley, 2005). Differentiation is founded on the notion of student empowerment and is connected to the writings of critical thinkers such as Friere (1970) and hooks (1994) who advocate for dialogical and constructivist teaching methods. Education is the practice of freedom and requires student participation. Differentiated instruction requires the building of community, recognizes and validates the experiences and strengths of all, and allows students to integrate "new" knowledge into their unique perspectives and personal backgrounds.

Practicing Differentiated Instruction

Students come to school with various abilities: low, medium, and high. Some of the students' abilities or lack of ability may be due to inadequate instruction offered in the past, especially in mathematics. However, the blame game will not help the students who are struggling in math with basic mathematical concepts. These basic mathematical concepts centered on computation, number sense, and problem solving. Teachers must realize what was important for students to know in mathematics and find ways of accomplishing teaching. Burns (2007) lists three important issues that were essential to teaching mathematics:

It's important to help students make connections among mathematical ideas so they do not see these ideas as disconnected facts. It's important to build student's new under standings on the foundation of their prior learning. It's important to remember that student's correct answers, without accompany in explanations of how they reason, are not sufficient for judging mathematical understanding (p.16).

The way to successfully implement these three important issues was through differentiated instruction. Burns found nine strategies for struggling math learners: Determine and scaffold the essential mathematics content; pace lessons carefully; build in a routine of support; foster student interactions; make connections explicit; encourage mental calculations; help students use written calculations to track thinking; provide practice; and build in vocabulary instruction.

Out of these nine strategies, five of them were self explanatory in terms of the rationale behind each: pace lesson carefully; build in a routine of support; foster student interaction; help students use written calculations to track thinking; and provide practice. The other four strategies, however, could use more clarification. For determine and scaffold the essential mathematics content, one must decide which concepts and skills were important. Then scaffold the content into manageable and sequential chunks for learning. Next, make connections explicit – struggling students tend not to see how things were related mathematically. They need aid on how to build new knowledge based upon what the students already know. Third, encourage mental calculations – the students were encouraged in this matter because mental calculations build-up their reasoning skills as well as fostering their number sense. Last, build in vocabulary instruction – it was important that students developed a good understanding of mathematical concepts before learning the vocabulary. Also, the vocabulary should be taught in the setting of a learning activity, not by rote memorization.

As mentioned earlier, the basic mathematical concepts were computation, number sense, and problem solving. Recently, in mathematics, there had been an increased focus on number sense. Not only was there a focus on improving students' understanding of number sense, but there is also a focus on professional development for teachers to provide sound instruction. In the state of North Carolina, Faulkner (2009), in our work with hundreds of teachers throughout the state, we have found it necessary to support teachers with a model for number sense development that, first and foremost, supports a deep understanding of mathematics.

In other words, teachers must know the right things to practice in order to have a profound impact on struggling students' mathematical understanding and performance.

Cooperative Groups in a Differentiated Classroom

Differentiating instruction works best when students can collaborate (Tomlinson, 2001). When students are afforded instruction that requires them to make choices, be active in their learning, and produce high quality work, they need to be given the opportunity to converse with one another and work cooperatively. Tomlinson (2001) explained how cooperative groups play an integral part in a differentiated classroom as, "students collaborate ….and can make major contributions toward solving problems" (p. 23). Although White and Dinos (2010) do not advocate for cooperative groups when the collaborators differ in background knowledge, they do give four guidelines to determine when cooperative groups could be beneficial: cooperation is imperative for the task that could not be completed alone, all collaborators are novices at the task, the group constructs a shared representation of the task, and they are to coordinate their background knowledge.

Problem Solving in a Differentiated Classroom

The differentiated classroom works well in cooperative groups that require meaningful problem-based work (Cotic & Zuljan, 2009; Lowrie & Logan 2007). Jausovec (1993) defined a high quality problem to have three main components: "undesired initial situation, a desired end situation, and an obstacle preventing the passage from the initial to the desired end

situation" (as cited by Cotic & Zuljan 2009, p. 298). In order to benefit student learning, Boaler (2008) instructed teachers to incorporate four key strategies when teaching mathematics: questioning, reasoning, allowing for multiple mathematical representations, and using flexibility of numbers. These strategies are best implemented through problem solving.

Attitudes Towards Problem Solving

According to Benjamin (2006), Coctic and Zuljan (2009), and Boaler (2008), problems should be "open" work that can be accessed and taken to different levels with various ways to solve the problem. Coctic and Zuljan (2009) provided reasons, including giving students a feeling of success and independence when working on authentic problems rather than "traditional math instruction that involves mainly single-solution problems" (p. 300). Burz and Marshall (1996) conveyed how students respond positively to problem-based curriculum "…when students begin to recognize and improve their competence with each new learning performance"(p. 4).

Boaler (2008) also made a distinction between student attitudes towards problem-based learning found on a performance task instead of "small problem" exercises when she stated, "when a teacher…finds challenging problems…these are also the most interesting problems in mathematics so they carry additional advantage of being more engaging" (p. 118).

Benefits of Differentiated Instruction

Servilio (2009) stated that differentiating instruction is "an individualized method of meeting all of the students' academic needs at their level" (p. 7). One benefit of differentiating instruction is that it helps teachers address the learning needs of each student. This can be accomplished by targeting the student characteristics Tomlinson (2001) identified as: readiness, interest, and learning profile. When planning for differentiated instruction, knowing students' interests and dominant learning styles, or profiles, can allow the teacher to plan learning activities that specifically target what students would like to learn and how they learn best (Servilio, 2009). When teachers teach to students' readiness level, they can accommodate a student who has mastered the lesson content, and is ready to be challenged. In this case, a harder text or a more complicated project could be assigned. Once a need is identified, the teacher responds by finding a method or solution to answer the need in order for all students to be successful in learning (VanSciver, 2005). In these examples, the teacher is able to use differentiated instruction to meet the learning needs of their students.

Another benefit of differentiated instruction is that it leads to increased student achievement. Servilio (2009) stated "The combination of a differentiated curriculum and the options for student choice are ideal for promoting success for students with disabilities and it can improve outcomes for other students as well" (p. 10). In a differentiated classroom, when students are engaged and have achieved their goal or completed a task, they are more motivated to continue learning and exceed their original goal or expectation. "With the tools of differentiated instruction, we can ... take each child as far as he or she can go" (Levy, 2008, p. 164) towards further achievement and success.

Differentiating Instruction by integrating multiple intelligences and Student Learning Styles

Multiple intelligences theory has been closely linked with learning styles. Sliver et al.(1997) claims that learning styles and multiple intelligences share some similarities. They claims that learning styles and multiple intelligences should be applied in combination since they believe each theory has some limitations. They suggest "in conjunction, both learning styles and multiple intelligences can work together to form a powerful and integrated model

of human intelligence and learning – a model that respects and celebrates diversity and provides us with the tools to meet high standards" (P.27).

