THE EFFECTS OF MULTIPLE INTELLIGENCES TRAINING PROGRAM ON IMPROVING READING COMPREHENSION SKILLS OF READING OF THE DISABLED PRIMARY SIX STUDENTS

Abstract: This study was conducted to investigate the effectiveness of multiple intelligences training program on reading comprehension skills of reading disabled primary six students. Pre- test / Post- test / follow –up –test were formed to collect data from the students. 60 students participated in the present study. Each student participant met the following established criteria to be included in the study: (a) a diagnosis of LD by teacher's referral. Neurological scanning results indicated that those individuals were neurologically deficient (b) an IQ score on the Mental Abilities Test (Mosa, 1989) between 90 and 118 (c) reading performance scores at least 2 years below grade level (d) absence of any other disabling condition. Results of this study indicates that Multiple Intelligence Theory based activities proved to be more helpful in achievement and retention of reading comprehension skills. Discussion of results, suggestions for further study, and implications were included.

Keywords: multiple intelligences training program, reading comprehension skills, reading disabled primary six students

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INTRODUCTION

Reading comprehension is the process of constructing meaning from a text and involves the complex coordination of several processes, including "decoding, word reading, and fluency along with the integration of background knowledge and previous experiences" (Mourad Ali, 2015). Reading comprehension can be influenced by students' vocabulary knowledge, word recognition skills, understanding of text structure proficiency, and cultural background differences (Mohammed M. Fatah Allah 2014). Vocabulary knowledge has been shown to be highly related to students' reading comprehension ability (Esam Gomaa 2015). Students who struggle with reading tend to place more focus on the "surface aspects of reading, use fewer comprehension strategies, tap less into background knowledge, and have more limited vocabularies" (Orosco, de Schonewise, de Onis, Klinger and Hoover 2008, 16).

Struggling readers often "fail to link new information with prior knowledge or monitor their comprehension of what they are reading" (Esam Gomaa 2015). An instructional strategy is "a purposeful activity to engage learners in acquiring new behaviors or knowledge" (Al Farahati Al Sayed 2012, 54). Many students with learning disabilities are not efficient in learning because they are not aware of their own cognitive processes and do not know how to determine the specific demands of learning tasks. Their lack of knowledge of how and when to use comprehension strategies appropriately, keeps these students from taking full advantage of their own abilities (Esam Gomaa, 2015)

MULTIPLE INTELLIGENCE

Intelligence is among the various aspects of individual differences which affect education and language learning. The interest in the effect of intelligence can be attributed to the advent of a new intelligence theory proposed by Howard Gardner (1983), namely Multiple Intelligences Theory (MIT). Gardner defined intelligence as "the ability to find and solve problems, the ability to respond successfully to new situations and the capacity to learn from one's past experiences" (Gardner, 1983, 21; Amir Reza, 2016, 200).

Gardner (1983) views intelligence multifaceted. His model is based on findings from both cognitive science (the study of the mind) and neuroscience (the study of the brain). His approach is called "Theory of Multiple Intelligences". This theory suggests that intelligence is the ability to solve problems and difficulties in a particular domain. This is an inborn attribute of the individual and the general faculty of intelligence does not change much with age or with training or experience (Gardner, 1983).

The way of teaching reading is very important. Students should be offered opportunities to understand the learning process and taught the MI theory so that they can effectively choose techniques by which to learn. Teachers can design activities and projects around the intelligences and allow their students to choose their learning activities based on their strengths. Students read better, when they expect to do so, and it is up to the teacher to access their individual expectations through their multiple intelligences (Amir Reza, 2016). using MI in the classroom makes lessons more interesting, which causes students to pay more attention to what is taught and then learned. As a result, students are more engaged, they remember more, and achievement increases (Mourad Ali Eissa and Amaal Ahmed, 2013).

Shearer (2006) examined the differences in multiple intelligences (MI) profiles of high school students with varying levels of reading skill. Significant differences were found in four main MI scales (linguistics, logical-mathematical, interpersonal, and intrapersonal) and a range of specific skills among high, moderate and low reading skill groups. The high reading group was found to be more individual achievement-oriented and the moderate group has strengths in the more socially focused realms and the low readers more pragmatic, practical, and action-oriented.

Mourad Ali Eissa (2009) described a research designed to improve reading skills of fifth grade learning disabled students using multiple intelligences (MI) A total of 60 students identified with LD were invited to participate. The sample was randomly divided into two groups; experimental (n= 30 , 23 boys, 7 girls) and control (n= 30, 21 boys and 9 girls). ANCOVA and Repeated Measures Analyses were employed for data analysis. Findings from this study indicated

the effectiveness of the program employed in improving reading skills; namely word recognition and reading comprehension skills in the target students.

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

1- Are there differences in post-test scores mean between control and experimental groups on Reading Comprehension Test?
2- If the programme is effective in improving reading comprehension of experimental group, is this effect still evident a month later?

METHODOLOGY

PARTICIPANTS

60 students participated in the present study. Each student participant met the following established criteria to be included in the study: (a) a diagnosis of LD by teacher's referral. Neurological scanning results indicated that those individuals were neurologically deficient (b) an IQ score on the Mental Abilities Test (Mosa, 1989) between 90 and 118 (c) reading performance scores at least 2 years below grade level (d) absence of any other disabling condition. Students were randomly classified into two groups: experimental (n= 30 boys) and control (n= 30 boys), Salah al-Din Primary School, Damanhour.

