



Original Article

Program effectiveness is multidimensional Rasad skills Triple "on decoding, fluency, comprehension" dyslexic children elementary Behbahan city

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Abstract

Introduction: This study aimed to investigate the effect of multidimensional Rasad the triple skills on reading (decoding, fluency, comprehension) first grade and second- grade students was dyslexic.

Materials and Methods: Statistical population of this clinical study included dyslexic students (boy and girl) who were introduced to Disorders Center Behbahan city. At first, the first and second grade students were separated, then, among them 30 people were selected randomly were assigned to two groups. The experimental group is multi-dimensional restoration program was conducted over 21 one-hour sessions and the control group received no intervention. Wechsler Intelligence Scale for data collection and reading diagnostic test (Saman table) and multidimensional program Rasad that was used. To analyze the data using SPSS and univariate and multivariate covariance covariance was used.

Results: The results showed that the mean score in reading, decoding, fluency and comprehension pretest-posttest control group with significant difference ($P= 0.001$).

Conclusion: According to the results, it can be said that multi-dimensional program can improve dyslexic students' reading performance.

Keywords: Comprehension, Decoding, Dyslexic, Fluency, Reading

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Introduction

Reading is a kind of basic and key skill and is defined as the ability to decode written signs in the form of speech sounds (1). It is obvious that the occurrence of a disorder in it can cause many problems for the affected person. Children who have reading problems due to the weakness they

show in this skill cannot make progress in the educational programs of the school, which in turn causes social, economic, cultural and emotional-psychological damages for them and the society (2).

Some researchers believe that more than 25 percent of the educational failure of primary

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school children is due to reading failure (3). By examining the results of the research conducted in Iran, the prevalence rate is reported as 5.8%, and boys suffer from the problem by 1.1 to 2.2% more than girls (4). Considering that dyslexic children show their problems in the components of decoding, fluency and understanding (5), the problems of these people in decoding are such that in creating phoneme-letter correspondence and connecting it with the word and They have a very poor understanding of the relationship between words and text, which causes them to not understand the relationship between written symbols and spoken sounds, and they focus most of their attention on decoding printed words, as a result, they will not be able to read fluently. The importance of fluidity is due to the fact that fluidity enables a person to read a text correctly, accurately and quickly. Reading comprehension has a close relationship with text comprehension. Unfortunately, the dyslexic child has little growth in the skills of recognizing and recognizing the word and understanding what has been recognized (6), which causes the final goal of reading to be the comprehension of the text as the third component of reading. 7) They do not reach and these reading problems lead to several problems that are sometimes irreparable, which doubles the importance of diagnosing these children in the primary period.

In addition to that, there is also evidence of the effectiveness of remedial educational interventions for those students who have been enrolled from the same early age, i.e. elementary school. In such a time, it is possible to reduce the problems by providing remedial programs, and rarely this program can be effective in the subsequent learning of the child after the primary period (7). In the multi-dimensional program, taking into account different dimensions such as cognitive, emotional-social and motor skills, the necessary prerequisites for reading sensory actions such as visual, auditory, motor actions such as fine and gross motor skills, cognitive actions are reached. and general knowledge such as perceptual organization, conceptualization, problem solving, communication actions such as understanding and expression and language use and behavioral actions including creation, attention, self-regulation and reading components (decoding, fluency, comprehension) It is restored

and strengthened with various methods adapted from meta-linguistic, behavioral, cognitive and meta-cognitive awareness approaches so that reading is realized in its true meaning. So far, many researches have been carried out in the field of psychological-educational treatments to reduce the symptoms of dyslexia and improve their academic performance, and it shows that the educational treatment methods used in increasing the academic progress of students with learning disabilities have been effective; Among these researches, we can mention the researches (8-13) that indicate the effectiveness of psychological-educational treatments of learning disability in improving the symptoms and academic progress of dyslexic students, and this makes the importance of special education completely clear. Considering the importance of reading and solving the problem of poor reading, the present study was conducted with the aim of investigating the effect of the multi-dimensional program Rasad on the three reading skills (decoding, fluency, and reading comprehension) in first and second grade elementary school students.

Materials and Methods

In this research, the subjects were selected and replaced in the experimental and control groups randomly, and the effect of other variables such as intelligence, calendar age, class and language of the subjects, and gender were controlled. By manipulating the independent variable, i.e. presenting the multi-dimensional program to the experimental groups and not presenting this program to the control groups, its effect on the dependent variable, i.e. the improvement of reading performance, was investigated and measured. The statistical population for this research is the children who have been introduced by the schools to the Behbahan Center for Disorders. For the intended research, 30 dyslexic students were needed, and this number was selected through a multi-stage sampling method. that in the first stage, among the children who were introduced to the disorder center, we selected first and second grade students with dyslexia, then in the second stage, we selected 30 of them and randomly Two groups of 15 experimental people and 15 control people were replaced. The following tool was used to collect information.