Differentiating instruction by learning style is a solution to meeting the needs of a broad spectrum of students and to ensuring that all students achieve the standards of district and state, which is one of the biggest challenges for teachers (Heacox, 2002; Levy, 2008). Dunn, Beaudry, and Klavis (2002) promoted differentiating by learning styles when they stated, "when permitted to learn difficult academic information or skills through their identified preferences, children tend to achieve statistically higher on test and attitude scores than when instruction is dissonant with their preferences"(p.88). As Read (2000) stated, differentiating by learning style will allow students to "interact with course content to facilitate memory retention and to use higher order thinking skills" (p.40). Dunn, Beaudry, and Klavas (2002) also discussed the correlation between student mastery of concepts and learning style when they stated, "most children can master the same content; how they master it is determined by their individual needs" (p. 88).

Similarly, According to Lazer (2004), using MI in the classroom makes lessons more interesting, which causes students to pay more attention to what is taught and then learned. As a result, students are more engaged, they remember more, and achievement increases. Lazer (2000) also stated that when students become aware of their intelligence strengths and consider themselves as being "smart" in that area of intelligence, their self esteem is raised.

Further research is necessary to build on the vast amount of research into differentiated instruction with learning disabled students. This will allow researchers to determine how differentiated instruction can be best used as an intervention with learning disabled students as there is a dearth of research with this population. In order to address this issue with the lack of research on differentiated instruction with learning disabled students . Thus the present study seeks to give answers to the following questions.

1- Are there differences in post-test scores mean between control and experimental groups on Solving Problem test ?

2- Are there differences in post-test scores mean between control and experimental groups on Academic Achievement test?

3- Are there differences in post-test scores mean between control and experimental groups on Attitude Towards Math test ?

Method

Participants

Sixty students identified with LD were invited to participate. Each student participant met the following established criteria to be included in the study: (a) a diagnosis of LD by teacher's references, and learning disabilities screening test (Kamel, 1990) (b) an IQ score on the Mental Abilities Test (Mosa, 1989) between 90 and 114 (c) low scores on Mathematical achievement , attitude and problem solving tests (d) absence of any other disabling condition. The sample was randomly divided into two groups; experimental (n= 31 boys only) and control (n= 30 boys only).

The two groups were matched on age, IQ, achievement, attitude, and problem solving tests. Table 1. shows means, standard deviations, t- value , and significance level for experimental and control groups on age (by month), IQ, achievement, attitude and problem solving tests (pre-test)

Table 1. *pretest mean scores , standard deviations ,t- value , and significance level for experimental and control groups on age (by month) , IQ , achievement ,attitude and problem solving tests.*

Variable	Group	N	M	SD	T	Sig.
Age	Experimental	30	145.51	2.42	0.453	-
	Control	30	145.23	2.45		
IQ	Experimental	30	109.19	7.44	-.305	-
	Control	30	109.80	8.05		
Achievement	Experimental	30	12.129	1.14	0.097	-
	Control	30	12.100	1.18		
Attitude	Experimental	30	20.61	0.91	-2.32	
	Control	30	21.50	1.90		
Mathematical	Experimental	30	6.21	3.00	-.547	-
problem solving	Control	30	6.67	3.52		

Table 1. shows that all t- values did not reach significance level. This indicated that the two groups did not differ in age , IQ , achievement ,attitude and problem solving tests (pre-test).

Instruments

1- Academic Achievement Test: The end-of- year examination results of the participants in math standardized and marked by the teachers , and provided the summative evaluation scores for the analysis. Hence, scores in the math served as the measures of students' achievement.

*2-Attitude Towards Math Scale: (Mourad , 2010).*The scale consisted of 20 three-point Likert-type statements, reflecting feelings towards Mathematics, ranging from positive to negative (e.g. *Learning mathematics makes me nervous*)

3- Problem Solving competency Test : The scale consisted of 22 sub- questions . Every right answer was given one point .

Procedures

Screening : Six year primary students who participated met the following established criteria to be included in the study: (a) a diagnosis of LD by teacher's references, and learning disabilities screening test (Kamel,1990) (b) an IQ score on the Mental Abilities Test (Mosa, 1989) between 90 and 118 (c) absence of any other disabling condition.

Pre-intervention testing : All the sixty students in grade six primary completed Academic Achievement Test , which assesses students' Mathematical academic Achievement; Attitude Towards Math Scale, which assesses students' attitude towards math, and Mathematical Problem Solving Test ,which assesses students' problem solving abilities. Additionally , the end-of- year examination results of the participants in math standardized and marked by the teachers , and provided the summative evaluation scores for the analysis. Hence, scores in the math served as the measures of students' achievement. Thus data was reported for the students who completed the study .

General Instructional Procedures: Instruction was delivered to the six year math teacher 9. Before the study started, instructors participated in 10 hours of training to learn how to

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[9] The researcher wishes to thank to Mr. Fahmy MArzook, the math teacher for his assistance .

implement the differentiated instruction . The teacher was provided with a notebook that contained detailed directions for implementing all activities and lessons.

The teacher; Mr. Fahmy MArzook, received training and role-played implementing the strategy until he was able to do so to criterion. To help ensure complete implementation, he was provided with a checklist for each lesson. As he taught a lesson, each step was checked as it was completed. The teacher, however, had the flexibility to respond to individual student needs, backing up and repeating a step, if necessary, or reordering steps. Students received 3 training sessions a week, lasting between 40 and 45 min . Instruction took place in the regular classroom in order to naturalize the situation.

Fidelity of Treatment Implementation: To ensure that strategy instruction was delivered as intended, the following four safeguards were implemented. One, the teacher received training to criterion in how to apply the instructional procedures. Two, teacher met with the author weekly and communicated daily with the author (as needed)to discuss any noteworthy occurrences that took place when implementing instructional procedures. Reported difficulties occurred rarely and usually involved the need to individualize further for a particular student to deal with a behavioral issue. Responses to issues such as these were discussed and implemented. Three, the teacher had a checklist for each student that contained step-by step directions for each lesson. As the teacher completed a lesson step, he placed a check by it. For 42% of the sessions, the researcher also assessed treatment integrity by recording the presence or absence of each component. Session integrity was computed by dividing the number of lesson components taught by the total number of components and multiplying the quantity by 100. Average session integrity scores were computed for each participant.

Design and Analysis

The effects of implementing the differentiated instruction on students' academic achievement, problem solving ,and attitude towards math were assessed using a repeated-measures design, pre- post- and follow-up testing.

Results

Mathematics Achievement

Table 2. shows data on ANCOVA analysis for the differences in post- test mean scores between experimental and control groups in Mathematics Achievement. The table shows that the (F) value was (416.92) and it was significant value at the level (0.01).

