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Research Article

Comparing The Adequacy of The Teaching Activities Applied By Special Education Teachers At The Preparatory Stages of Reading And Writing[1]

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Abstract:

Most of the educational activities include the activities regarding reading, writing and speaking abilities. İndividuals learn reading-writing through the verbal and written communication processes of their own culture. The most important thing is to be patient in this most troublesome period of the education process. Teacher must know the most effective method a student could learn easier and must make a choice by considering student's perceptions. This study aims to investigate the teaching activities which special education teachers apply during teaching reading-writing. It is conducted through survey method, based on quantitative data. 297 special education teachers participated in the study. Data is analyzed through SPSS data analysis program, t-test and ANOVA test. At the end of the study significant differences are found in the reading-writing preparation activities according to their age, work experience and graduation branch.

Keywords: Special education, preparation to reading-writing, teacher, competency

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INTRODUCTION

Nowadays Educating students with special needs requires some special arrangements. The things what make special education are these arrangements. In general education activities suitable to improvement of typically-developing students are designed according to age groups in advance and teaching environments are arranged in line with it (Özen, 2012). However, in special education, teaching environments are arranged according to performance of students with special needs.

Ministry of Education defines the individual with special needs as someone who are different from their peers in terms of individual characteristics and educational competencies (MEB, 2006). Following students are defined as the students who need special education: mentally retarded students, students with learning disability, students with emotional and behavioral disorder, physically retarded students, students with speaking disorder, hearing-impaired students, gifted students, talented students. These students couldn't take advantage of general education and need special education services. In all countries regardless of its development level there are individuals who couldn't take advantage of general education services due to their physical, mental, emotional and learning characteristics (Kırbıyık, 2018: 8).

The curriculum for individuals with special needs must be prepared to develop the abilities they can use in daily life (Babaoğlan vd, 2010: 347). The positive attitudes of pre-school teachers to students with special needs are of great significance in terms of social and academic success of both typical students and students with special needs. The source of the negative attitudes of teachers is not having necessary preliminary training regarding special education curriculum. Therefore, activities to change these negative attitudes into positive must be done (Güven, 2011).

Students with special needs may show academic, social and occupational insufficiencies due to the emotional problems that hinders their development. Therefore, teachers must take these characteristics into consideration while planning teaching-learning process. For a decent inclusive education, teachers must analyze the existing insufficiencies by trying to identify students' affective behaviours and basic problems (Şahin,2010).

In general, society and parents attach importance to literacy. Being illiterate is seen as a great flaw. This skill is of great importance for typically developed children as well as children with special needs. Because those children with special needs know reading and writing is a significant step for his independent life. So, what is literacy? Academically, literacy is defined as "communicating by using symbols and extracting meaning from symbols". As can be understood from the definition children must be in the concrete operational stage to start teaching reading and writing.

The primary goal of education of mentally retarded children is to teach them independent life skills. Independent life skills include necessary skills for mentally retarded

children to live independently. There are various classifications for independent life skills. One of the most known classifications is suggested by Close, Sowers, Halpern and Bourbeau (1985). This classification separates independent life skills into four categories as necessary basic skills for achievement, necessary skills for adaptation, daily life skills, and occupational preparation and skills (Cavkaytar, 1998). As seen many skills that a mentally retarded children must learn are closely related to reading – writing. In other words, the main goal of teaching reading and writing to a mentally retarded child is teaching him independent life skills.

There are two important things in special education before starting teaching reading and writing. First one is to answer following questions; what handicaps does the child have? What kind of school life will the child have? Does the student have autism, Down syndrome, learning disability or developmental retardation? What is the most suitable method for him? Does he have inclusive education or go to special sub-class or just get rehabilitation? The second important thing to take into consideration is the readiness of the student. Students who have sufficient readiness level have to perform some prerequisite skills for learning reading and writing. There are nine prerequisite skills for a student with special needs to learn reading and writing. These skills are; general knowledge and vocabulary (fruits, vegetables, vehicles, animals, numbers, occupations, verbs, geometric figures, opposite concepts), vision (finding the same one, finding the different one, completing, matching pictures, colors, numbers and letters), hearing (sound imitation, locating the source of the sounds, guessing the sounds with his eyes closed, listening, answering questions regarding what he listens), speaking (self-expression, introducing his family, answering questions), muscle development (fine and gross motor skills, catching ball, tearing paper, playing with dough, string, etc.) social and emotional adaptation (having the sufficient prerequisite skills), listening, holding pencil, using fingers while reading, coloring limited areas, and drawing.

The most important thing for teaching reading and writing process is whether the child ready for the school or not. This readiness show itself in two forms. The first one is being physically ready and this is called maturation. Children cannot learn reading and writing before reaching a certain maturation as the birds must reach a certain maturation for flying (Binbaşıoğlu, 2004). To explain the concept of being ready for reading-writing, first of all the readiness term must be clarified. In the literature it is defined as someone's reaching a certain maturation to fulfil a task and his having necessary knowledge, ability and attitude to fulfil this task. So, readiness covers both maturation and necessary pre-competencies. Although there are different views regarding the starting age of learning reading-writing, there is a consensus on the necessary abilities to start teaching it. In order a student to be ready for learning reading-writing he must have some certain abilities. These abilities are explained below. Children must know the necessary words used in teaching reading-writing (Keskinkılıç, 2002; Çelenk, 2003; Akyol, 2014). It is most likely that mentally retarded students have deficiency in vocabulary knowledge. Therefore, teachers must

define the words he is going to use while teaching reading-writing and teach these words months ago.

Children could narrate his observations and chain of events in a story without ruining its order (Çelenk, 2003). The presence of this ability in mentally retarded students must be controlled and if they don't have it, they must be encouraged to narrate stories without ruining its order. For example, a narrating activity could be done by following this order; firstly, tell a simple with story cards. Secondly give them the cards by tangling up their order and then make them tell the story again by reordering the story cards.

Children must solve simple problems they encounter. The most troublesome issue for mentally retarded children is problem solving. Thus, by doing exercises with simple problems, their problem solving skill must be improved. For instance, asking following questions may improve their problem solving ability: which one of these two keys open the door? How can you take out a nut put in a deep container? What can a thirsty student do? Answering questions and following instructions are important abilities for learning reading-writing. Therefore, in the preparation period these abilities must be taught if they don't have them.

Children must remember the important points of an event they listen. It is rare for mentally retarded children to have this ability. Therefore, exercises beginning with remembering the important points of an event they experience must be done and then they must do exercises regarding remembering important points of events they listen. They must recognize the phonetic and form of a word to distinguish one word from another. If this ability isn't improved in mentally retarded student, they must do exercises to distinguish sounds they hear every day like door creaking sound or sound of a car's horn and animal sounds like cat and dog. They must have a desire for learning reading-writing. Therefore, mentally retarded students must be encouraged to learn reading-writing and by avoiding negative experiences in the learning reading-writing period, their motivation towards learning reading-writing must be maintained. Students' chronic illnesses, muscle and joint problems and general health status as well their visual and hearing problems must be examined carefully.

Purpose of the Study

Retarded students are educated according to their retardation group. In special education every retarded child gets preparation activities for reading-writing suitable for their retardation group. Preparation activities for reading-writing for students with special needs could be given within the individualized education programs and the prepared steps could be applied in the education process in a certain order. This study aims to investigate the activities applied by special education teachers in the preparation stage for reading-writing. To fulfil this aim answer to following question is sought; "what are the views of special education teachers regarding what must be done in the preparation stage for reading-

writing?" Following factors are examined; genders, ages, graduation branches, duration of working in the special education, and whether they do preparation activities to teach reading-writing to mentally retarded children. Moreover, the views of special education teachers regarding what must be done to improve fine and gross motor skills, visual dicrimination, auditory discrimination, directional motor and mental preparation abilities are examined.

METHOD

This study, aiming to determine the views of special education teachers regarding reading-writing instruction, is conducted through survey model based on quantitative data. Survey model aims to examine a present situation as it is. The thing, event or individual discussed is identified within its own conditions (Karasar, 2005).

Population and Sample

The population of the study composed of special education teachers working in the central districts of Konya (α=297). Study is conducted on a randomly chosen sample. The representation power of sample group is defined and simple random sampling method has been used.

Data Collection Tool

297 forms have been collected from the all 297 teachers. The demographic data of the survey is shown in the tables below. 98 of the participants are male and 199 of them are female. 274 of them did preparation activities for reading-writing for mentally retarded students before and 22 of them didn't. 133, 90, 43, and 31 teachers are ages between 21-30, 31-40, 41-50, 51 and above respectively. 74 of the teachers graduated from special education, 109 of them graduated from classroom teacher department and 114 of them graduated from other departments. As for years of seniority 184, 64, 28, 7, 14 teachers have worked between 0-5, 6-10, 11-15, 16-20, 21 and above years respectively.

RESULTS

Table 1 shows whether the gender variable affects the preparation activities for reading-writing. As understood from the analyzed data, no significant difference is found according to gender regarding fine motor coordination, gross motor coordination, visual and auditory discrimination, directional motor coordination and mental preparation activities (p>0,05). This result reveals that in the preparation activities for reading-writing there isn't any difference between male and female teachers.

Table 1
Dissemination of Views of teachers regarding preparation activities for reading-writing by their gender

Abilities	Gender	N	Avarage	Std. D.	df	t	p
Fine motor	Female	199	74,88	8,703	295	-1,410	0,160
	Male	98	76,39	8,516			
Gross Motor	Female	199	48,87	5,074	295	0,967	0,334
	Male	98	48,29	4,628			
Visual Discrimination	Female	199	62,64	7,871	295	0,866	0,387
	Male	98	61,81	7,21			
Auditory Discrimination	Female	199	32,10	3,384	295	0,274	0,784
	Male	98	31,98	3,520			
directional Motor	Female	199	22,02	3,386	295	-0,826	0,410
	Male	98	22,35	2,807			
Mental Preparation	Female	199	31,80	3,767	295	0,152	0,879
	Male	98	31,73	3,554			
Total	Female	199	272,0	28,675	295	-0,132	0,895
	Male	98	272,54	24,619			

The findings regarding teachers' views about doing a reading-writing activity with mentally retarded students when conducting preparatory activities for reading-writing are shown in table 2.