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

Table 1. means, standard deviations, t-value, and significance level for experimental and control groups on age (by month), IQ, and reading comprehension (pre-test).

Variable	Group	N	M	SD	t	Sig.
Age	Experimental	30	143.15	1.03	-.121	Not sig.
	Control	30	143.22	1.66		
IQ	Experimental	30	113.54	4.45	-.221	Not sig.
	Control	30	113.39	4.24		
Reading comprehension	Experimental	30	6.826.54	2.65	-.539	Not sig.
	Control	30		2.32		

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

INSTRUMENT

Reading Comprehension Test. The test was developed to assess reading disabled children 's skills in reading comprehension. It was based on the features of comprehension skills recognized by Mourad Ali (2015). The test consists of (22) items assessing word recognition, with score ranging from 0-1 on each item and a total score of 22. The test has demonstrated high internal consistency with Cronbach's α ranging from 0.87 to 0.91.

PROCEDURE

Screening: Primary five students who participated met the following established criteria to be included in the study: (a) a diagnosis of LD by teacher's referral. Neurological scanning results indicated that those individuals were neurologically deficient (b) an IQ score on the Mental Abilities Test (Mosa, 1989) between 90 and 118 (c) reading performance scores at least 2 years below grade level (d) absence of any other disabling condition.

Pre-intervention testing: All the sixty students in grade six completed the reading comprehension test which was developed to assess reading disabled children 's skills in reading comprehension.

General Instructional Procedures: Instruction was delivered during the Arabic teaching classes. Permissions were obtained from students' parents,

as well as the school principal. Students received 3 training sessions a week, lasting between 40 and 45 min.

DESIGN AND ANALYSIS

The effects of implementing multiple intelligences (MI) intervention on students' reading comprehension skills were assessed using a repeated-measures design, pre- post- and follow-up testing.

RESULTS

Table 2. shows data on ANCOVA analysis for the differences in post- test mean scores between experimental and control groups in reading comprehension test. The table shows that the (F) value was (128.009) and it was significant value at the level (0.01).

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

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

Table 3. shows t-test results for the differences in post- test mean scores between experimental and control groups in reading comprehension test. The table shows that (t) vale was (11.67). This value is significant at the level (0.01) in the favor of experimental group. The table also shows that there are differences in post- test mean scores between experimental and control groups in comprehension test in the favor of experimental group.

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

Group	N	Mean	Std. deviation	T	Sig.
Experimental	30	13.50	1.10	11.67	0.01
Control	30	6.93	3.12		

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

Table 4. Repeated measures analysis for comprehension test.

Source	Type 111 sum of squares	df	Mean square	F	Sig.
Between groups	661.250	1	661.250		0.01
Error 1	105.611	58	1.821	363.148	
Between Measures	794.978	2	794.978	193.121	0.01
Measures x Groups	596.933	2	298.467	145.011	0.01
Error 2	238.756	116	2.058		

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

Table 5. Scheffe test for multi- comparisons in comprehension test

Measure	Pre M= 6.82	Post M= 13.20	Follow up M= 12.86
Pre	--	--	--
Post	8.43*	--	--
Follow up	8.10*	.33	--

DISCUSSION

The purpose of this study was to investigate the effectiveness of multiple intelligences training program on reading comprehension skills of reading disabled primary six students. As a result of this study, Multiple Intelligence Theory based activities proved to be more helpful in achievement and retention of reading comprehension skills. Students liked the activities, and it was found that the Multiple Intelligence Theory based activities easy to apply in students' lessons.

The findings of the study are consistent with previous studies (e.g. Mourad Ali, 2009) which indicated the effectiveness of the program employed in improving reading skills; namely word recognition and reading comprehension skills in the target students.

Experimental group gained better scores in reading comprehension than did control groups in post-tests though there were no statistical differences between the two groups in pre- test. This was due to the program which met the experimental group's needs and interests. On the contrary, the control group was left to be taught in a traditional way.

CONCLUSION

This study was conducted to investigate the effectiveness of multiple intelligences training program on reading comprehension skills of reading disabled primary six students. Pre- test / Post- test / follow –up –test were formed to collect data from the students. At first, Pre-test was applied to students to see their current reading comprehension skills. This Pre-test was analyzed. After the teaching period, Post- test was applied and then analyzed. After two weeks, Post-test (follow –up) was applied again to see the long-term retention. As a result, teaching reading comprehension skills through activities based on Multiple Intelligence Theory was proved to be valuable in students' learning and retention of on reading comprehension skills of reading disabled primary six students.

SUGGESTION FOR FURTHER STUDY

Using Multiple Intelligence Theory-based activities can be helpful in teaching reading comprehension skills to reading disabled primary six students. It can also be helpful in Arabic, as well as English lessons so it can be used to teach all subjects not only in English lessons but also in any other lessons because activities can attract the attention of the students and it can appeal to their needs. In further studies, Multiple Intelligence Theory based activities can be used in different age groups. This research is applied in primary six students. It can be studied in other public schools with even younger students. It can be studied to learn its effect for other skills such as writing, speaking, listening, and vocabulary.

IMPLICATIONS

The results of this study have several important implications. This study adds to the literature on the effectiveness of Multiple Intelligence Theory based activities with reading disabled students. Results appear to indicate that Multiple Intelligence Theory based activities are an effective instructional strategy for improving reading comprehension test scores of students with reading disabilities. Multiple Intelligence Theory based activities provide students with various modalities and this may facilitate the learning of content knowledge.

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