Table 2. *ANCOVA analysis for the differences in post- test mean scores between experimental and control groups in Mathematics Achievement*

Source	Type 111 sum of squares	df	Mean square	F	Sig.
Pre	3.894	1	3.894		
Group	6327.64	1	6327.64	416.92	0.01
Error		57			
Total	880.27 7208.85	59	880.27		

Table 3. shows T test results for the differences in post- test mean scores between experimental and control groups in Mathematics Achievement. The table shows that (t) vale was (20.54). This value is significant at the level (0.01) in the favor of experimental group. The table also shows that there are differences in post- test mean scores between experimental and control groups in Mathematics Achievement in the favor of experimental group.

Table 3. *T. test results for the differences in post- test mean scores between experimental and control groups in Mathematics Achievement*

Group	N	Mean	Std. deviation	T	Sig.
Experimental	30	35.97	2.58	20.54	0.01
Control	30	15.59	4.85		

Attitude Toward Mathematics

Table 4. shows data on ANCOVA analysis for the differences in post- test mean scores between experimental and control groups in Attitude Toward Mathematics . The table shows that the (F) value was (244.722) and it was significant value at the level (0.01).

Table 4. *ANCOVA analysis for the differences in post- test mean scores between experimental and control groups in Attitude Toward Mathematics*

Source	Type 111 sum of squares	df	Mean square	F	Sig.
Pre	.128	1	.128		
Group	5538.336	1	5538.336	244.722	0.01
Error	1312.607	57	22.631		
Total	7375.73	59			

Table 5. shows T. test results for the differences in post- test mean scores between experimental and control groups in Attitude Toward Mathematics. The table shows that (t) vale was (16.75). This value is significant at the level (0.01) in the favor of experimental group. The table also shows that there are differences in post- test mean scores between experimental and control groups in Attitude Toward Mathematics in the favor of experimental group.

Table 5. *T. test results for the differences in post- test mean scores between experimental and control groups in Attitude Toward Mathematics*

Group	N	Mean	Std. deviation	T	Sig.
Experimental	30	41.74	6.46	16.75	0.01
Control	30	21.80	1.42		

Problem Solving

Table 6 shows data on ANCOVA analysis for the differences in post- test mean scores between experimental and control groups in reading comprehension test. The table shows that the (F) value was (128.009) and it was significant value at the level (0.01).

Table 6. *ANCOVA analysis for the differences in post- test mean scores between experimental and control groups in comprehension test*

Source	Type 111 sum of squares	df	Mean square	F	Sig.
Pre	1.725	1	1.725		
Group	217.276	1	217.276	128.009	0.01
Error	317.340	57	5.567		
Total	1067.933	59			

Table 7 shows the t. test results for the differences in post- test mean scores between experimental and control groups in reading comprehension test. The table shows that (t) vale

was (11.67). This value is significant at the level (0.01) in the favor of experimental group. The table also shows that there are differences in post- test mean scores between experimental and control   groups in comprehension test in the favor of experimental group.

Table 7. *T- test results for the differences in post- test mean scores between experimental and control groups in comprehension test*

Group	N	Mean	Std. deviation	T	Sig.
Experimental	30	13.50	1.10	11.67	0.01
Control	30	6.43	3.12		

Discussion

The main objective of the present study was to explore the effects of differentiated instruction by integrating multiple intelligences and learning styles on solving problems , achievement in, and attitudes towards math in six graders with learning disabilities in cooperative groups.

The results of this study as revealed in tables 3, 5, 7 show that the differentiated instruction that integrated multiple intelligences and learning styles was effective in improving solving problems, achievement in , and attitudes towards math of students in experimental group, compared to the control group whose individuals were left to be taught in a traditional way.

Participants of this study fall into the minimum IQ of 90, nevertheless, they have learning disability. Thus IQ score cannot account for learning disabilities. The results of the present study support that conclusion with evidence that students who participated in the study do not fall into the low IQ range, however they have learning disabilities. When designing a program based on the differentiated instruction that integrated multiple intelligences and learning styles, they had statistical increase in solving problems , achievement in , and attitudes towards math. This goes in line with what Mourad Ali et al (2006) notes that there is one problem " students who are identified as learning disabled often cover any special abilities and talents, so their weakness becomes the focus of their teachers and peers, ignoring their abilities. Mourad Ali (2007), however , notes that "learning disabled, as well as gifted students can master the same contents and school subjects", but they need to do that in a way that is different from that used in our schools.

Experimental group gained better scores in solving problems , achievement in , and attitudes towards math than did control groups in post-tests though there were no statistical differences between the two groups in pre- test. This is due to the program which met the experimental group's needs and interests. On the contrary, the control group was left to be taught traditionally. This goes in line with our adopted perspective which indicates that traditional methods used in our schools do not direct students as individual toward tasks and materials , and do not challenge their abilities. This may lead students to hate all subjects and the school in general. On the contrary, when teachers adopt differentiated instruction that suits students interests and challenge their abilities with its various modalities .

This indicates that " as we learn more about the scope and complexity of individual differences and how they affect academic progress, we become increasingly convinced that many individuals who do not do well at school due to the instructional methods used to teach them does not complement preferred styles to learn, thus, we should seek strategies that help these students and match their strengths.

Implications

The results of this study have several important implications. This study adds to the literature on the effectiveness of differentiated instruction with learning disabled students. Results appear to indicate that differentiated instruction are an effective instructional strategy for improving solving problems , achievement in , and attitudes towards math test scores of students with learning disabilities. This study has referential adequacy because this study could be replicated for any performance task by any teacher wanting to test how students perform when learning through integrating multiple intelligences and learning styles .

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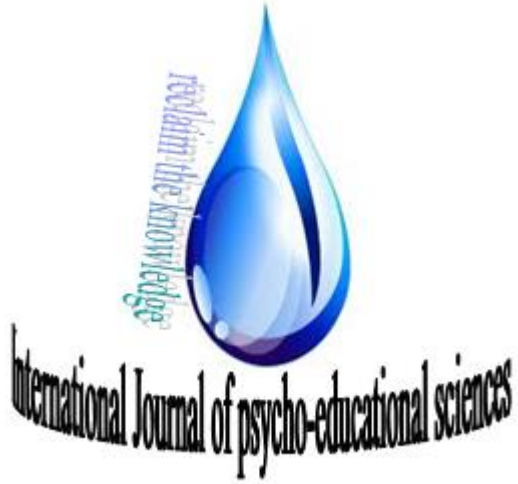
Examining the Learning Styles of Prospective Classroom Teachers

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Abstract

The aim of this study is to determine the dominant learning styles among Kolb's Learning Styles that are preferred by prospective teachers of Classroom Teaching at the Faculty of Education in Atatürk University and to examine the differences among gender and class levels. The Survey model was used in the research. A total of 93 prospective teachers, who were registered to the Department of Classroom Teaching in the 2011-2012 academic year, participated in the study. Kolb's Learning Style Inventory (LSI), which was translated into Turkish by Aşkar and Akkoyunlu (1993), was used as the data collection tool in the research. Frequency, percentage values and Chi-Square Independence Test Techniques were used in analyzing the data. According to the obtained data, it was found that most frequently the prospective classroom teachers had an "assimilating" learning style, whereas the "accommodating" learning style was the least frequent. In view of the research, no significant difference was observed among the learning styles and constituents of prospective classroom teachers in terms of gender and class levels.