Table 2
Teachers' views about doing a reading-writing activity with mentally retarded students when conducting preparatory activities for reading-writing

Abilities	Activity status	N	Average	fd	t	P
Fine motor	Did Activities	274	75,51	294	1,241	,216
	Didn't Do Activities	22	73,14			
Gross Motor	Did Activities	274	48,68	294	,250	,803
	Didn't Do Activities	22	48,41			
Visual Discrimination	Did Activities	274	62,51	294	1,485	,139
	Didn't Do Activities	22	59,95			
Auditory Discrimination	Did Activities	274	32,12	294	1,481	,140
	Didn't Do Activities	22	31,00			
Directional Motor	Did Activities	274	22,16	294	,667	,506
	Didn't Do Activities	22	21,68			
Mental Preparation	Did Activities	274	31,84	294	1,188	,236
	Didn't Do Activities	22	30,86			
Total	Did Activities	274	272,66	294	1,258	,209
	Didn't Do Activities	22	265,05			

Results suggest that there is no difference between the teachers who did activities and who didn't in terms of fine motor coordination, gross motor coordination, visual and auditory discrimination, directional motor coordination and mental preparation activities (p>0,05). So, views of teachers, who did preparation activities to teach reading-writing to

mentally retarded students and who didn't, regarding preparation activities are the same.

Table 3 shows the findings regarding whether the age variable affects the teachers' views about preparation activities for reading-writing"

Table 3

Teachers' views regarding preparatory activities for reading-writing in terms of age

Abilities	Age	N	X	sd	F	p	Relation
Fine motor	21-30	133	75,95				
	31-40	90	74,73	3			
	41-50	43	75,58	294	0,431	0,731	-
	51 and above	31	74, 72	297			
Gross Motor	21-30	133	49,53				
	31-40	90	47,63	3			
	41-50	43	48,26	294	2,845	**0,038**	1-2
	51 and above	31	48,75	297			
Visual Discrimination	21-30	133	63,38				
	31-40	90	61,96	3			
	41-50	43	61,58	294	1,735	0,160	-
	51 and above	31	60,31	297			
Auditory Discrimination	21-30	133	32,20				
	31-40	90	31,63	3			
	41-50	43	32,51	294	0,786	0,503	-
	51 and above	31	32,06	297			
Directional Motor	21-30	133	22,16				
	31-40	90	21,88				
	41-50	43	22,65	294	1,645	0,406	-
	51 and above	31	21,94	297			
Mental Preparation	21-30	133	31,94				
	31-40	90	31,44	3			
	41-50	43	32,44	294	1,101	0,349	-
	51 and above	31	31,16	297			
Total	21-30	133	275,16				
	31-40	90	269,28	3			
	41-50	43	273,02	294	1,185	0,316	-
	51 and above	31	267,56	297			

As is seen in Table 3, there is no significant difference between the age groups in terms of fine motor coordination, gross motor coordination, visual and auditory discrimination, directional motor coordination and mental preparation activities (p>0,05). Results reveal that views of teachers for preparation activities in terms of their age are the

same. However, in terms of gross motor coordination preparation activities teachers whose ages are between 21-30 have higher points than teachers whose ages are between 31-40.

The findings regarding whether there is a significant difference according to their graduation department are shown in Table 4.

Table 4
Views of teachers regarding their graduation department

Abilities	Graduation Department	N	Avarage	sd	f	P	Relation
Fine motor	Special Education	74	77,39	2	3,437	**,033**	1-3
	Classroom Teaching	109	75,48	295			
	Others	114	74,04	297			
Gross Motor	Special Education	74	48,88	2	0,194	,823	
	Classroom Teaching	109	48,80	295			
	Others	114	48,47	297			
Visual Discrimination	Special Education	74	63,85	2	2,223	,110	
	Classroom Teaching	109	61,39	295			
	Others	114	62,31	297			
Auditory Discrimination	Special Education	74	33,09	2	4,802	**,009**	1-2
	Classroom Teaching	109	31,59	295			1-3
	Others	114	31,83	297			
Directional Motor	Special Education	74	22,23	2	0,066	,936	
	Classroom Teaching	109	22,06	295			
	Others	114	22,11	297			
Mental Preparation	Special Education	74	31,96	2	0,127	,881	
	Classroom Teaching	109	31,75	295			
	Others	114	31,69	297			
Total	Special Education	74	277,41	2	1,758	,174	
	Classroom Teaching	109	270,66	295			
	Others	114	270,46	297			

Table 4 shows that there is no significant difference among graduation departments in terms of fine motor coordination, gross motor coordination, visual and auditory discrimination, directional motor coordination and mental preparation activities (p>0,05). Results reveal that views of special education teachers, who graduated from different

departments, regarding preparation activities for reading writing, are the same. However, a significant difference is found in terms of preparation activities for reading-writing points of special education teachers regarding their graduation department (f=3,437; p<0,000). The results of TUKEY test done to find the source of difference revealed that there is no difference between the teachers graduated from special education department and teachers graduated from classroom teaching department, but a significant difference is found between the teachers graduated from special education department and teachers graduated from other departments.

Findings regarding whether there is a significant difference between the years of seniority and preparation activities for reading-writing are shown in table 5.

Table 5
Views of teachers regarding their years of seniority

Abilities	Years of Seniority	N	Average	sd	f	p	Relation
Fine motor	0 – 5	184	75,76				
	6–10	64	74,33	4			
	11-15	28	74,89	293	,793	,531	-
	16-20	7	79,57	297			
	21 and above	14	74,53				
Gross Motor	0 – 5	184	49,27				
	6–10	64	48,08	4			
	11-15	28	46,71	293	2,151	,075	-
	16-20	7	48,71	297			
	21 and above	14	47,87				
Visual Discrimination	0 – 5	184	62,68				
	6–10	64	61,02	4			
	11-15	28	62,82	293	,616	,652	-
	16-20	7	62,86	297			
	21 and above	14	63,07				
Auditory Discrimination	0 – 5	184	32,18				
	6–10	64	31,50	4			
	11-15	28	31,54	293	1,574	,181	-
	16-20	7	32,29	297			
	21 and above	14	33,73				
Drictional Motor	0 – 5	184	22,22				
	6–10	64	21,48	4			
	11-15	28	21,64	293	2,404	,050	-
	16-20	7	24,29	297			
	21 and above	14	23,53				
Mental Preparation	0 – 5	184	32,26				
	6–10	64	30,56	4			
	11-15	28	31,11	293	2,888	,023	1-2
	16-20	7	32,00	297			
	21 and above	14	32,20				
Total	0 – 5	184	274,14				
	6–10	64	266,97	4			
	11-15	28	268,71	293	1,103	,355	-
	16-20	7	279,71	297			
	21 and above	14	274,93				

As is seen in Table 3, there is no significant difference among the years of seniority in terms of fine motor coordination, gross motor coordination, visual and auditory discrimination, directional motor coordination and mental preparation activities (p>0,05). However, in terms of mental preparation activities teachers who have a working experience between 0-5 years have higher points than teachers who have working experience between 6-10 years.

Findings about the views of teachers regarding what must be done in the preparation period in the field of fine motor coordination are shown in Table 6.

Table 6
Teachers' Views regarding what must be done to improve fine motor coordination skills when conducting preparatory activities

Preparation Activities for Improving Fine Motor Coordination Skills		**Total**
1.	Drawing lines by connecting dots	1035
2.	Holding the pen correctly	1027
3.	Drawing on a paper	1020
4.	Unrestricted area painting	1014
5.	Restricted area painting	1007
6.	Drawing on different surfaces	1002
7.	Drawing a model line between two lines	1000
8.	Bead string	991
9.	Finger following	988
10.	Drawing between two defined lines without touching them	988
11.	Drawing by copying a model	986
12.	Scribbling	967
13.	Drawing with different materials	964
14.	Drawing wave, snake and rope	962
15.	Drawing continuous and italic lines	953
16.	Drawing bird nest, circle and cloud	944
17.	Drawing lines in the sand	933

As is seen in table 6, special education teachers suggest that drawing by connecting dots exercises, exercises for holding the pen correctly and drawing on a paper exercises must be done to improve fine motor coordination abilities. They state it is necessary to do exercises such as unrestricted area painting, restricted area painting, drawing on different surfaces, and drawing a model line between two lines. However, they thought it isn't necessary to do exercises such as drawing bird nest, circle, and cloud, drawing continuous and italic lines, drawing with different materials, scribbling, drawing by copying the model, drawing wave, snake and rope, following with finger.

Special education teachers' views about what must be done to improve gross motor coordination skills when conducting preparatory exercises are given in Table 7.

Tablo 7
Special education teachers' views about what must be done to improve gross motor coordination skills when conducting preparatory exercises

	Preparatory Activities for improving gross motor coordination skills	**Total**
1.	Playdough and clay activities	1040
2.	Arm-hand & wrist exercises	1035
3.	Cut and paste activities	1033
4.	Ruffling and tearing activities	1022
5.	Activities for sitting correctly	1014
6.	Catching ball activities	1004
7.	Activities for holding and opening book	985
8.	Air writing and writing on the board activities	977
9.	Putting and taking off activities with Legos	965
10.	Writing in the sand activities	918
11.	Writing with beans activities	858

As is seen in table 7, special education teachers think that it is necessary to do activities such as playdough and clay, arm-hand and wrist exercises, cut and paste, ruffling and tearing, sitting correctly, catching ball. However, they don't consider writing with beans, put-take off Legos, air writing and writing on the board, holding and opening a book, and sand writing activities necessary.

Table 8 shows the findings regarding special education teachers' views about must be done to improve visual discrimination abilities when conducting preparatory activities.