Research instruments

A) *Children's Wechsler Intelligence Test*: This test was used to evaluate students' intelligence, this test has two verbal and non-verbal subtests. Verbal sub-tests have a high correlation between both non-verbal sub-tests. But the correlation between verbal and non-verbal groups is weak. Validity of this test in general scale (96%), verbal scale (94%) and non-verbal scale (90%). The measurement standard error for the general scale was (19.3), verbal scale (60.3) and non-verbal scale (66.4). The validity of the test through the peer forms is approximately 90 percent, and the validity of the test is obtained in the reading texts (87 percent) and the speed and accuracy in the read texts (94 percent).

B) *Reading test (Seman Table)*: This test consists of word recognition and text comprehension (14). To evaluate and measure the level of reading ability, two texts should be prepared from the student's Persian book. One text for the pre-test that the student reads aloud and at the end answers the questions below the text and another text for the post-test and after the end of the therapy sessions is read by the child and answers the questions. The following questions will be answered. The validity of the reading assessment test, which was conducted on normal 8-year-old children, is 85%, and the validity of this test is 87% (15).

C) *The multi-dimensional program reaches*: This program, which is held in 21 one-hour sessions: in the first session, interviews and observation of the child and mother, and seven recommendations to parents, which include: providing a diet to prepare the child as much as

possible for the program. Let's prepare educational restorations that this regime is provided under the supervision of specialists. Also, in the continuation of the training session, parents are taught two types of massage, one type of massage for waking up and the second type for the time before the child sleeps. Regulating sleep and the type of exercise that the child should follow in a specialized way, as well as determining the hours of using TV and CDs, the time of naps, and the time of creativity.

After making sure that these points are done by the parents and emphasizing on their implementation by the parents, the rehabilitation program will be started after one week of the diet. At the end of the educational rehabilitation program, to check the condition of the participants, all three components of decoding, liquid. We evaluate their reading comprehension with a diagnostic reading test.

After diagnosing the student through the reading diagnostic test and the type of the student's problems and the frequency of his problems in the Seman table, we start the intervention program in such a way that after the interview session, the first eleven sessions were dedicated to the decoding stage, then five sessions. The fluency stage and the final four sessions were dedicated to the reading comprehension stage, which is the last stage of reading. After completing the remedial program, to check the result, we again performed the reading diagnostic test on the child, this time with a different text.

Results

Table 1. The results of one-way covariance analysis on the post-test scores of the reading process by controlling the effect of the pre-test

Source	SS	Df	MS	F	Sig
Pre-test process of reading	84.438	1	84.438	26.604	0.001
Group	1592.393	1	1592.393	501.715	0.001
Error	85.695	27	3.174		
Total	20419	30			

Table 2. The mean and standard deviation of the "reading process" variable in the pre-test and post-test of the control and experimental groups

Variable	Pre-test		Post-test	
	M	SD	M	SD
Process of reading	33.93	2.68	32.47	2.59
Groups	33.20	2.17	2.17	2.34

As shown in Tables 1 and 2, after adjusting the post-test average scores by removing the pre-test effect, the experimental intervention in the post-test stage has a significant effect ($F=501.715$), $P<0.001$) was read in variable scores; In such a way that the average reading variable in the post-test (mean 17.2 and deviation 2.34) compared to the pre-test (mean 33.2 and deviation 2.17) has

decreased significantly. Of course, a significant decrease in the reading variable means a decrease in the frequency of reading problems, which means an increase in reading skills.

The indicators of decoding words, reading fluency and understanding the text were used using the multi-way covariance analysis method, the results of which are shown in tables 3 to 5.

Table 4. Mean and standard deviation of research variables in pre-test and post-test

Variable	Group	Pre-test		Post-test	
		M	SD	M	SD
Decoded	Control group	50.67	4.43	55.27	4.98
	Groups	51.60	5.99	73.07	5.16
Comprehension	Control group	2.07	0.59	2.80	0.68
	Groups	2.27	0.59	5.20	1.01
Flowing	Control group	11.11	1.06	7.64	1.09
	Groups	10.44	0.96	10.54	1.20

Table 3. Multivariate statistical indicators in covariance analysis of dependent variables

Test	Value	F	Hypothesis df	Error df	P
Pillai effect	0.885	58.843	3	23	0.001
Wilks Lamda	0.115	58.843	3	23	0.001
Hoteling effect	7.675	58.843	3	23	0.001
Roy's greatest root	7.675	58.843	3	23	0.001

Table 5. Results of multivariate covariance analysis to examine dependent variables

Dependent variable	Sum of squares	df	Mean of squares	F	P
Post decoded test	1818.26	1	1818.26	151.98	0.001
Post reading comprehension test	33.92	1	33.92	104.85	0.001
Post fluid test	34.01	1	34.01	53.75	0.001

According to the obtained results, Wilks's lambda index, which shows the effect of group type on the linear combination of the dependent variable (subscales post-test), is significant ($F=58.843$, $P< 0.001$). Univariate analysis of covariance statistics were also calculated for each

dependent variable separately to determine the source of statistical significance of the multivariate effect. Table 5 shows that after controlling the effect of pre-tests on the post-test score, the group effect has become significant in all post-tests. In other words, in all the post-tests,

there is a significant difference between the averages of the experimental and control groups. This shows the positive effect of the experimental intervention on the development of the three skills of word decoding, fluency and reading comprehension.