Keywords: *Learning, Learning Styles, Kolb's Learning Styles*

Introduction

The future of individuals and societies depends on their skills to reach, use and produce information in our age where we experience rapid information sharing and production. The idea of active construction of information by students has caused significant changes in teacher and student roles in accordance with the constructivist education understanding that has been rather widely accepted in the field of education in recent years (Çelik & Şahin, 2011).

The fact that each student has a way and style with which he/she learns the best, in other words, the fact that each student learns via different ways results from the fact that they have different learning styles and they use these learning styles effectively. Just as the personality traits, preferences and needs of each individual are different from each other and specific to each individual, the learning styles are also specific to each person and none of them is superior to the other (Galloway and Labarca, 1990; Reported by Erden and Altun, 2006). The real problem existing in many traditional education systems is not the fact that some students are "learning disabled" but the fact that many teachers are reluctant to adapt their teaching approaches according to the students who learn via different ways (Saban, 2001).

Learning style can be defined as the individual approach differences in the course of obtaining and processing information (Felder, 1996; Reported by Yenice and Saracaloğlu, 2009: 162). Felder (1996) states that there are a number of methods preferred by the students in the course of obtaining and processing information. He adds that some students focus on the data and operations whereas some of them are more comfortable in theories and mathematical models; some students react to the visual forms of information such as diagrams, pictures and graphs more strongly whereas some of them react to the written and verbal explanations more strongly; a group of students prefer efficient and interactive learning whereas another group of students prefer more internal and individual methods. According to the writer, the mentioned differences reveal that the students have different learning styles.

Kolb's learning style model (Kolb, 1984; Aşkar & Akkoyunlu, 1993), the basis of which is Kolb's Experiential Learning Theory, is one of the models widely used. Kolb's Learning Style is composed of two dimensions, namely obtaining information and processing information. The first dimension defines concrete experience and abstract conceptualization

whereas the second dimension defines active experimentation and reflective observation (Rayner & Riding, 1997). The students are classified according to their preference of concrete experience or abstract conceptualization (how they obtain and comprehend the information) and active experimentation or reflective observation (how they transform and internalize the information) in this model (Felder, 1996). However, there is not just one style that defines the individual's learning style (Aşkar and Akkoyunlu, 1993; Jonassen and Grabowski, 1999). An individual's learning style is explained with the interaction of four basic learning styles in different ways. These learning styles are as follows: "Diverging", "Assimilating", "Converging" and "Accommodating". These four different learning styles reveal not only the individual's dominant learning style but also his/her learning preferences (Kolb, 1985:5, Aşkar & Akkoyunlu, 1993).

1-Diverging Learning Style: The combination of concrete experience (via feeling) and reflective observation (via watching) gives us the diverging learning style. Individuals who have this learning style are successful in looking at concrete situations from many different aspects. These individuals are skillful in focusing on ideas and connecting ideas, as in brainstorming. Individuals who have this learning style have broad cultural interests. These individuals consider their own feelings and opinions while structuring opinions. The question "Why?" is the defining question of these individuals who prefer working individually in learning activities. This type of learners explain course materials by associating them with their experiences, interests and their prospective occupations. As motivators, teachers must help this type of learners (Kolb, 1984; Jonassen and Grabowski, 1993; Felder, 1996; Riding and Rayner, 1998; Guild & Garger, 1991).

2-Assimilating Learning Style: The combination of abstract conceptualization (via thinking) and reflective observation (via watching) gives us the assimilating learning style. Their thinking skill and their awareness of values and meanings are among the most important features of the individuals who have this learning style. These individuals focus on abstract concepts and ideas while learning something. The question "What?" is the defining question of this type of learners. Individuals who have assimilating learning style prefer structured systematic information. The information that is offered to the individuals with this learning style must be ordered, logical and detailed. They prefer audio-visual presentations and course implementations. Teachers with this learning style must act as an expert in order to be effective (Kolb, 1984; Jonassen and Grabowski, 1993; Felder,1996; Guild & Garger,1991).

3-Converging Learning Style: The combination of abstract conceptualization (via thinking) and active experimentation (via doing) gives us the converging learning style. Solving problems, deciding, logical and systematic planning of ideas are primary features of the individuals who have this learning style. These individuals prefer dealing with technical problems instead of social and personal activities. Converging individuals attach importance to details. They try to understand the whole from the parts. They follow the steps in an order during learning activities. The question "How?" is the defining question of those who prefer this type of learning. The teacher must act as a trainer (coach) in order to be effective (Kolb, 1984; Jonassen and Grabowski, 1993; Felder, 1996;; Guild &Garger, 1991).

4-Accommodating Learning Style: The combination of concrete experience (via feeling) and active experimentation (via doing) gives us the accommodating learning style. Planning, executing the decisions and involving in new experiences are among the notable features of the individuals with this learning style. They enjoy learning through research and discovery. The question "If.... then what?" is the defining question of this type of learners. In order to be effective, the educator must offer opportunities at the highest level to the students

so that they discover something on their own, and he/she must take a back seat (Kolb, 1984; Jonassen and Grabowski, 1993; Felder, 1996; Guild &Garger, 1991).
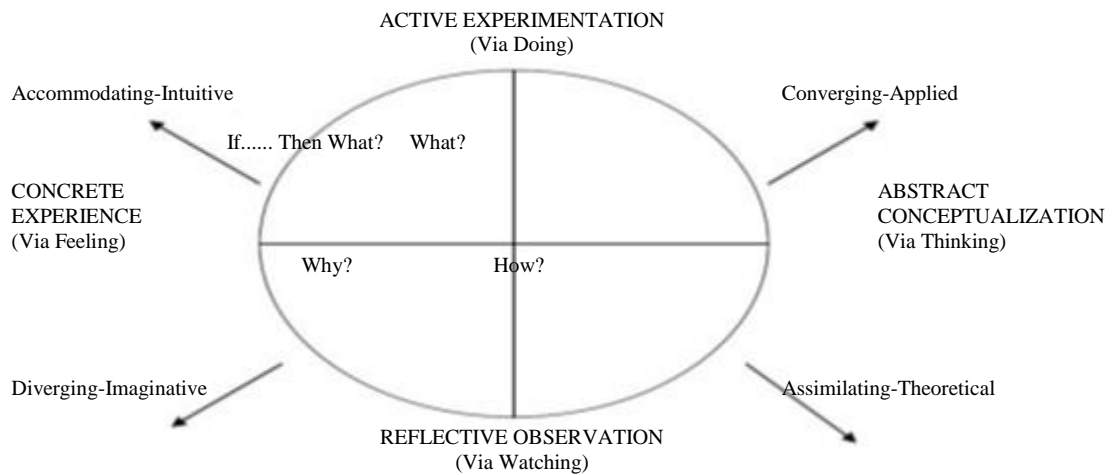

Figure-1 *Diagram to Identify the Learning Styles*

Method

Research Model

Descriptive survey model was used in this study. General survey models are survey formations that are performed on the entire universe or a group, section or sample taken from that universe in order to pass a general judgment on the universe in a universe that is composed of many number of elements (Karasar, 2006: 79).