Table 8
Teachers' views about what must be done to improve visual discrimination abilities when conducting preparatory exercises

	Preparatory activities for improving visual Discrimination Abilities	**Total**
1.	Discriminating pictures	1049
2.	Finding the different one	1024
3.	Telling stories based on a picture	1013
4.	Discriminating geometric figures	1011
5.	Finding the same one	1009
6.	Completing activities and matching pictures, colors, numbers and letters	1008
7.	Recognizing a picture he has seen before	1005
8.	Distinguishing from others	997
9.	Telling the details that he sees in pictures.	993
10.	Finding the visual equivalent of the words he hears	988
11.	Finding the suitable pictures for a sentence he hears	955
12.	Answering questions with the help of pictures	953
13.	Making up stories with the help of pictures	942
14.	Talking about characters, events, places and time of a story he made up with the help of pictures	942

Special education teachers consider discriminating pictures, finding the different one, telling stories based on a picture discriminating geometric figures, finding the same one, completing, matching pictures, colors, numbers, and letters, and recognizing a picture he has seen before activities necessary. However, they think it isn't necessary to do activities such as telling the details that he sees in a picture, finding the visual equivalents of the words he hears, making up stories with the help of pictures, taking about characters, event, places and time of a story he make up with the help of pictures, finding the suitable pictures for the sentences he hears, and distinguishing from others.

The findings regarding special education teachers' views about what must be done to improve auditory discrimination abilities when conducting preparatory activities are shown in Table 9

Table 9
Teachers' views about what must be done to improve Auditory Discrimination abilities when conducting preparatory activities

	Preparatory Activities for Improving Auditory Discrimination Abilities	**Total**
1.	Discriminating the sounds he hears in his environment (animal sounds, car horn sounds)	1034
2.	Matching the sounds with their sources (bow-wow = dog)	1032
3.	Imitating sounds	1019
4.	Locating the source of sounds	1018
5.	Guessing the sounds with his eyes closed	1015
6.	Listening	1003
7.	Answering questions regarding what he listens	993

As is seen in Table 9, special education teachers consider the following activities necessary; discriminating the sounds he hears in his environment (animal sounds, car horn sounds), matching the sounds with their sources (bow-wow = dog) imitating sounds, locating the source of sounds, guessing the sounds with his eyes closed, listening.

Table 10 shows the findings regarding special education teachers' views about what must be done to improve directional motor coordination abilities when conducting preparatory activities.

Table 10
Teachers' views about what must be done to improve Directional Motor Coordination abilities when conducting preparatory activities

	Preparatory Activities for Improving Directional Motor Coordination Abilities	**Total**
1.	Teaching right-left concept	1017
2.	Turning page	994
3.	Putting into order the sequential event cards from left to right	984
4.	Putting into order the number cards from left to right	979
5.	Painting the figures starting from the ones in the left to right	965

Special education teachers consider that it is necessary to do activities to teach right-left concept. But they don't consider the following activities necessary; turning page, putting

into order the sequential event cards from left to right, putting into order the number cards from left to right, painting the figures starting from the ones in the left to right.

The findings regarding special education teachers' views about what must be done as mental preparation activities when conducting preparatory activities are shown in Table 11.

Table 11
Teachers' views about what must be done as mental preparation activities when conducting preparatory activities

	Mental Preparation Activities	**Total**
1.	Concentrating	1044
2.	Teaching the names of the objects	1011
3.	Recognizing the colors	1007
4.	Matching letters	1005
5.	Vocalizing the letter in the words (vocalizing the letter he is shown)	1002
6.	Finding the similarities and differences in pictures	1002
7.	Finding the letter in a given word	991

Special education teachers consider the following activities necessary in the mental preparation stage when conducting preparatory activities for reading-writing; concentrating, teaching the names of the objects, recognizing the colors, matching letters, vocalizing the letter in the words (vocalizing the letter he is shown), finding the similarities and differences in pictures. However, they don't think it is necessary to do Finding the letter in a given word activity.

CONCLUSION AND SUGGESTIONS

Male and female special education teachers have the similar views regarding preparatory activities for reading-writing. Therefore, all the studies conducted on preparatory activities for reading-writing must be done regardless of gender. The views of teachers doing preparatory activities for reading-writing with mentally retarded students and the teachers who didn't do are the same. So, all the studies regarding preparatory activities for reading-writing must be conducted regardless of having experience with mentally retarded students. Special education teachers' views about preparatory activities in terms of their age are the same. However, in terms of gross motor coordination preparation activities teachers whose ages are between 21-30 have higher points than teachers whose ages are between 31-40. It may be beneficial to conduct a study to define the reason of this difference. Because in the following years the difference disappears. Special education teachers who graduated from other departments have the same views towards preparatory activities. Also there is no significant difference between views of special education teachers who graduated from classroom teaching department and teachers who

graduated from special education department. However, a significant difference is found between the views of special education teachers who graduated from special education department and other departments. Special education teachers graduated from departments other than special education and classroom teaching must be supported.

In terms of working experience special education teachers' views about preparatory activities with regard to fine and gross motor coordination, visual discrimination, auditory discrimination, and directional motor coordination. However, in terms of working experience, there is a significant difference in special education teachers' views about mental preparation activities. Teachers who have a working experience between 0-5 years have higher points than teachers who have working experience between 6-10 years.

When the special education teachers' views regarding what must be done to improve fine motor coordination skills are examined, they consider drawing lines by connecting dots, holding the pen correctly, drawing on a paper, unrestricted area painting, restricted area painting, drawing on different surfaces, drawing a model line between two lines activities necessary. Nevertheless, they consider it is not so necessary to do activities such as drawing lines in the sand, bead string, finger following, drawing between two defined lines without touching them, drawing by copying a model, scribbling, drawing with different materials, drawing wave, snake and rope, drawing continuous and italic lines, drawing bird nest, circle and cloud. However, all these activities are so important to prepare students reading-writing.

When the special education teachers' views regarding what must be done to improve gross motor coordination skills are examined, they consider playdough and clay, arm-hand and wrist exercises, cut and paste, ruffling and tearing, sitting correctly, catching ball activities necessary. However, they think it is unnecessary to do activities such as writing with beans, put-take off Legos, air writing and writing on the board, holding and opening a book, and sand writing.

When the special education teachers' views regarding what must be done to improve visual discrimination abilities are examined, special education teachers consider discriminating pictures, finding the different one, telling stories based on a picture, discriminating geometric figures, finding the same one, completing, matching pictures, colors, numbers, and letters, and recognizing a picture he has seen before activities necessary. However, they think it isn't so necessary to do activities such as telling the details that he sees in a picture, finding the visual equivalents of the words he hears, making up stories with the help of pictures, taking about characters, event, places and time of a story he make up with the help of pictures, finding the suitable pictures for the sentences he hears, and distinguishing from others.

When the special education teachers' views regarding what must be done to improve auditory discrimination abilities are examined, they consider the following activities

necessary; discriminating the sounds he hears in his environment (animal sounds, car horn sounds), matching the sounds with their sources (bow-wow = dog) imitating sounds, locating the source of sounds, guessing the sounds with his eyes closed, listening. Nevertheless, they don't consider answering questions regarding what he listens activity necessary.

When the special education teachers' views regarding what must be done to improve directional motor coordination skills are examined, they consider teaching right-left concept activity necessary. But they consider the following activities less necessary; turning page, putting into order the sequential event cards from left to right, putting into order the number cards from left to right, painting the figures starting from the ones in the left to right.

When the special education teachers' views regarding what must be done as mental preparation activities when conducting preparatory activities are examined, Special education teachers consider the following activities necessary in the mental preparation stage when conducting preparatory activities for reading-writing; concentrating, teaching the names of the objects, recognizing the colors, matching letters, vocalizing the letter in the words (vocalizing the letter he is shown), finding the similarities and differences in pictures. However, they don't think it is necessary to do Finding the letter in a given word activity.

Results revealed that special education teachers do not consider many activities which must be done to improve fine and gross motor coordination, visual discrimination, auditory discrimination, directional motor coordination and mental preparation necessary when conducting preparatory activities for reading writing. This shows that special education teachers do not have sufficient knowledge regarding preparatory activities for reading-writing. Therefore, special education teachers must be trained about this issue regardless of their different characteristics.

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Research Article

The Development of LD Education in Saudi Arabia: Services and Implications for the future

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Abstract:

Saudi Arabia has been consistently honing its educational services for students with Learning disabilities (LD) since the recognition of the category by the Ministry of education in 1996. This review includes scholarly published articles and government websites to address the following research questions: 1) What were the main factors to influence the educational services offered to students with LD in Saudi Arabia within the past decade? 2) To what extent have these changes been implemented across genders? We conclude that the main factors include: legislation implementation, government support, awareness level of the society, globalization, and an increase in specialized cadre of Saudi special education professionals. Also, at this time, the LD services are equal across gender. Future research should focus on establishing a more specialized identification process, and provide greater training opportunities for both general and special education teachers on the needs of students with LD. Also, the authors suggest that highlighting the impact of collaboration between regular and special education teachers are essential.

Keywords: Learning disabilities, special education, public education, Saudi Arabia

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INTRODUCTION

Although Saudi Arabia is not known for its social and cultural changes, much has been changing in the field of education, in terms of gender equality and LD education. In 1925, when public schooling became official in Saudi Arabia, females did not have access to schools (Al Harbi, 2014). At that time, girls were taught at home by same-gender tutors. In 1960, King Faisal established public schools for females separate and unequal to the education that was available for males (Al Harbi, 2014). Although public education for females faced several obstacles (Al Harbi, 2014), female literacy rate reached 91 percent in comparison to 97 percent for men (World Economic Forum,2014).

For the past 15 years, special education services in Saudi Arabia have received a great deal of attention (Alnahdi, 2014). In fact, Saudi Arabia is currently considered one of the leaders in the implementation of LD learning approaches among the Arab world (Al-Mousa, 2010). The Saudi government has encouraged and financially supported the education sector to ensure that all individuals, regardless of gender, age and race is provided access to free and equal education (Alquraini, 2011).

The Ministry of Education recognized special education as a category 25 years after the public education system was established.in 1950s, the first blind private school was sponsored by the Ministry (Bin Battal, 2016), which served only blind adults with no other special needs category (AL-Wabli,1996). In 1960, the Ministry of Education opened the first official public school for male blind students (Aldabas, 2015). Once the ministry created the Department of Special Education in 1962, three distinct types of disabilities were identified: intellectual disability, blindness, and deafness (Afeafa, 2000).

