

The Effect of Learning Memory Strengthening Skills on Improving Dictation in Female Students with Learning Disabilities in Arak Education Area

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Article history:

Received date: 10 April 2018

Review date: 23 May 2018

Accepted date: 11 July 2018

Keywords:

learning disorder, dictation,
memory enhancement skills

Abstract

Purpose: The purpose of this study was to investigate the effect of training memory enhancement skills on improving the dictation of female students with learning disabilities (writing). **Methodology:** The present study was a semi experimental design with pre-test / post-test design with control group. The population of the study consisted of all female primary schoolchildren with dictation disorders who were studying in Arak district schools in the academic year of 1995-94. Among the referral students had problems with dictation by a teacher of 30 students who had diagnostic criteria for dysfunction disorder. They were randomly assigned to two experimental groups (15 people) and control (15 people). Information was collected by version 5 of Stanford / Binet's Intelligence Lab and a researcher-made spelling. The experimental group was trained in memory enhancement skills in 10 sessions while the control group did not receive any training at this time. Data analysis was performed using multivariate analysis of covariance using SPSS-22 software. **Findings:** The results indicated that there was a significant difference between the post test scores of the two experimental and control groups at the level of 0.05 and the students' writing scores improved after the training sessions. **Discussion:** The training method used in this study can be suggested as a desirable method for improving the dictation of dyslexic students.

Please cite this article as: Niousha N. (2018). The Effect of Learning Memory Strengthening Skills on Improving Dictation in Female Students with Learning Disabilities in Arak Education Area, *Iranian journal of educational Sociology*. 1(10), 133-140.

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1. Introduction

Learning disorders today are the most important category of special education. Children with learning disabilities form a heterogeneous group. The commonplace among them all is that they all have difficulty in learning school lessons. Learning disability often leads to academic failure. (Kakavand, 2000). As defined by the Association for Learning Disabilities, injury disorder is one or more of the psychological processes necessary to understand, understand or use language, writing, or speech, which may be in the form of incomplete ability to listen, think, speak, read, Spitting or doing mathematical calculations (Schiff and Toledo, 2013). People with learning disabilities share a degree of academic and social disadvantage. They are not able to do what other people with the same level of intelligence can do and need special education for academic achievement (Lerner, 2014).

According to the fifth issue of the Diagnostic Manual for Diagnostic Disorders (DSM5), learning disabilities are common in all areas of practice, such as reading, writing, and math, between 5% and 15% in childhood ages and in different languages and cultures, but the prevalence It is unknown in adults and around 4% is estimated and its prevalence is more common in men than in women (American Psychiatric Association, 2013). According to a meta-analysis in Iran, the overall rate was 81.8% of that prevalence, which in fact indicates a high prevalence of these disorders In his studies, he has an Iranian student (Hashmatami, Principle of Alari and Shokrallahi, 2016).

Learning disabilities in the field of written expression as a formidable potential problem represents a problem in one of the best form of communication that has recently been given more attention (Mercker & Plan, 2009, quoted by Smith and Poplaville and others 2012). Three domains The main incapacity in writing is writing, writing, spelling, and writing, which are generally problematic for the majority of the population, either mechanically or creatively, and the effects of written language problems increase with the age of the student, as the need to write academic assignments with increasing Age is higher (Smith, Poloville and others 2012). The most common component of written speech disorder is the failure to dictate. The statistics show that 27% of all learning disorders are dyslexic learning disabilities. In Iran, the prevalence of dictation disorder in the third grade of primary school is reported to be between 6% and 7% (Narimani and Rajabi, 2013).

Having such skills (which is necessary for any age of the same age to achieve academic achievement) requires the mastery of many other skills, such as: the ability to keep the subject in mind, setting the subject in the form of words, graphic drawing of each letter and word, the use of writing tools and having visual-motor memory is commensurate with doing the task (Knowledge, 2005). Children (with learning disabilities, writing) find it difficult to obtain such skills, such as the inability to organize thoughts and turn them into the correct form (Wallace et al., 2011), limited vocabulary, weakness In reading, the weakness in the use of grammar and combination of sentences, illegible handwriting, real memory impairment (Chalfant, 2011) and self-esteem and low self-concept (Seyf Naraqi and Naderi, 1392), among the characteristics of this group of children (with learning disabilities) Written). Therefore, on the one hand, according to the issues related to the problems of such children, on the other hand, considering the reported figures for the prevalence of the disorder, which is never less than 1 percent, and this one percent means The involvement of at least 200,000 people out of every 20 million people in our community has a disorder (written expression) that requires serious assistance from education professionals.