Sample

The sample of the study was composed of 93 first-year and fourth-year prospective teachers, who were studying in daytime and evening education at the Department of Classroom Teaching at Kazım Karabekir Faculty of Education in Atatürk University, who were selected via random sampling method.

Data Collection Tools

Kolb's Learning Style Inventory (LSI), which was developed by Kolb (1985) and translated into Turkish by Aşkar and Akkoyunlu (1993), was used in the data collection stage in order to determine the learning styles of prospective classroom teachers. Among the four basic learning styles within the inventory, Cronbach's alpha reliability value was determined as 0.58 for the concrete experience; 0.70 for the reflective observation; 0.71 for the abstract conceptualization and 0.65 for the active experimentation. The learning style inventory was composed of 12 questions, and there were four options in each question. For the options in the questions, four grading types were structured as answer options as follows: "4 as the most suitable, 3 as the second suitable, 2 as the third suitable and 1 as the least suitable". The answers to the questions within Kolb's learning scale were given in the following order:

1: Concrete Experience (CE),
2: Reflective Observation (RO),
3: Abstract Conceptualization (AC),
4: Active Experimentation (AE)

After CE point, RO point, AC point and AE point of 12 items had been calculated, combined points were determined as AE-RO, AC-CE. These obtained values were placed on a graph

that was organized in accordance with experiential learning. This graph was divided into four fields, namely accommodating, converging, diverging and assimilating. According to the numerical values obtained from AC-CE and AE-RO, it was determined to which of the four learning styles the students belonged.
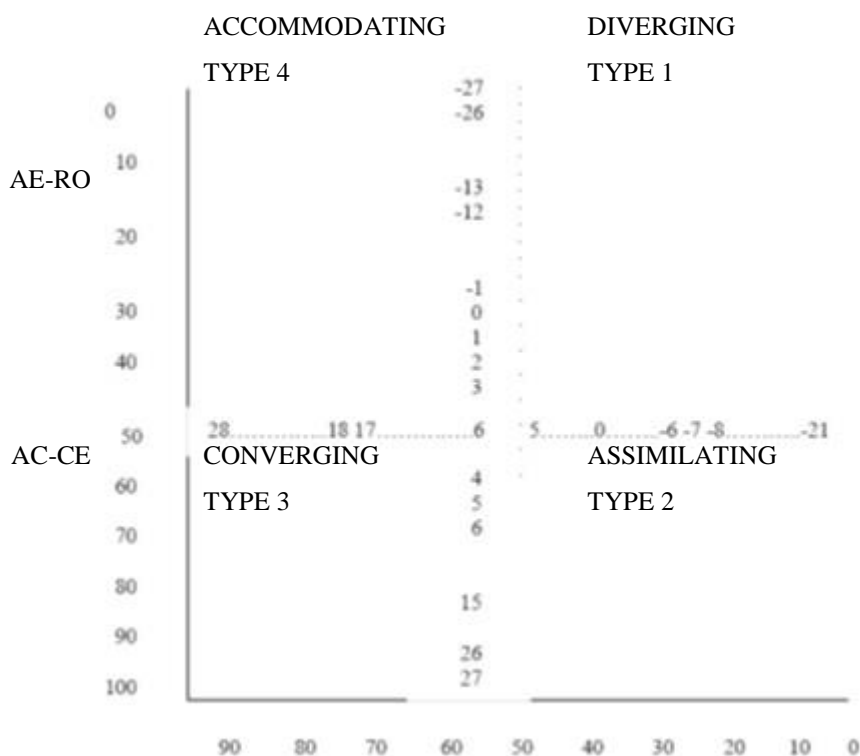

Figure-2 *Learning Style Inventory Analysis Diagram*

The fact that the individual knows the most suitable learning style for himself/herself helps him/her to increase his/her learning power (Aşkar and Akkoyunlu, 1993). On the other hand, an educator, who knows the features of his/her style, can design a more effective teaching service by finding the equivalents to his/her styles. He/She can even develop distinctive course designs for every course that he/she will give (Babadoğan, 2000). Determining the learning styles of the students can assist the teachers in deciding what kind of a method to develop in the teaching process (Akkoyunlu, 1995). For this reason, the aim of this study is to determine the dominant learning styles among Kolb's Learning Styles that are preferred by prospective teachers of Classroom Teaching at the Faculty of Education in Atatürk University. And to this aim, answers were sought to the following questions:

1- Is there a significant relationship between the gender and learning styles of prospective classroom teachers?
2- Is there a significant relationship between the class levels and learning styles of prospective classroom teachers?

Data Analysis

The learning styles of prospective classroom teachers were presented by benefiting from descriptive statistics and forming frequency (f) and percentage (%) tables. Moreover, the "Chi-square Test" was utilized in the research questions. The Chi-square independence test was used in order to establish whether there is a relationship between two or more variable groups. The observation results have to be presented as a classified or grouped combined series in order to conduct this test (Kalaycı 2006). SPSS 16 (Statistical Package for the Social Sciences) package program was used for the statistical analyses of the research data. The level

of significance was taken as .05 for the statistical analyses that were conducted in the research.

Findings

The Chi-square Test was conducted in order to test whether there was a significant relationship between gender and learning style, and its results are given in Table 1.

Table 1: *Chi-square Test Results Regarding Gender and Learning Styles*

Learning Style	Gender (f) and (%)				Total	
	Male f	Male %	Female f	Female %	f	%
Assimilating	13	31.0	19	37.3	32	34.4
Diverging	8	19.0	11	21.6	19	20.4
Converging	15	35.7	13	25.5	28	30.1
Accommodating	6	14.3	8	15.7	14	15.1
Total	42	100.0	51	100.0	93	100.0

X^2: 1.167 　　　　　　Sd: 3 　　　　　　$p > .05$

As seen in Table 1, it was found that there was no significant relationship between gender and learning style according to the results of the Chi-square test ($X^2_{(3) : 1.167}$, $p > .05$). Among a total of 93 prospective classroom teachers, it was observed that 34.4% (f=32) of them had assimilating learning style, 20.4% of them had (f=19) diverging learning style, 30.1% (f=28) of them had converging learning style and 15.1% (f=14) of them had accommodating learning style.

When the learning styles of female and male prospective teachers are considered, it is observed that female students preferred assimilating style with a highest ratio of 37.3% (f=32) whereas male students preferred converging learning style with a highest ratio of 35.7% (f=13). It is observed that female prospective teachers preferred accommodating learning style with a least ratio of 15.7% (f=14) and male prospective teachers also preferred accommodating style with a least ratio of 14.3% (f=6).