In 2000, the Saudi government established a disability law (Alquraini, 2011), This law ensured that all individuals with disabilities would have access to free and adequate medical, rehabilitation, social, and educational services in the public sector (Alquraini, 2011). Although there were rapid gains in services for students with disabilities in Saudi Arabia, there is still a need to improve the special education services provided (Alruwaili, 2016). One example is the category of learning disability (LD), which was officially recognized in 1996 (Al-hano, 2006). Since then, the number of students in elementary schools identified with learning disabilities has been rising (Alnaim, 2015). Afeafe (2000), Alnaim (2015) and Alquaini (2011) have described the attempts of the Saudi government in providing services to students with LD. With the growing number of LD students, most of the research literature has been focusing on how to identify LD students, stressing the need for services. However, there is a formidable lack of research about what services are needed, and how to provide such services effectively (Alnaim, 2015).

Several studies have reported that there is a huge transformation in the service provided for students with disabilities since the establishment of disabilities legislations in the 1950's (Aldabas, 2015; Alquraini, 2011; Battal, 2016). Since the notion of special education

is relatively recent in Saudi Arabia, many studies focused on services for certain categories of disabilities, such as blindness and deafness (Afeafe, 2000; Battal, 2016). Most of the research literature highlights the development of services that occurred since the establishment of the special education services in Saudi Arabia (Alnaim, 2015; Alquraini, 2011; Alawafi, 2017). According to Battal (2016), the movement towards enhancing educational opportunities individuals with special needs in Saudi Arabia could be divided into three stages: the emergence, development, and expansion. The emergence stage, refers to the time when special education was first introduced, in 1958, to provide services to blind students. The development stage, in 1962, began when the first institution for blind and deaf students was opened for both genders in Riyadh—the capital city (Battal, 2016). After 1995, the third stage, the expansion stage, focused on delivering new learning models, recognizing more categories of disability, and providing students with the appropriate services (Battal, 2016).

The purpose of this paper is to investigate the factors that influenced the reform of practical special education services in Saudi Arabia for students with learning disabilities. Also, it will investigate whether there is a gender difference in provision of services for students with learning disabilities in terms of number of schools supported. The following research questions guided my study:

A) What have been the main factors that influenced the educational services provision for students with LD in Saudi Arabia within the past decade?

B) To what extent have these educational services been equal across gender?

Theory of Change

Michael Fullan, a Global Leadership Director and the Canadian educator has mobilized four specific elements to establish new pedagogies in education and learning. Fullan (2006) believes that the system can merely take place when the learning in schools is differentiated from each other. It is quite essential for the system reform and commonly named as "lateral capacity building". The change process in education and learning, as introduced by Michael Fullan., occurs voluntarily when there is the feeling of something going on incorrect or the existing techniques lack precision, suitability and correspondence with the present time period. Similarly, in Saudi Arabia, Services provision for blind students started voluntarily when there was lack of official learning institutions for the blind.

Fullan's characterized change by struggle, nervousness, and ambiguity that can further endow with the need of mastery, professional enhancement, and success. However, Fullan has described the change process as comprising of four interconnected stages such as initiation, implementation, continuation and outcomes. The stage of initiation is the stage of identifying and developing innovativeness while correlating with the main agenda. The most significant stage is the implementation stage as it comprises of all the key activities

and resources that are needed to carry out the plan (Fullan, 1991a). The third stage, continuation is the decision made for the institutionalization i.e. the positive and negative aspects of implemented change are evaluated in order to decide whether it should be continued or not. In the last stage, the outcomes of implemented change are judged where there is pressure, support, negotiation and changes occurring in thinking, skills and actions committed. In order to learn about the complexity of change process, Fullan (1993) endowed with the fundamental principles for thinking about change i.e. change is non-linear and can provide with unexpected and exciting outcomes, problems are inevitable and they cannot be solved without bringing change, complex changes must not be pressurized, change management is learnt internally and externally in good organizations, change does not work in centralization or decentralization, and every person happens to be a change agent (Fullan, 1993).

METHOD

In order to address the questions posed earlier, several steps were employed. I conducted a search for studies that investigated service provision for students with LD in Saudi Arabia using the terms "Special Education and Saudi Arabia", "Saudi education and learning disability", "Education System in Saudi Arabia", "Learning disability in Saudi Arabia", and "Special Education reform in Saudi Arabia". The following academic search engines were employed: ERIC, Education Full Text, PsycINFO, JSTOR, and Google Scholar. All articles accessed were published in scholarly peer- reviewed journals. Because the category of learning disability was only established in Saudi Arabia in 1996 (AL-hano, 2006), only article after 1996 were reviewed. Also, due to the limited availability of English-language articles related to the factors influence the Development of LD in Saudi Arabia, Arabic language search was conducted to gain access to any relevant information. In addition to articles published in Arabic, I also searched Saudi Government websites, such as the Ministry of Education, the Embassy of Saudi Arabia, and the General Authority for statistics of Saudi Arabia.

A Brief Snapshot of Saudi Arabia

Saudi Arabia is the largest country in the Arabian Peninsula (Al-Jadid, 2013), covering 830,000 square miles. Arabic is the official language. Saudi Arabia is divided into five regions with the city of Riyadh as its capital. Saudi Arabia is home for two holy Islamic mosques, Al- Masjid Al-Nabwi in Medina and AL Masjid AL Haram in Mecca, the cradle of Islam, where all Muslims should visit at least once in their life to do Haj. Since it is a sacred place, only Muslims are allowed to visit Mecca. As of 2016, the population of Saudi Arabia had reached 31,742,308 (General Authority of Statistics, 2016). The Kingdom of Saudi Arabia was established by King Abdulaziz Al-Saud in 1932 (Royal embassy, 2017). Geographically, it is surrounded by the Red Sea on the West, with a coastline of 1.76 kilometers, Oman and

Yemen on the South, and the United Arab Emirates, Qatar, and the Arabian Gulf coast line of 560 kilometers on the East (Ministry of Education, 2017). See Figure 1 and 2.

Figure 1. Map of Saudi Arabia

Figure 2. Saudi Arabia Location

Source: CIA Word Fact Book

Public Education in Saudi Arabia

The general education policy of Saudi Arabia affirms the right to access free education from the elementary level until higher education (AL-Mousa, 2010; El-Sanabary, 1994). The first public education in Saudi Arabia was established in 1925 (AL-Harbi, 2014; Ministry of Education, 2017). At that time, public education was only accessible for boys under the supervision of the director of knowledge. When King Abdulaziz Al-Saud unified the Kingdom of Saudi Arabia in 1932, education was limited; access to education was only available to wealthy individuals in the major cities (AL-Quraini, 2011). In 1951, the Ministry of Knowledge was established with the responsibility of boys' education in three levels: elementary, middle school, and high school. By 1953, the Ministry of Education was established with the responsibility of providing education to all levels (Battal, 2016).

The Ministry of education at that time was only responsible for males' education (Alamri, 2011). In line with the social status of women in Saudi Arabia that requires a strict separation of genders in educational institutions in all levels (Smith & Abouammoh, 2013), the General Presidency of Girls' Education (GPGE) was established in 1959, as a separate unit from the Ministry of Education, to ensure that Saudi girls have access to public education (Ministry of Education, 2017; El-Sanabary, 1994). The GPGE was established to guarantee that its progress aligns with religious values and Saudi tradition (El-Sanabary, 1994). The first public school for girls was opened in 1960. At that time, Saudi Arabia was the only Islamic country that had a separate female education policy, including separate administration and physical facilities (El-Sanabary, 1994). However, since 2003, the Ministry of Education has taken responsibility for the education of both genders and the General Presidency for Girls Education was terminated (Ministry of education, 2017). Despite the obstacles for girls in the beginning, today male and female rates of enrollment in primary

schools is almost equal (UNESCO, 2017), and in 2015, female student enrollment exceeded the male enrollment rate by 3.22 (UNESCO, 2017). See Figure 3.

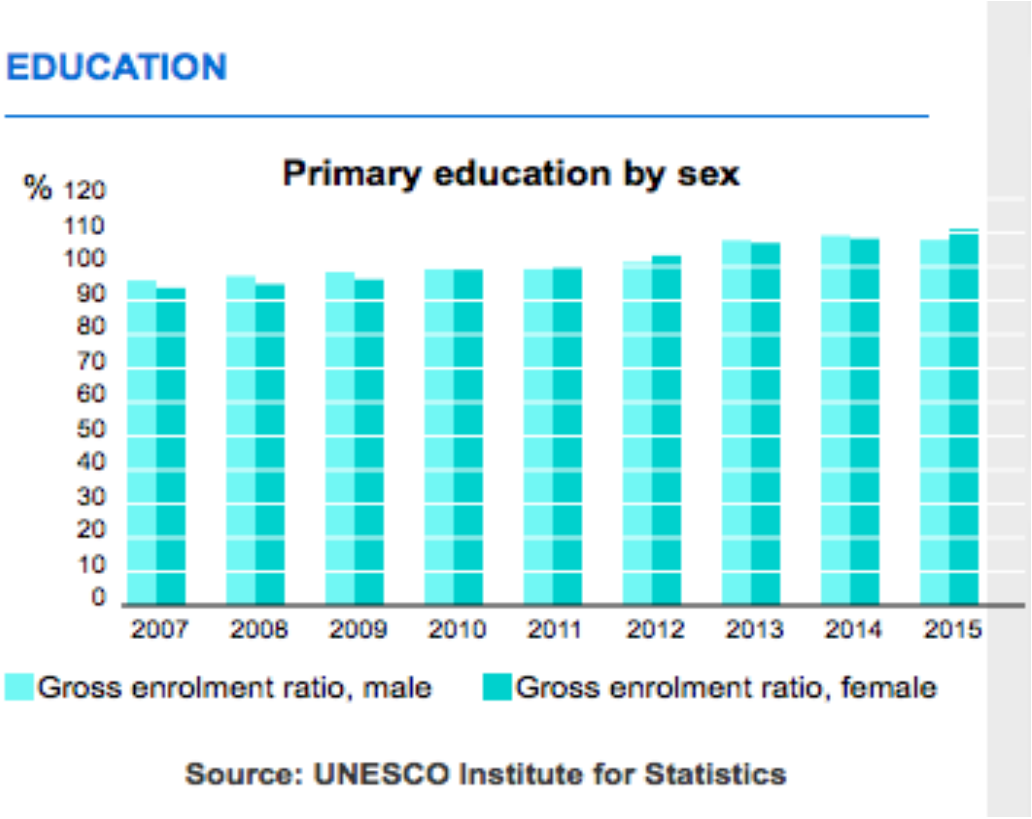

Figure 3. Male and female enrollment rate in primary schools

The first university, King Saud University, was established in 1957, in Riyadh, the capital of Saudi Arabia. In 2010, King Saud University was in the Times Higher Education – QS World University Rankings as 221 with the highest ranking among Arab universities (Smith & Abouammoh, 2013). In 1975, eighteen years later, the Ministry of Higher Education was established with the responsibilities of planning and supervising the Saudi higher education system (Smith & Abouammoh, 2013). Today, there are 25 public universities in Saudi Arabia (King Saud university, 2017). The enrollment rate has dramatically increased from 7,000 in 1970 to almost 1 million students enrolled in Saudi Universities. Over half of the million university students are females.