2. Literature Review

In studying the causes of disorders, various studies have shown three factors of the characteristics of children, family and social environment as the main factors affecting the formation of childhood disorders (Hayman & Berger, 2011). Among these factors, paying attention to the characteristics of children (intrinsic

factors) is important, so that motivational and cognitive factors are considered as interpersonal factors affecting learning. Given that learning disabilities are characterized later in life (dates, Abbasi and Rajabi, 2011), and learners with learning disabilities cannot achieve educational goals often through conventional education methods; hence, they hate learning and they may leave education (Grant and Grant, 2010).

Children with learning disabilities are usually not intelligently diagnosed, but due to defects in the ways of processing their brain data, they show lower mental performance. In plain language, learning disabilities can be attributed to differences in memory pathways and their relationship to the brain. This mode may appear to be a major flaw in actions such as listening, speaking, reading, writing, reasoning, or counting. Most of these irregularities are inherent in nature, and their cause seems to be a bad memory system (Tote, 2012).

Active memory is the ability to keep information in mind until the end of an activity (Barclay, 1977, quoted by Dwuson and Guyer, 2009) or as a mental system that is tasked with processing and processing information for a string of complex cognitive tasks (such as : Understanding, learning, etc.), (Kashani Moovahed, 2012), and many studies have identified it as one of the most essential human cognitive abilities that is required for many of life's lives (such as need It is necessary and necessary to re-read to understand a difficult story.

Active memory enhancement is one of the cognitive and metacognitive strategies that play an important and important role in reading and writing learning and are the best and most complete strategies for reading and learning. (Roberts and Zurik, 2013). Memory education training has a significant effect on students' written improvement. (Pierce, 2013). Several research evidence suggests that memory plays a crucial role in the learning and performing of complex cognitive tasks, including writing dictation (Elli, 2012, Dawson & Guwyer, 2009), probably utilizing memory to write A word is harder to read, because it is difficult to read a word, a recognition, or an act of converting a symbol or sign, and the existing text also facilitates this, while in writing a word, the conversion operation is merely memory. And there are no side-effects (Westberg and Kleinberg, 2010), so some children who are difficult to write in dictation may be There are no problems in reading skills. Of course, in both cases, both problems can be observed (Saif Naraghi and Mirmohdi, 1392). Children who have weakness in dictation have difficulty in hearing loss and cannot keep the sounds and floods in their minds. Also, memory is one of the most important factors in writing dictation, and children who have difficulty in dictation may have problems with this memory (Lerner, 2014). In general, many experts argue that impairment in memory functions (such as short-term memory defects and active memory) is a major feature of children with learning disabilities (Taroyan et al., 2010).

Kajbaff et al. (2010) conducted a research entitled "Comparison of the normal memory of children with learning disabilities in dictation, mathematics and recurrences". The findings of this study showed that there is a significant difference between the half memory of ordinary children and children with learning disabilities in dictation, mathematics and recurrences. They conclude that the memory of students with learning disabilities is a serious problem, and students with dictation learning disabilities have a weaker memory than the other two groups.

The results of many studies have shown the effect of memory enhancement training on the performance of students with learning disabilities. For example, Sheikholeslami, Bakhshash et al. (1396) in their research showed that active memory training can be used to improve reading performance and memory capacity of students with reading disabilities. In a study by Metaphilia Piknbrou et al. (2015), the short-term increase in verbal and visual / spatial and cognitive working memory was observed after working memory training in children with learning disabilities and remained stable for up to 8 months. And children over the age of 10 will benefit from these exercises more than the younger children in verbal work memory. Shirazi et al. (1395) showed that the training of auditory memory enhancement exercises is effective in the ability to read dyslexic children. Success and colleagues (1393) also emphasize the impact of work memory enhancement on improvement of failure and improving the working memory of dyslexic students Juan have mentioned.