Table 2: *Distribution of Prospective Teachers in Terms of Class Level and Learning Style*

Learning Style	Class Level (f) and (%)				Total	
	1st Year f	1st Year %	4th Year f	4th Year %	f	%
Assimilating	19	35.8	13	32.5	32	34.4
Diverging	11	20.8	8	20.0	19	20.4
Converging	15	28.3	13	32.5	28	30.1
Accommodating	8	15.1	6	15.0	14	15.1
Total	53	100.0	40	100.0	93	100.0

X^2: .214 　　　　　　Sd: 3 　　　　　　$p > .05$

It was observed that there was no significant relationship between class levels and learning styles of the students according to the results of the Chi-square test ($X^2_{(3): .214}$, $p > .05$). According to Table 4, it is observed that 32 (34.4%) of the prospective classroom teachers had the assimilating learning style with the highest ratio whereas 14 (%15.1) of them had the accommodating learning style with the least ratio. When the class levels are considered, close values are observed. In view of this, it can be stated that the learning styles

of first-year students and fourth-year students show similarity. There is a significant difference between the learning styles of first-year students and fourth-year students. Assimilating learning style was the most observed learning style among the first-year students whereas the converging learning style was the most observed learning style among the fourth-year students.

Discussion and Conclusion

In view of the findings of the research that was conducted in order to determine whether there was a significant difference between gender and learning styles, it is observed that assimilating learning style had the highest ratio %34.4 (f=32) whereas accommodating learning style had the lowest ratio %15.1 (f=14). In the surveys conducted with Kolb's Learning Style Inventory, it is stated that the number of students who prefer the assimilating learning style is considerably higher than the number of students who prefer other learning styles, and the number of students who preferred the accommodating learning style is generally fewer in number. This result corresponds to the findings of Ames (2003), Güzel (2004), Uzuntiryaki, Bilgin and Geban (2004), Arslan and Babadoğan (2005), Demir (2006), Numanoğlu and Şen (2006), Bahar, Özen and Gülaçtı (2007), Okur, Bahar, Akgün and Bekdemir (2011) and Mutlu (2008).

In the study conducted by Aşkar and Akkoyunlu (1993), Kolb's Learning Style Inventory was implemented on 103 adults. It was found that 65% of them had the assimilating learning style, 17% of them had the converging learning style, 11% of them had the diverging learning style and 7% of them had the accommodating learning style.

In the study conducted by Çelik and Şahin (2011) on 81 prospective physical education teachers, the ratio of the learning styles of the prospective teachers were as follows: 17.3% for Type I diverging learning style, 43.2% for Type II assimilating learning style, 27% Type III converging learning style and 2.3% for Type IV accommodating learning style.

In the study conducted by Okur, Bahar, Akgün and Bekdemir (2011) on 452 students, 47.3% of them had the assimilating learning style, 36.7% of them had the converging learning style, 8.7% of them had the diverging learning style and 7.3% of them had the accommodating learning style.

In parallel with the studies within the related literature, it is interesting that those who prefer the assimilating learning style are larger in number whereas those who prefer the accommodating learning style are fewer in number. This finding shows parallelism with the studies in the related literature.

Another aim of this study was to determine whether the learning styles differed in terms of class levels. In the Chi-square analysis conducted for that purpose, it is observed that there is no significant difference at .05 level. In the study conducted by Kaf Hasırcı (2006) in order to find the dominant learning styles of the students and determine whether there was a difference in terms of class level, he found that the dominant learning styles did not show a statistically significant difference in terms of class level. This result supports the opinion that the learning style emerges as an innate feature that does not easily change throughout one's life as stated by Kaplan and Kies (1995).

In a study conducted by Ergür (1998), he found that learning styles affected people's academic careers. In view of the researches conducted in recent years, it was found that people from professions such as psychology, social services, art/theater, literature, design and journalism dominantly prefer the diverging learning style; people from professions such as biology, mathematics, physics, education researchers, sociologists and lawyers dominantly

prefer the assimilating learning style; people from professions such as engineering, computer sciences, medical technology, economy, forming and forestry dominantly prefer the converging learning style; and people from professions such as management, public finance, marketing, human resources dominantly prefer the accommodating learning style (Kolb, Boyatzis and Mainemelis, 1999). On the other hand, Aşkar and Akkoyunlu (1993: 44) emphasize that people who are interested in education and teachers prefer the assimilating learning style. In the conducted study, it is observed that the findings obtained from the prospective teachers according to class levels are parallel with the related literature.

This study can guide academicians who work in institutions that provide teacher training, and highlight the fact that they should pay particular attention to the learning styles of the prospective teachers on the courses that they give. This study can also assist prospective teachers in learning easily and developing positive attitudes towards learning and courses throughout their education.

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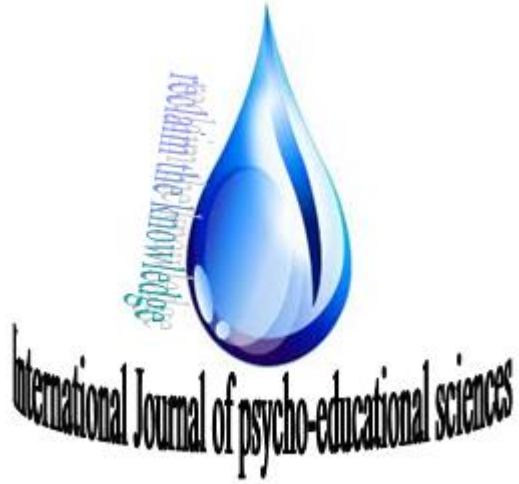
The Characteristics of Superior Talented Students and Comparison of their General Ability and Wisc-R Tests' Results*

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Abstract

Bümen stated that Gardner defined 'intelligence' an intercultural fact and problem solving ability (2005: 5). The fact that individuals solve their problems by using their intelligence makes them happy when they satify their expectations but if it doesn't happen, it causes the unhappiness both for them and their society (Hökelekli and Gündüz, 2004: 142). In this study, in presentation process of individuals who are defined as having superior intelligence, the comparison has been made between the identificaitons of classroom teachers in line with the clause 9/2-c of Science and Art Centres Directive (BILSEM), general ability test and WISC-R test's points. Correlation analysis was used in the comparision. It has been seen that Primary and secondary school students have the majority of characteristics in observation form. In correlation account in test points, the relationship between variances was specified and meaningful relationship was recognized between students' intelligence points and verbal/performance points. However, no relationsip was found between general ability/knowledge tests' points with verbal/performance points and WISC-R points.

Key Words: The characteristics of superior talented, intelligence point, WISC-R

Introduction

Human beings are born with some specific features and they gain a place in society by using these features. They perform some tasks put on by society and reach some particular gains. Highly talented individuals undertake different missions compared to ordinary talented individuals and they use different privileges in the scope of these missions. If these people are educated in suitable field and employed, they make contribution to social development. Otherwise, they blunt their abilities and they even may not prevent from using their qualifications to the detriment of the society.