In addition to schools and universities, the Ministry of Education initiated and established the General Department of Adult Education to eliminate illiteracy, a primary goal of the Saudi education system (Ministry of Education, 2017). This program provides opportunities for adults to attend schools and universities. This clearly demonstrates the concerted effort Saudi Arabia has directed to provide every individual, regardless of age, with an opportunity to learn to read. These efforts have resulted in a low rate of illiteracy in Saudi Arabia. As of 2015, the male literacy rate was 97% and the female rate was 91.1% (World Factbook, 2017).

Saudi Arabia's current public education system spans 12 years' total: 6 years in elementary school, 3 years in middle school, and 3 years in high school (Saudi Arabia Cultural Mission, 2017). The Saudi Government ensures that all citizens have access to free education from primary school through higher education (AL-Mousa, 2010). Also, it mandates that all children should be admitted to primary school by the age of six (ALquraini, 2011).

The public school system in Saudi Arabia is segregated by gender in all education levels (Baki, 2004), with the only exception being preschool, where both genders are integrated (Smith & Abouammoh, 2013). In all other schooling levels, the genders are separately taught by same gender instructors in same gender schools.

SPECIAL EDUCATION

The 1950's was the era of the birth of special education In Saudi Arabia. By 1958, the first special education service was offered to blind students by a Saudi citizen (Battal, 2016). After realizing the need to establish services formally, the Ministry of Education started the foundation to establish a plan for administration concerning special education in 1960 (Battal, 2016). In response to the success stories of individual attempts to provide blind and deaf students special education services, the Ministry officially opened the first school for blind students in 1960 (Battal, 2016). In 1962, the Department of Education established the Department of Special Education to provide learning and rehabilitation services to individuals with special needs (Afeafe, 2000). At that time, three categories of special needs were recognized: the blind, the deaf, and those with intellectual disabilities (Afeafe, 2000).

The first legislation for people with disabilities in Saudi Arabia was introduced in 1987 (Alquraini, 2011). This law was to ensure providing equal access to learning opportunities to all individuals within the society. It was not until the year 2001, that the Saudi government announced the formation of Regulations of Special Education Programs and Institutes (RSEPI) which emphasized rights and laws for all students with disabilities. The categories of disabilities, under the RSEPI, expanded to include: intellectual disabilities, learning disability, deafness, blindness, and individuals with multiple disabilities (Alquarini, 2011). Although the recognition of special education field is relatively recent, many developments have been made by the government to ensure providing quality services in education settings for students with disabilities (Alawfi, 2017).

The expansion of services provision for students with disabilities was one of the development characteristics of the development of special education services in Saudi Arabia. For example, there was an expansion of the services including students with language disorder, hearing impairment, and intellectual disabilities to ensure that all students within their categories receive appropriate accommodation (Alamri, 2014).

LD Education in Saudi Arabia

The term learning disability (LD) was officially introduced in Saudi Arabia as a new category of disability in 1996 (Al-hano, 2006). The LD category, currently, is the second category among students with special needs, with 33% of identified students (Battal, 2016).

The Saudi Arabian Ministry of Education Regulation of Special Education Institutions and Programs (2002) defined LDs as:

> "Disorders in one or a multiple of fundamental mental processes that are involved in the comprehension and use of spoken and written languages whose manifestation is apparent in listening, reading, thinking, spelling, writing or arithmetic related disorders not related to family issues, mental retardation, educational or social background, or hearing or visual impairments" (AlRasheed, 2010, as cited in Alawfi, 2017, p.3).

The Ministry of Education established the Department of Learning Disabilities (DLD) in 1995 (Alquraini, 2011). Since that time, special education teachers were hired and trained in public schools to be able to identify students with LD and provide them with the appropriate support (Alawfi, 2017). By 2012, The DLD affirmed that there are 2713 public schools, including schools serving girls and boys, that adopted the Saudi Learning Disability Program (SLDP). These schools received services under the newly established support programs and were assigned IEP plans to receive the support they needed (alnaim, 2015).

Students with LD receive their education in general education classes with special education support in resource rooms (Alquraini, 2011). In Saudi Arabia, general education teachers are responsible for referring students with LD in the general classroom (Hussain, 2009); therefore, programs that enhance the knowledge of general education teachers are crucial in the identification process.

Education reform of services for students with LD in Saudi Arabia

Several factors have profoundly influenced the reform in service provision for students with LD in Saudi Arabia: legislation implementation, government support, awareness level of the society, globalization, and a specialized cadre of special education experts (Aldabas, 2015; AL-Jadid, 2003; Alquraini, 2011; Alawfi, 2017; Battal, 2016).

Legislation implementation is the first main factor that has influenced reform of services for students with LD in Saudi Arabia (Aldabas, 2015; Alquraini, 2011; Alawafi, 2017; Battal, 2016). Laws have been established to provide high-quality services in education and rehabilitation for individuals with disabilities in Saudi Arabia. The first law concerning the legislation of disability was passed in 1987; the scope of this law was to ensure that all individuals, regardless of their needs, receive equal opportunities in education and employment (Ministry of Health Care, 2010). Also, it included definitions of disabilities and required public intervention programs to ensure that individuals with disabilities learn skills for independent living (Ministry of Health Care, 2010).

In 1995, the Department of Special Education under the Ministry of Education planned on establishing the DLD (Alquraini, 2011). Since its establishment, research on identification and instruction has been conducted to ensure that students with LD receive the appropriate accommodation (Alawfi, 2017). Realizing the importance of legislation in the provision of services, Saudi Arabia's government formed the RRSEP in 2001 (aldabas , 2015).

The RRSEP ensured a provision of the appropriate service for students with special needs including transition, early interventions, and individual education plans (Ministry of

Education, 2017; Alquraini, 2011). The RRSEP regulations were strongly influenced by the United States' IDEA legislation (Alquraini, 2011). The RRSEP contained many provisions concerning learning disabilities' definitions and future directions of the Saudi system with special education (Alquraini, 2011). Since the Ministry of Education is responsible for providing equal learning opportunities for both genders (Ministry of education, 2016), legislation was produced to ensure that both genders have the same equal opportunities both in terms of the services established and the support provided.

The second factor that has influenced the reform of service provision in Saudi Arabia for students with special needs is government support (Aldabas, 2015; Battal, 2016; Ministry of Education, 2016). One form of government support is the Saudi instituted Rules and Regulations of Special Education Programs (RRSEP). The RRSEP was established by the Department of Special Education in the Ministry of Education in 2001 (Ministry of Education, 2017). Its aim was to ensure that all students with disabilities have access to proper services in education and rehabilitation (Aldabas, 2015; Ministry of Education, 2017). In addition to the RRSEP, the government provided support through providing a number of programs to support students with LD. For instance, continuous support to the SLDP to ensure that all students with LD would be identified and receive appropriate service (Alnaim, 2015).

The third factor that has influenced the reform of services provision for students with LD in Saudi Arabia is the awareness level among individuals of the society (AL-Jadid, 2013; Ministry of Education, 2017). According to the Ministry of Education of Saudi Arabia (2017), since the establishment of the LD concept, the Ministry made a great deal of effort to improve the negative attitudes towards LD held by individuals in the society. For instance, on May 3, 2009, the Ministry introduced Learning Disabilities Day by initiating a campaign called "I Know My Difficulties". This day was celebrated yearly under different campaign names. To enhance positive attitudes and raise awareness among people in Saudi society, it is mandatory that all learning institutions take part on that day and celebrate it.

The fourth factor that has affected the change in services for students with LD is globalization. Globalization is considered as a meta myth that uses politics, economic, and cultural aspects of life to make sense of the existing social transformation and plan in according to it (Vaira, 2004). In Saudi Arabia, globalization has affected the government and educators. When the Saudi government witnessed positive change in service provision for students with special needs around the world, it initiated more new rules to ensure that all students, despite their varied needs, have free access to proper education and rehabilitation services (AL-Mousa, 2010). Saudi educators, similarly, were influenced by the services and laws benefitting students with LD around the world, especially in the U.S. For example, in 2015, there were 92,618 Saudi students sent to earn their degrees in American Universities (International Trade Administration, 2016). Thus, the Saudi education system has been strongly influenced by and is now based on the US system (AL-Naim, 2015). Therefore, learning theories and concepts promoted in the US are likely to be adopted by the Saudi Learning Disability Program (SLDP). Even the SLDP's definition of LD is very similar to the US definition. According to (AL-Naim, 2015), the SLDP definition of LD is:

> "Disorders in one or more of the basic psychological processes involved in understanding or using spoken and written language which is manifested in disorders in listening, thinking, talking, reading, writing, spelling, or arithmetic

and it is not due to factors related to mental retardation, visual or hearing impairments, or educational, social, and familial factors" (p. 1041).

The fifth factor that has affected the reform of service provision for students with LD is the availability of a Saudi cadre of special education educators (Battal, 2016). Lack of specialized teachers was a fundamental issue in the early stages of the development of Saudi special education (Battal, 2016). The government initially overcame this shortage by hiring foreigners with special education degrees to provide the services needed. For instance, in 1974, 44.3% of Saudi Arabia's special education teachers were foreigners (Anita, 1978). However, once the first Department of Special Education was established in King Saud University, it played a major role in building up the Saudi cadre of special education educators (Battal, 2016). Today, special education departments have spread across the kingdom into more than 11 Saudi universities. Additionally, in 2005, the King Abdullah Foreign scholarship was launched. One of the main objectives of this program is to educate Saudi individuals in foreign countries who return as qualified professionals in different fields (Ministry of Education, 2016). This program ensured the availability of a specialized Saudi cadre in the special education field to continuously provide students with needs the services required.