Discussion

The present study was conducted with the aim of investigating the effect of the multi-dimensional program Rasad on the three reading skills (decoding, fluency, and reading comprehension) of dyslexic students in the first and second grades of elementary school. The existence of a significant difference between the results of the pre-test and post-test reading scores with the intervention of the experiment shows the usefulness of the effectiveness of the multi-dimensional program in improving the reading performance of dyslexic students, which is consistent with the statements of the relevant teachers and parents. Students and reading diagnostic assessment results are confirmed.

The result of this research is in line with some researches that have been conducted to investigate the effectiveness of therapeutic interventions on improving the reading process. For example, the findings of this research are in line with the results of the study (16) which was conducted in order to meta-analyze the effectiveness of psychological-educational interventions on the academic performance of dyslexic students and concluded that psychological-educational interventions have a great impact on improving the academic performance of dyslexic students. is; Also, with the study (17), which investigated the effectiveness of learning disability centers in Ardabil province in improving the symptoms of students' learning disorders, it was shown that holding training classes in special centers for learning disabilities leads to the improvement of symptoms and academic progress of students. In general, the importance of therapeutic educational programs on improving reading performance is confirmed. In another study, which was about the effectiveness of special learning disability training in improving the symptoms and academic progress of this group of students, and concluded that special learning disability training is very useful for improving the

symptoms and academic progress of this group of students, our findings with The results of this study are consistent (12,13).

Also, a significant increase in the decoding score of all fifteen subjects was achieved in the post-test with the intervention of the multi-dimensional program, which uses the combined method of direct training and phonological awareness. This finding is consistent with the findings of several studies, which we mention below including a research (18) that found in a pilot study that regular and systematic phonological awareness training improves decoding skills in children with reading disorders and that phonological awareness is very important for the development of decoding skills in reading written texts (19)). This finding is in line with a study (18), these researchers investigated the effectiveness of the combination of direct reading instruction and phonological awareness instruction on the performance of primary school students in the fields of decoding fictitious words and recognizing words in text. Reading fluency and reading comprehension found that when these two teaching methods (direct teaching and phonological awareness) are combined, their effectiveness increases significantly.

If it can be seen from the results, the reading time score in seconds (fluid) of 15 subjects in the post-test and after the intervention has improved significantly, and this significant difference in the pre-test and post-test is due to the effectiveness of the program. It is multi-dimensional in fluidity. This finding is in line with the findings of many studies, which we mention a few of these researches below. Like a research that investigated the effectiveness of metacognitive strategies (bilateral training) on improving reading and reading comprehension and reading speed of elementary school students with reading disorders and put 34 students under bilateral training for 36 sessions so that reading and reading speed and comprehension The article was improved (20).

Also, in another study, which aimed to investigate the effect of phonological awareness training on the speed, accuracy, and comprehension of dyslexic students in the second grade of elementary school, it led to a significant difference in the average reading score, accuracy,

speed, and comprehension in the post-test of the experimental group with was pre-tested, it is also consistent so that it can be concluded that phonological awareness training improves the reading performance of dyslexic students (21).

The reading comprehension score of 15 subjects in the post-test after the intervention sessions has increased to a great extent, and this significant difference in the two stages of the pre-test and post-test due to the multi-dimensional program reaches the reading comprehension component that uses It is cognitive and metacognitive strategies. This finding is in line with the findings of some studies, which are mentioned below. For example, in the study (22) with the title of examining the combined effect of cognitive and self-monitoring active metacognitive methods on the comprehension of students with reading problems, the experimental group was tested in 8 sessions, under self-comprehension training using self-directed methods. It came to the conclusion that the active cognitive and self-monitoring methods have positive characteristics that their application leads to an increase in the level of understanding required by fifth grade elementary students and improves their reading skills, and in research (23) it also affects the understanding of metacognitive reading strategies. Students with reading comprehension

problems were investigated. In this way, the test subjects were trained in metacognitive strategies, and after that, the data analysis showed the positive effect of metacognitive strategies on the subject's understanding, and the findings of our research are also in line with the results of this research. In another research, (24), in the study of the effectiveness of teaching metacognitive strategies and documentation training on the reading comprehension of dyslexic female students in the fourth grade of primary schools in Isfahan city, they concluded that teaching metacognitive strategies and documentation training had a positive effect on students' comprehension. He has dyslexia.

Conclusion

It seems that the multi-dimensional program effectively improves the reading performance of dyslexic students.

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