To provide training for every individual in the frame of their abilities is among the basic education policy of almost every country. It is trying to implement different educational process separately for people with special educational needs, the ones with mental inability and the normal individuals. Superior talented individuals are supposed to be subjected to different education (Robinson and Clinkenbeard, 1998: 211-230). For that purpose, upon specifying the fields and the methods in early years for individuals, they can be prevented from wasting important times and it also prevents the governments from throwing away the resources.

It is apparent that people who develop the technology of this time and remain in the forefront of the society are superior talented ones. Therefore, it is the responsibility of the society to determine the superior talented individuals and train them in a way that they deserve. Societies struggle to fulfil this responsibility in different ways.

Highly intelligent and talented children are supposed to be subjected to special education because they are different from other children naturally (Clark, 1997, et al.: Davaslıgil, 2004: 16). There are even individuals whose abilities have been never discovered, who have been stranger in their society and led their life so, left the world and made no contribution to their community (Yanpar, 2007: 85-86). That's why it is just one of the responsibilities to train the educators who will educate these special individuals and make them beneficial to the society. If these students continue their education in standard schools and standard educational process, it is possible that the superior ability lose among normal students and superior talented individuals may be unhappy and make the others unhappy (Eser, 2011: 2). On the one hand, superior talented means a huge gain under suitable conditions but on the other hand they are even sources of danger unless they are taken

seriously (Hökelekli and Gündüz, 2004: 142). As Yücel stated " there is no person deserving to be appreciated in the societies where people are not appreciated" (1998: 267). As highly intelligent and talented children are the leaders, scientists and artists of the future, it is necessary not to lose such a national wealth (MEGEP, 2007: 38).

In activities carried out in order to identify superior talented individuals within the scope of their difference from other people, initially general ability test is applied and if they get the passing grade, advanced identification test (WISC-R) is carried out in Turkey Science and Art Centers Directive (BILSEM). Educational institutions have been opened under different names such as BILSEM connected with The Ministry of National Education and activities were aimed to increase the levels of superior talented students' abilities and make them do beneficial actions for the society. Karabuk University Gifted and Talented Education, Practice and Research Center (KUYEM) is one of these institutions. Due to the fact that BILSEM is not available in the city, it has taken it as a goal to determine the superior talented students and prepare both they and the country for the future. General culture and general ability exam and then WISC-R test are implemented so as to specify these students. The ones who achieve over average go in for WISC-R test. The reason beyond the fact that just the ones who are above specific number are taken with the WISC-R test is to separate students with superior intelligence from their peers there. Some inclinations appear in many different fields such as music, art, literatüre, sciences, mathematics, human relations, athletism. It is supposed that the ones who have such inclinations be specified in their special abilities by the test under the basic responsibilities of the schools, helped to develop their skills and directed into the appropriate specialty programs and occupations (Bloom, 1998: 250). Selecting the talented ones is easier than creating or developing talent (Bloom,1998: 251; Miller, 1990: 125).

WISC-R is implemented with the purpose of evaluation, direction and training for the students between 6-16 years old who need service and activities by the school but they need for developing intelligence, creativity, ability, who have lack of academic skills and need special education. The test is implemented to one person individually in one…

The problem of the search: It is to make a comparison between demographic specialties of superior talented students and general ability and WISC-R test.
Sub-problems of the research:
1- What are the demographics specials for superior talented students?
2- How much is the relationship between their general ability points and verbal and performance points?
3- How much is the relationship between their general ability points and general total points?
4- How much is the relationship between their verbal and performance points and general total points?

Method

Universe and Sample

This search was carried out in September of 2012-2013 academic year and implemented on 42 students from 3. and 4. grades who receive education in Karabük University because of their skills. No sample was chosen with the thought that there wouldn't be any trouble in researching on 42 students in total.

Data Collection Tools

Data was collected from 'Primary and Secondary School Student Observation Form' filled in by classroom teacher and second evaluation exam used in different times by

Ministry of National Education and WISC-R tests practiced by the WISC-R specialists and students together.

Data Analysis

Classroom teachers write down one of A, B, C and D choices indicated in Primary and Secondary School Student Observation Form' for each applicant student. The meanings of these letters;

"A" The mentioned behaviour is **always** seen in most activities.

"B" The mentioned behaviour is **often** seen in most activities.

"C" The mentioned behaviour is **sometimes** seen in most activities.

"D" The mentioned behaviour is **never** seen and frequency and percentage functions have been made upon the data collected from this form.

Besides data gathered from general ability and general culture exam and WISC-R test was transferred to SPSS for Windows 16 package. Pearson Product Moment Correlation Coefficient was chosen as analysis method. This is because this statistic is the one which can be used in situations when two variances are equally proportional and equally spaced.

Findings

In the exams implemented for determining superior talented students, it is aimed to chose the most appropriate students and train them according to their area of interest and capacity. After the first phase (students' nomination by classroom teacher), general ability and general culture test is implemented in second phase. In the search the KUYEM students' demographic characteristics and general ability and general culture tests' suitabilities to determine the superior talented students were investigated. Frequency and percentages consisting of findings from teachers' answers are seen in Table 1.

Table 1: *Primary and Secondary School Student Observation Form Results*

No	Behaviour	A		B		C		D	
		f	%	f	%	f	%	f	%
1	To use information in daily life	38	90,5	4	9,5	-	-	-	-
2	To remember things heard, read and seen easily	39	92,9	3	7,1	-	-	-	-
3	To be knowledgeable in many areas as compared with peers	37	88,1	4	9,5	1	2,4	-	-
4	To read books which are above the level of class.	32	76,2	7	16,7	3	7,1	-	-
5	To ask questions to be knowledgeable profoundly	35	83,3	7	16,7	-	-	-	-
6	To distinguish important parts of subjects and events and to recognize the problems	36	85,7	6	14,3	-	-	-	-
7	To perceive the relationships between events, situations and information which are at the level that their peers cannot recognize	40	95,2	2	4,8	-	-	-	-
8	To make effort to learn the events' reasons, evidences and results	40	95,2	2	4,8	-	-	-	-
9	To comprehend subjects easily	42	100	-	-	-	-	-	-
10	To make interesting inferences by interpreting the information acquired in different times and	39	92,9	3	7,1	-	-	-	-