Looking at the factors that influenced the reform in services provision for students with LD in Saudi Arabia, including: legislation implementation, government support, awareness level of the society, globalization, and a specialized cadre of Saudi special education professionals, it is crucial to highlight that these changes in services have been equal across gender. Although when the special education field was established in Saudi Arabia only males were receiving services, today both genders have equal rights and access to all levels of education.

CONCLUSION

The purpose of this paper was to highlight the factors that have profoundly influenced the reform in service provision for students with LD in Saudi Arabia. The factors, including legislation implementation, government support, the awareness level of the society, globalization, and the specialized cadre of special education experts, have all contributed in shaping the reform of the services provision. All the factors have had a great influence over all. However, government support could be one of the main factors that enhanced the establishment of services. The Saudi Government has supported the education sector since the establishment of the Kingdom, and government support had an influence on attitudes of individuals within the Saudi community to accept individuals with disabilities (Battal, 2016). Also, the government supported the field of special education financially (Murry & Alqahtani, 2015). The special education field in Saudi Arabia has developed in a remarkably short time (Battal, 2016). However, observing the development pace of the services provision for students with LD in Saudi Arabia, there is still a challenge in the identification process of students (Alquraini, 2013). There is a need to establish a process and identification tools. According to recent study conducted by[أبو محمد عمر محمد

الرب] Mohammad Omar abu alrab (2016) based on surveying 63 LD specialists, there is problems in the identification process of LD students. Also, Because students with LD are referred by general education teachers, there is a need to establish programs that train general education teachers about the concept of inclusion (al-dabas, 2015).

IMPLICATION FOR FUTURE RESEARCH AND TEACHING IMPLEMENTATION

The purpose A variety of studies have shared important information about the development of LD education, but there is still a gap of studies that identifies the factors that have profoundly influenced the reform in service provision for students with LD in Saudi Arabia. Future researchers should address investigation of the factors influenced the reform in services provision. This could be accomplished by conducting qualitative studies that includes interviews with teachers, principals, and parents. Moreover, future studies should consider pervious international experience and the existing literature as a guide to establish more laws and guidelines for ministries, teachers, and parents.

From practical perspective, additional research could be designed to provide both general and special education teachers more training opportunities to be able to provide students with LD the support needed. Since students with LD is referred by general education teachers, designing a referral and diagnostic tool that could be used as a tool by the general education teachers could help discovering the needs of LD students earlier. Moreover, more training programs should be designed on including both general and special education teachers to facilitate collaboration. Future research should highlight the impact of how collaboration between general and special education teachers is crucial to provide students with LD the support needed.

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Research Article

The Effect of Education on the Preservation of Historical Urban Environment: The Sample of Kastamonu Urban Protected Area[1]

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Abstract:

Urban historical environments are one of the most prominent and effective ones of some components to whom citizens can consubstantiate themselves to cities, and give identity to them and time perspective to living spaces of the cities. These areas are not only the histories of a society but also its memory, culture and even future. Therefore, the conservation of urban protected areas is not just a responsibility for local people living in these areas also a responsibility for all society. Conserving and ensuring sustainability of these areas is just possible with a process on which area participants involve.

In order for the area shareholders to play an effective role in this process, they should be aware of the benefit of the area for them. It is continuously emphasized in the studies that education is important in providing this awareness. In the scope of this study, it is tried to be identified how the education levels of people who live in and around Kastamonu Protected area, who visit and administrate Kastamonu affects the perspective of the protection of this area. It is identified that the view that the protection of the area negatively affects the life of the shareholders is inversely related to the education level by evaluating 376 questionnaire studies with regression analysis. It is considered that the perception that the increase in education level positively affect the life conditions of protected areas, and protecting these kinds of areas gain favor to all shareholders and become easier and more sustainable.

Keywords: Perception, urban historical environment, education, stakeholder

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INTRODUCTION

Historical texture of the cities are places arranged at human scale which reflect social, cultural and economic structure as well as life style, philosophy and aesthetic concerns of the past (Arabacıoğlu and Aydemir, 2007; Koçan, 2012). Historical cities, a significant part of our cultural heritage, should be addressed through sustainable protection policies with the aim of protecting them and ensuring their survival, since they reflect period-specific life style, social relations and design features and are still being used as living spaces (Büyükoksal, 2012; Çöteli, 2012).

Historical texture of the cities inevitably changes over time. If the change in historical texture of the cities is caused by unconscious interference and extensions built with the intention of providing contemporary comfortable conditions, wrong restorations, lack of financial power to cover the cost of protection, lack of a protection plan or a protection plan prepared or being implemented unconsciously, reluctance and indifference of local administrations, low level of significance attached to the issue, a society with no historical environmental consciousness, inadequacy of protection education, or by backlashes resulting from the compulsory effect of the laws and restrictive decisions; historical texture of the cities will inevitably disappear and/or be damaged (Arabacıoğlu and Aydemir, 2007; Ömeroğlu, 2006). In this context; within the restrictions introduced by the purpose of urban protection, the objectives that should be focused on are ensuring liveability of the historical city centres, connecting them to the modern city centres and improving such connection, in other words, ensuring the balance of protection and use (Büyükoksal, 2012).

While protecting the resource values of the area, the relation of the stakeholders using such area with the areas should not be cut off. This is the most important issue in the management of protected areas. Otherwise, this would result in negative perception of the users of the area towards the protected areas and consequently their negative reaction against such areas. In order that the individuals have a positive attitude towards the city and its protection and they assume responsibility for the whole city, they should understand well the place and importance of the city they live in within the historical process, and they should see that the decisions taken with the aim of protecting the area do not negatively affect their life quality (Özcan 2009).

Previous studies showed that perceptions of local people toward protected areas management influenced local residents' attitudes strongly toward conservation studies (Ramakrishnan 2007; Vodouhé et al. 2010). Studies have shown that the local residents' perceptions are influenced by several factors like the level of education, level of income, participation of local residents in management process and the level of knowledge on the protected area (Mehta & Heinen 2001; Vodouhé et al. 2010). The understanding of all these factors is important both to improve the relationship between participants and protected areas and to improve people's awareness of resource conservation in these areas (Vodouhé et al. 2010).

Education could be an important way to motivate people to develop or reinforce positive perception about conservation (Vodouhé et al. 2010; Snyman 2012, Guloglu et.al. 2015). The environmental education should be built on positive perceptions that people already hold, and should work on mitigating negative perceptions, where possible. This could be achieved through informal educational methods (sensitization, organized activity, etc.). The studies carried out come up with some other significant and effective factors such as demographics, local residents' proximity to the area and their knowledge level about these areas (Petrosillo et al. 2007; Suckall et al. 2009; Jones et al. 2011; Szell & Hallett 2013, Belkayalı et.al. 2015).

Given that the laws per se are not enough to protect historical and cultural assets, the protection in its full meaning can only be ensured in the event of a full unity lead by inclusion of the society in the process by raising the information and awareness level of the society, along with the laws (Alkış and Oğuzoğlu, 2005:353). Following the rise in social awareness on the protection of historical and cultural assets, the works underway will be made widespread, and sustainability of the historical and cultural assets will also be ensured when active participation of the society and feasibility of the work are ensured (Belkayali, 2015). Educating and raising awareness of the society are the most fundamental principles of sustainability and area management approach. Educating particularly the children, relevant technical staff and general public with this purpose is an essential factor for effective protection of the heritage (Ünver, 2006). A good protection policy, utilization of resources and transferring history and culture knowledge and educating particularly the younger generation to this end are defined among the most fundamental tools ensuring social awareness on the issue (Kerber, 1994).

This study aims to ascertain how the education affects the perception and attitude of the area stakeholders on the protected areas. Kastamonu is one of the richest settlements in terms of "Historical Monuments" of Anatolia. That is why Kastamonu Urban Archaeological Site was chosen as study field. The study tried to find out how the education level of the locals, visitors and area managers influence their perception of and attitude towards protection of such important urban historical environment.

METHOD

Hosting many civilizations, Kastamonu urban archaeological site is quite rich in terms of historical and cultural values. As historical texture is addressed within the framework of protection-use balance today and it is recently listed among the model cities, Kastamonu Urban Archaeological Site has been chosen as study field. The study field is located within the provincial borders of Kastamonu and lies on 126 hectares of land.

Within the scope of the study, written, drawn, visual data related to the area as well as survey data were used as study material. The perception of the research area stakeholders

(locals, visitors and managers) towards urban archaeological site and the protection works at the site was tried to be found out through 375 surveys conducted in person. Number of the surveys were determined as based on urban population of Kastamonu (98.456 persons (data of 2014)) at 95% reliability level and according to 0.05 margin of error (Yazıcıoğlu and Erdoğan, 2004). Likert scale was used in survey questions posed with the aim of ascertaining the attitude and behaviours of the stakeholders. The participants were asked to rate their answers as 1: Absolutely not, 2: Not agree, 3: Undecided, 4: Agree, 5: Absolutely agree. This way, the perception and attitude of the participants towards historical environment were tried to be determined more clearly. While analyzing the data obtained from the research, SPSS (Statistical Package for Social Sciences Program, Version 19.0) package software was used. The answers taken according to Likert scale were based on the mean value and the evaluations were made accordingly.

Kastamonu Urban Historical Area

The province of Kastamonu is located in the northern part of Turkey, within Western Black Sea Region. It neighbours Sinop in the east, Bartın and Karabük in the west, Çankırı in the south and Çorum in the southeast. Black Sea lies to the north of Kastamonu. The city centre's elevation from the sea level is 775 meters (Bakırcı 2005). Kastamonu city centre is a very old settlement lying on Karaçomak valley. Due to its topographic structure, the city has developed to its north and south. (Figure 1).