	different places								
11	To think of the best solution to reach the correct result	39	92,9	2	4,8	1	2,4	-	-
12	Not to be discouraged by obstacles ; on the contrary, to head for trying	39	92,9	3	7,1	-	-	-	-
13	To have new and original ideas, discoveries and works	38	90,5	4	9,5	-	-	-	-
14	To have fluency in speaking	29	69	13	31	-	-	-	-
15	To participate in discussions	40	95,2	2	4,8	-	-	-	-
16	To have better vocabulary knowledge than peers	35	83,3	5	11,9	2	4,8	-	-
17	To listen to opposite criticism	41	97,6	1	2,4	-	-	-	-
18	To take the individual and group responsibility	41	97,6	1	2,4	-	-	-	-
19	To be selected as leader in activities	35	83,3	7	16,7	-	-	-	-
20	To be consulted for advice by others	41	97,6	1	2,4	-	-	-	-
21	To like helping	38	90,5	4	9,5	-	-	-	-
22	To be sensitive to others' problems	37	88,1	5	11,9	-	-	-	-
23	To attend organizations in and out of school	41	97,6	1	2,4	-	-	-	-
24	To like humor and to produce original jokes	37	88,1	4	9,5	1	2,4	-	-
25	To show more reactions to rhythm and melody than other children	29	69	6	14,3	7	16,7	-	-
26	To be interested in various musical instruments and try to play them	27	64,3	5	11,9	8	19	2	4,8
27	To learn musical works in a short time	30	71,4	10	23,8	2	4,8	-	-
28	To be willing and struggle to create new and original musical works	26	61,9	3	7,1	9	21,4	4	9,5
29	To listen to music and to like attending musical organizations	29	69	7	16,7	3	7,1	3	7,1
30	To like complying with others when singing songs	31	73,8	4	9,5	7	16,7	-	-
31	To make collections about musicians, singers and musical tracks	18	42,9	5	11,9	13	31	6	14,3
32	To use musical instruments so as to express emotions and thoughts	22	52,4	5	11,9	9	21,4	6	14,3
33	To like painting and drawing in different subjects	27	64,3	7	16,7	8	19	-	-
34	To plan paintings and give them depth	25	59,5	9	21,4	5	11,9	3	7,1
35	To use appropriate proportions between parts	27	64,3	5	11,9	7	16,7	3	7,1
36	To spend long times in work of painting	23	54,8	9	21,4	7	16,7	3	7,1
37	To be interested in creating objects from soft appliances such as mud, soap, plastics	28	66,7	3	7,1	8	19	3	7,1
38	To be interested in other people's work of art and painting	23	54,8	10	23,8	9	21,4	-	-
39	To be willing to express emotions and thoughts via painting	23	54,8	8	19	7	16,7	4	9,5
40	To bring unique comments into various painting and drawing	27	64,3	9	21,4	6	14,3	-	-
41	To utilize painting successfully so as to express experiences and emotions	24	57,1	9	21,4	5	11,9	4	9,5
42	To make a drawing and painting distinctly from other children	28	66,7	5	11,9	6	14,3	3	7,1
43	To be energetic	34	81	7	16,7	1	2,4	-	-
44	To like attending race based games.	38	90,5	4	9,5	-	-	-	-
45	To show supremacy determinedly and constantly in race based games.	37	88,1	1	2,4	3	7,1	1	2,4
46	To be one of the best physical condition in the classroom	29	69	9	21,4	3	7,1	1	2,4
47	To like volleyball, basketball, football,	31	73,8	7	16,7	4	9,5	-	-

	scouting, swimming, tennis etc. and to attend some of them constantly.							
48	To desire to devote most of time to various physical activities	32	76,2	4	9,5	5	11,9	1	2,4
49	To like following sport races from newspaper, magazines and other media organs. To try out in this matter appropriately.	35	83,3	1	2,4	6	14,3	-	-
50	To show an interest in dramatic activities.	39	92,9	3	7,1	-	-	-	-
51	To make out roles which characterize animals, human beings and other objects.	29	69	12	28,6	1	2,4	-	-
52	To manage to make out facial expressions, gesture, posture and varied body movements	34	81	7	16,7	1	2,4	-	-
53	To like withdrawing the listeners' emotional reaction	35	83,3	5	11,9	2	4,8	-	-

In this test consisting of 53 items, all the teachers (%100) stated that the students had the characteristics in 9. item. They expressed that the mentioned behaviour was always observed in many activities by marking the item A. A and B letters, mostly A, were chosen and marked in the items numbered 1, 2, 5, 6, 7, 8, 10, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 44, 50. A, B and C letters were marked in the items numbered 3, 4, 11, 16, 24, 25, 27, 30, 33, 38, 40, 43, 47, 49, 51, 52 ve 53. The items numbered 26, 28, 29, 31, 32, 34, 35, 36, 37, 39, 41, 42, 45 ve 46 became the ones in which four letters were marked.

About the characteristics made teachers the comment "The mentioned behaviour is *always* seen in most activities". The exam made by KUYEM showed that determining the students with superior intelligence was carried out properly. In addition to this, teachers reached the precision about determining superior talented students in Primary and Secondary School Student Observation Form chosen by Ministry of National Education. The fact that the answers intensified in letter A and decreased towards letter D made the inference possible that the test's validity was high and teachers answered the items realistically.

Table 2: *Degrees of relationships between General Ability and General Culture test points with Verbal-Performance and General Total points*

	Verbal	Performance	General Total
General Ability-General Culture	0,120	0,240	0,279

As it can be understood from Table 2, the correlation rate was 0,12 between General Ability and General Culture Points and WISC-R test's verbal points. In the same vein, it was recognized that there was low relationship with 0,24 correlation rate between general ability and general culture points and performance points, 0,279 correlation rate between general ability and general culture. From this viewpoint it can be regarded there was positive but very low relationship between general culture and general ability test and WISC-R tests.

WISC-R consists of two sections and two different grading are implemented for students. These are verbal and performance points. By utilizing these points, a general total point is given to students and it corresponds to intelligence point. Correlation numbers between verbal points and performance points with general total points were presented in Table 3 in the study,

Table 3: *Degrees of relationships between verbal-performance points and general total points*

	Total
Verbal point	0,589
Performance point	0,687

In Table 3, r: 0,589 correlation rate between students' verbal points and general total points and r: 0,687 correlation rate between performance points and general total points were found. These results are meaningful in 0,01 level. This findings show that there is a highly relationship between verbal/performance points and general total points and verbal and performance points are more suitable for determining students than general ability and general culture points.

Conclusion

In planning of determining and training superior talented students, it is possible that the students with superior intelligence or superior talent may be overlooked even if they indicate so. That situation means huge loss for the country. It will be a correct choice to make use of classroom teachers in that they have the opportunity to evaluate students among peers; however, it is necessary to train teachers to do this. If just general ability and general culture tests are applied, it may not present suitable results. It is possible for some students to be overlooked when they are selected in general culture and general ability tests and subjected to WISC-R test. For this purpose, it is supposed that every student nominated by teacher be subjected to WISC-R test and it is better to integrate them according to the results. The results have indicated that only general culture and general ability tests are not enough for determining superior talented students. If WISC-R tests are used along with general culture and general ability tests, it means that both students' intelligence level and general knowledge level have been determined. It will be easier to specify fields and methods after this determination.

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