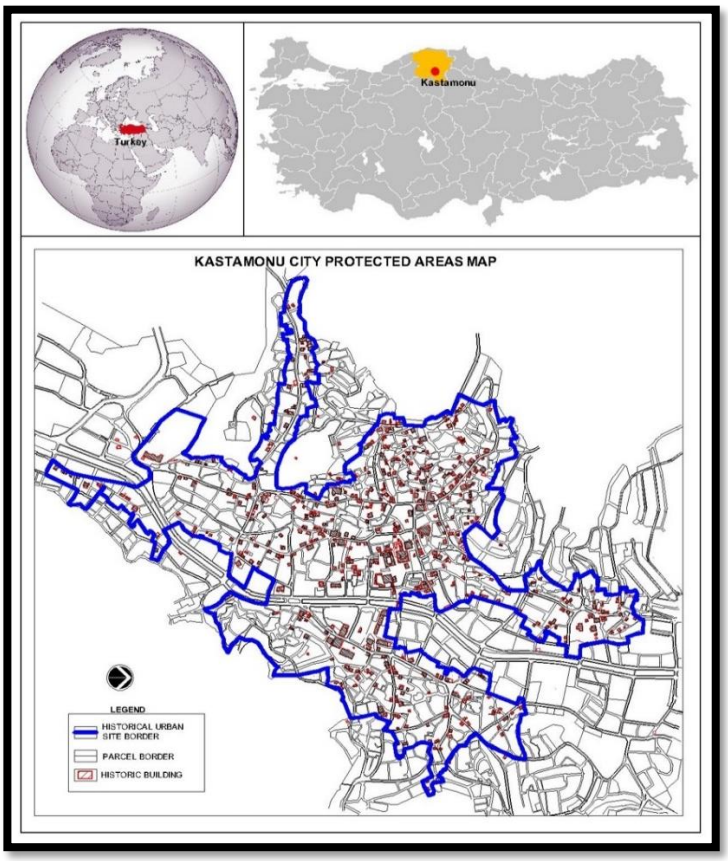

Figure 1. Location Map of Study Area

Its known history dates back to approximately 4000 years ago. Starting from Hittites, Kastamonu was controlled by Phrygians, Lydians, Persians, Romans, Byzantines, Seljuks, Danishmends, Candars and in 1460 by Ottomans, which remained one of the important Ottoman cities until Republic period. Kastamonu province, which included Bolu, Çankırı and Sinop during the Ottoman Empire period, reached its present situation with the departure of Bolu in 1907 and Çankırı and Sinop in 1918 (Bakırcı 2005). Kastamonu has always been an important center of science and culture, and raised many scientists. There are many cultural values which add value to the spatial features of the city. Due to its rich historical background, city center is full of many historical artefacts, most of which have been protected, with no considerable change. In the Ottoman period, with the effect of being a city where sultans' sons were trained, especially important construction activities took place and became a cultural center. Among the examples of traditional civil architecture based on the wood-mud brick mixed construction technique are mansions, stone huts, old Turkish hospitals, Turkish baths, complexes, mosques, as well as bridges and castles are urban icons in Kastamonu province (Anonymous, 2008). With the decision of 28.05.1990 no.1226, the borders of Kastamonu Urban Archaeological Site were determined, considering its rich historical background. There are 585 registered buildings in Kastamonu city center (Anonymous, 2008).

RESULTS AND FINDINGS

A survey was conducted within the Kastamonu urban archeological site with a view to determining how the perception and attitude of the educated stakeholders towards protected areas are affected. 220 locals, 114 tourists and 42 area managers participated in the survey (Table 1).

Table 1
Distribution of stakeholders participating survey

Stakeholders	Frequency	Percent
Local people	220	58,5
Tourist	114	30,3
Manager	42	11,2
Total	376	100,0

Considering the education level of the area stakeholders; 0.9% of the locals were illiterate, 16.4% of them were primary school graduates. 74.6% of tourists and 73.8% of the managers were university graduates. Considering all the stakeholders as a whole, education level of the tourists and managers were higher than the locals (Table 2).

Table 2
Educational status of stakeholders

Stakeholder	Educational Status			
	No formal education	Primary education	Secondary education	University
Local people	0,9%	16,4%	32,7%	50,0%
Tourist	0,0%	3,5%	21,9%	74,6%
Manager	0,0%	4,8%	21,4%	73,8%
Total	0,5%	11,2%	28,2%	60,1%

When asked about the historical and cultural characteristics of the area stakeholders in Kastamonu urban archeological site which they think should be protected, 28.7% of university graduates stated that all the characteristics in the area should be protected. 0.5% of the illiterate stakeholders stated that the mosques should be protected, but they also stated that there was no need to protect other characteristics. It is determined that the characteristics of the area, which should be protected in particular, were historical houses, castles and mosques (Table 3).

Table 3
The relationship between preferences of protected areas and education

Preferences	Educational Status				Total
	No formal education	Primary education	Secondary education	University	
Historical houses	0.0%	6.6%	11.2%	27.7%	45.5%
Castle	0.0%	3.2%	8.5%	23.9%	35.6%
Historical school buildings	0.0%	1.1%	2.1%	5.1%	8.2%
Local clothing	0.0%	1.6%	2.4%	6.9%	10.9%
Local food	0.0%	1.1%	2.9%	9.0%	13.0%
Historical mosques	0.5%	3.5%	8.0%	21.8%	33.8%
Historical public buildings	0.0%	.5%	.8%	4.3%	5.6%
Monument tree	0.0%	1.3%	3.2%	14.9%	19.4%
All of them	0.0%	4.8%	14.1%	28.7%	47.6%

When the relation of the stakeholders' education with their environmental attitudes is examined; it is determined that 34.8% of those expressing that the characteristics of the area should be protected and valued are university graduates, 24.7% of those expressing that the area should be protected now and in the future, are high school graduates and 55.3% of those expressing that the area should be protected now and in the future are university graduates (Table 4).

Table 4
The relationship between environmental attitudes and education

Attitude	Scale	Educational Status				Total
		No formal education	Primary education	Secondary education	University	
Features of this area must be protected and valued	Certainly do not agree	.3%	.3%	.3%	1.3%	2.1%
	Do not agree	0.0%	.5%	.8%	.8%	2.1%
	Undecided	0.0%	1.6%	3.2%	3.5%	8.2%
	Agree	.3%	4.5%	10.1%	19.7%	34.6%
	Absolutely agree	0.0%	4.3%	13.8%	34.8%	52.9%
This area must be protected now and in the future	Certainly do not agree	0.0%	.5%	.3%	1.6%	2.4%
	Do not agree	.3%	.3%	.8%	1.3%	2.7%
	Undecided	0.0%	.5%	2.4%	1.9%	4.8%
	Agree	.3%	4.3%	9.3%	20.2%	34.0%
	Absolutely agree	0.0%	5.6%	15.4%	35.1%	56.1%

It was tried to be found out whether the environmental perception of the area stakeholders' changes depending on their education level. The perception that protecting the area will benefit future generation increases, as the education level increases. The perception that protection measures in the area reduce job opportunities and their ability to build their houses the way they want increases, as the education level decreases. Regardless of their education level, 41.2% of the participants stated their satisfaction with living or being in Kastamonu urban archaeological site (Table 5).

Table 5
The relationship between perception and education

Perception	Scale	Educational Status				Total
		No formal education	Primary education	Secondary education	University	
The protection of this area will benefit future generations	Certainly do not agree	0.0%	.3%	.5%	1.3%	2.1%
	Do not agree	0.0%	.8%	.5%	1.6%	2.9%
	Undecided	.3%	1.3%	3.2%	3.7%	8.5%
	Agree	.3%	3.7%	10.9%	18.9%	33.8%
	Absolutely agree	0.0%	5.1%	13.0%	34.6%	52.7%
Fewer job opportunities because of the protection in this area.	Certainly do not agree	0.0%	1.9%	5.1%	18.4%	25.3%
	Do not agree	0.0%	.8%	8.2%	20.5%	29.5%
	Undecided	0.0%	4.3%	6.9%	11.7%	22.9%
	Agree	.5%	4.0%	5.3%	5.9%	15.7%
	Absolutely agree	0.0%	.3%	2.7%	3.7%	6.6%
I can not do the house the way I want because of	Certainly do not agree	0.0%	2.1%	4.0%	13.8%	19.9%
	Do not agree	0.0%	2.9%	6.9%	19.1%	29.0%

the protection measures in this area	Undecided	0.0%	2.4%	9.6%	14.9%	26.9%
	Agree	.3%	3.5%	5.3%	9.6%	18.6%
	Absolutely agree	.3%	.3%	2.4%	2.7%	5.6%
Happy to live in this area	Certainly do not agree	0.0%	.5%	1.6%	2.9%	5.1%
	Do not agree	0.0%	1.3%	1.3%	2.4%	5.1%
	Undecided	.3%	2.4%	6.9%	10.4%	19.9%
	Agree	0.0%	3.2%	12.5%	25.5%	41.2%
	Absolutely agree	.3%	3.7%	5.9%	18.9%	28.7%

According to the regression analysis on the relation between the education level and the perception that the protection work in Kastamonu urban archaeological site negatively affects the living conditions, it is determined that the importance of education level variable is 0.01. Education level explains 3% of the perception that protecting the area negatively affects the living conditions. As a result of test F conducted for the whole significance of the model, the model has been found 12% wholly statistically significant (Table 6).

Table 6
Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F	Sig.
1	,173[a]	,030	,027	1,206	11,548	,001[b]

a. Predictors: (Constant), Educational status

Negative (-) β value of education level variable points out the inverse relation between the education level and the perception that protection of the area negatively affects the living conditions. In other words, the perception that the living conditions are negatively affected decreases, as the education level increases (Table 7).

Table 7
Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3,165	,311		10,185	,000
Educational status	-,297	,088	-,173	-3,398	,001

a. Dependent Variable: Protecting this area negatively affects living conditions

CONCLUSION

The role of the area stakeholders in ensuring survival and transfer to the future generation of historical and cultural values cannot be ignored. It is essential for sustainability that area stakeholders play active role in protection and management. At this point, the characteristics of the area stakeholders are also important. It is inevitable,

especially for those who are closely related with the area and who are connected to the history of the area, to have an active role in the process. However, it should not be ignored that the education level, knowledge and awareness regarding the area are also important to play an active role in the protection and management process.

Education level of the area stakeholders affects their perception and attitude towards the area which they are a part of, which is also confirmed by the results of the study. Therefore, it is necessary to ensure that the stakeholders of the area have absolutely information on the characteristics of the area, why it needs to be protected and how it needs to be protected. It is important that this educational process, which will particularly start in the family, continues throughout the education life of the persons. Making necessary arrangements in education institutions to increase awareness and knowledge regarding protection of historical environments will also contribute to the protection of our historical and cultural assets which will shape our future. Consequently, even though all necessary scientific studies and practices are carried out to protect historical environments, it will not be possible for the process to proceed successfully unless the educated area stakeholders are involved in the process.

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Research Article

Preservice Mathematics Teachers' Performances in Teaching Activities[1]

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Abstract:

In this study, it was tried to determine teaching activities that elementary preservice mathematics teachers exhibited in a micro teaching session. Preservice teachers are required to prepare and later present a sample micro teaching session. First of all, they were advised to freely select a topic (or an attainment) of their own intention within 5-8 middle school mathematics subjects. Then, every one of them planned their own special session. While they were planning the sessions, they were advised to take into account of all perspectives and practices of the theoretical subjects covered via the course of Special Teaching Methods 1 and the experiences that they gained during the other courses of the mathematics teacher education program. After that, each one performed tasks in the classroom environment related to their own planning. No intervention was made to the preservice mathematics teachers by the lecturer during the sessions. After each session, the remaining candidates and the lecturer made critique about the candidate's performance. The study was conducted with 50 preservice teachers who take Special Teaching Methods II course. A systematic observation form has been prepared and used for data collection. Descriptive analysis and content analysis based on observations were used as mixed methods in the study. Findings show that preservice mathematics teachers have some misconceptions regarding the lectured subject, besides the deficiencies and mistakes in the course planning and performance.

Keywords: Teacher education, instruction activities, preservice mathematics teachers, mathematics education

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INTRODUCTION

There have been rapid developments in the world in many areas such as science, technology, economy, social, et al., and these developments continuously transform the qualities of the individuals needed by societies. This certainly requires innovation and changes in mathematics education. In our age, mathematics is considered crucial, as it has provided nearly all of the science with resource and has played an important role in the development of societies (Aksu, 2008). Also in Turkey, many changes have been experienced and teaching programs have been conducted in the field of mathematics education. In the year 2005, the mathematics education program has been established with a new approach. Changing only the teaching program, however, is not sufficient to improve the quality of the activities on teaching and education (Çanakçı, 2008). For, besides the reforms that are made, it is required that the individuals who will be the operators of those reforms have positive beliefs, and show no resistance to innovation and change (Battista, 1994). It is important thus, that teachers, the operators of the reforms on teaching and education, refresh themselves and keep up with the changing conditions. The quality of the education given in the institutions that train the teachers who play a key role in the actualization of the reforms play a crucial role (Battista, 1994; Rogers and Steele, 2016). Faculties of education aim to train the teachers as individuals having knowledge on the field, the knowledge on teaching of the field, and general culture (Baki, 2010). The pedagogic knowledge on the field, suggested by Shulman (1986), is tried to be given in the period of teaching education, before entering professional life. In this context, The Council of Higher Education (CoHE) in Turkey has brought together the teacher candidate and the student, around the subject to be taught, and extended the period of preservice practices, to combine the theory with the practice, in the year 1998 (Baki, 2010). The research, however, show that the preservice practices exercised in schools were not sufficient for the teachers to gain competence (Büyükgöze Kavas and Bugay, 2009; Arslan and Özpınar, 2008; Eraslan, 2008; Köroğlu, Başer and Yavuz, 2000). It was expressed that the preservice activites had not reached their goal, due to reasons such as the operating teacher not having sufficient time for attending to individual preservice mathematics teachers, preservice mathematics teachers not having active involvement in in-class activities, and the faculty members having problems on auditing (Eraslan, 2008). It has thus been suggested by the researches that it was necessary to concentrate on applied courses, for the teachers to respond the needs regarding field education (Eraslan, 2009; Toluk Uçar, 2011; Köroğlu, Başer and Yavuz, 2000).

In the faculties of education, preservice mathematics teachers are taught the courses of special teaching methods I-II, in the scope of pedagogical field knowledge to improve their professional knowledge and abilities. In the scope of the course, they have to be able to learn the students' knowledge of syllabus, their areas and subareas of learning, how they comprehend, the special teaching methods on the subject, to design materials and learning activities particular for that subject, and the skill to evaluate the students (Baki, 2010). Earlier research appears to have been made on the structural changes on faculties of education,

student opinions, and the content of those (Arslan and Özpınar, 2008; Baki, 2010; Devecioğlu and Akdeniz, 2016; Umay, 2001; Eraslan, 2008; Eraslan, 2009). How the preservice mathematics teachers, as teachers of the future, apply their knowledge on the field and of teaching of the field have been points of interests for this study. In this context, the question of "What are the teaching activities of preservice mathematics teachers, in a micro teaching session?" has been tried to be addressed.

Purpose of Study

The purpose of this study is to determine the teaching activities, exhibited by elementary preservice mathematics teachers in a micro teaching session.

METHOD

This study had been carried out in 2015-2016 academic year, in the course of special teaching methods II of the faculty of education of a public university. The course was divided in two parts as theory and application. In the theoretical part, the first researcher provided the participants with general information on field teaching. In the latter, application part of the course, it was requested from participants that they compose and present a course plan regarding an attainment of their preferance. During this teaching activity, they were asked to consider themselves as teachers of the respective classes, and the remaining participants were asked to act like students of the class for which the attainment was for, and thus the creation of a simulation environment was tried. The students were asked to exhibit in class, the attitude they expected from middle school students. The classroom environment which is tried to be produced was observed by the first and the third author of this study through participatory observation. The study, in this sense, was designed as mixed method, and the data obtained via systematic observation forms was tried to be evaluated both quantitatively and qualitatively.

The Sample

Focus group of the study consists of 50 participants that take the course. The focus group was formed by the method of purposive sampling. Purposive sampling is the kind of sampling in which the researcher selects the focus group most appropriate to the purpose of the study, with his/her own judgement (Balcı, 2006). Accordingly, the participants were the students who had taken the course of Special Teaching Methods I.

Data Collection

In the study, observation forms were composed for the purpose of detecting the behaviours of elementary preservice mathematics teachers in micro teaching sessions. The form consists of the activities a teacher theoretically can exhibit during the session. Behaviours not included in the observation form but emerged during the lecture were also appended to the form. The possible activities were considered in 4 situations: 3: Very good

2: Good 1:Insufficient 0: The behaviour was not exhibited. Additionally, the researchers took notes during the lectures of the participants, and tried to determine showing up misconceptions about the lectured topic.

Analysis of the Data

In the study in which descriptive analysis was used, the observation form was analyzed with rubric evaluation, and the data obtained from observation notes were subjected to content analysis by the researchers.

RESULTS AND FINDINGS

Table 1
Teaching Activities Exhibited by Teacher Candidates

Exhibited Behaviour	*f*	%
Informing of pre-attainments	50	100
Informing of atteinments and abilities	50	100
Compliance with the treatment steps	50	100
Illustration of concepts	50	100
Regarding to the duration	50	100
Relating with the field of learning	49	98
Emphasizing important points	49	98
Employing the examples and activities in the textbook	49	98
Giving feedback	49	98
Making reminders	48	96
Attention on involvement in the lecture	48	96
Employing alternative activities and examples	48	96
Utilizing proper methods	48	96
Association	48	96
Introduction to lecture and greeting	47	94
Paying attention to the use of the symbols	47	94
Evaluating properly	46	92
Emphasis on the textbook	45	90
The use of tools and instruments	45	90
Closing and greeting	39	78
Giving and controling assignments	36	72
Utilization of technology	20	40
Constructing problems	0	0
Paying attention to the steps to solving problems	0	0

According to the data obtained from the studies, the behaviours of utitization of technology, closing and greeting, and giving and controling assignments were the ones least

exhibited by elementary preservice mathematics teachers. It has been determined that the preservice teachers never exhibited the beahviours of constructing problems, solving problems and complying with problem solution steps. The beahviours of informing of attainments and abilities, compliance with the treatment steps, making reminders about the subject, designing and practicing activities about the subject, introduction to lecture and greeting, informing of pre-attainments, and illustration of concepts were their most exhibited teaching activities. Additionally, it was seen that all of the preservice teachers informed of pre-attainments, attainments and abilities, and complied with the treatment steps. All of the teacher candidates were observed in lecturing to generally utilize powerpoint presentations, to not experience problem in class management, to lecture with more of a teacher oriented approach, and to design a cooperative learning environment. It has also been revealed that the preservice teachers, regarding the field knowledge, had some misconceptions regarding the relations between quadrilaterals and between prisms, the concepts of unknown and variable, and modeling of operations with fractions.

CONCLUSION

In the study, it was aimed that in-class teaching activities of elementary preservice mathematics teachers were determined. It has been concluded that the preservice teachers had exhibited behaviours of informing of attainments and abilities, compliance with treatment steps of the subject, making reminders about the subject, designing and executing relevant activities, introduction to lecture and greeting, informing of pre-attainments, and illustrating concepts, at the most. The least exhibited behaviours were determined to be utilizing technology, greeting in closure, giving assingnments and controling them. In addition, it was seen that the preservice teachers never exhibited the behaviours of constructing problems, solving problems, and complying with solution steps. Therefore, it is not possible to say that the preservice teachers are professionally sufficient in exhibiting expected behaviours in class. It was also seen that they were self-confident in utilization of new technology, yet they did not have the opportunities to practice it, in actual classroom environment. This result supports the conclusion of Arslan and Özpınar (2008). In their study, it is stated that the teacher candidates did not have the opportunity to utilize technology. As reasons of these obtained results, it is possible to suggest the education system that they came from, and that they were not in an actual classroom environment.

RECOMMENDATIONS

Increasing the number of applied courses in faculties of education has been suggested by many researchers (Erarslan, 2008; Erarslan, 2009; Köroğlu, Başer and Yavuz, 2000; Toluk Uçar, 2011). In the light of this study's results, it can be suggested the practices which provide teachers to think reflectively to be more concentrated on, and the practices that combine pedagogical field knowledge with innovations on technology to be included, in faculties of education. In addition, if it is considered that the most crucial abilities that are

aimed to be obtained via curriculum include the ability to solve problems, the courses that involve production of problems, the application of problem solving steps into actual life, and original problems, may be added in elementary mathematics education programs.

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