Bigdley and colleagues (2013) point to the positive effects of the use of helpers in dictation education in children with dictation disorders, and Khatamann and Ghorbanpour (2012) also argue that memory reinforcement strategies have a significant effect on visual consistency and improves the spelling of primary school students.

Due to the fact that students with learning disabilities, on the other hand, face the problem of weakness in active memory function, which causes the ability to read and write skills that are considered as the most important and urgent issue in everyday life of individuals. If they do not have an intervention for these students, they will have difficulty over time in order to improve the learning experience of learners with learning disabilities. They should have memory skills in this Strengthen students. (Dir, 2012).

Since there are no rich backgrounds about the effect of memory enhancement methods on writing disorder, and most of the readings about the effect of reading disorder are memory enhancement methods, the main purpose of this study was to investigate the effect of memory enhancement skills training on improving the dictation of female students with disorder Primary Secondary Learning. In other words, the main question of the research is whether memory training is effective on improving the dictation of students with learning disabilities (writing)?

3. Methodology

The present study is based on the method of implementation and the collection of semi-experimental data, a pre-test post-test design with a control group composed of two groups of test and control. The statistical population in this study is the kidney of 2nd grade elementary school children with learning disabilities (writing) in Arak district, one of the schools that were studying in the public schools of Arak in the academic year of 1994-94.

According to the type of study, among female students with learning disabilities (writing) of the second baseline, which was based on the recognition of teachers as a student with writing difficulties, 30 were selected as sample and using available sampling method. They were randomly divided into two groups of 15 (A) (experimental group that was influenced by independent variable) and (b) control group not affected by independent variable. It should be noted that the subjects of the two groups were matched based on age (8) years, intelligence, type of disorder, gender, and academic background.

New Stanford-Intelligence Test Revision: A New Evidence from Tehran-Stanford's Intelligence Test is based on the fifth edition of Stanford Bandwidth's Intelligence, which was made in 2003 by Stanford and standardized by Afrooz and Kamkari. This version is capable of providing intelligence in the age range of 2 to 85 years. This tool consists of two verbal and non-verbal domains. In each of the domains mentioned, five subtests of fluid reasoning, knowledge, quantitative argumentation, spatial visual processing and active memory are considered. The average of each subtest is 10 and its standard deviation is 3. Also, this tool can provide 8 IQs including fluid reasoning, knowledge, intelligence of quantitative reasoning, intelligence of visual-spatial processing, active memory intelligence, verbal intelligence, non-verbal intelligence and total intelligence, and in addition to the types of intelligence that can distinguish sensitive scores The changes and combined grades associated with reading disabilities and failure calculations. The credit coefficients between 0.84 and 0.89 are derived from the ten subscales of this experimental intelligence. The calculated coefficients for this tool indicate that this tool has high reliability in the field of sub-tests and composite scores (see 2005). Quoted by Farid, Kamkari, and others, (2014).

Dictation test for diagnosis of learning disorders: There are many formal and informal evaluation techniques available to assess dictation difficulties. Most standardized tests are not appropriate for students to identify dictation problems and do not provide information about the nature of the problem or the aspect of dictation that they may have defective (Donald and Netr, Bai, Translation, Hebrew, and Nainian, 2002) Informal methods in Iran have also been used and emphasized. Unofficial tests provide more useful

information for educating these children, in light of the strengths and weaknesses of the student in dictation, compared to existing published tests. Mostly, though informal scales, there is a deeper knowledge of advances in dictation. This fan is very useful and identifies the best pattern of dictation errors (Gerald and James, Boy, and Trans.

Hi Menshi Toosi, 1369). For example, Tabrizi (2008) believes that if a student has written up to 10 dictations, we can note all the mistakes in which dictations were committed, and this is an informal evaluation method. According to Karimi (2010), the study of two cases of student spellings (first and second term spellings) is sufficient for the diagnosis of dictation problems. With regard to the above, the test used in this research is an informal dictation test, which was made by the researcher in collaboration with experts in this field. The dictation test consists of two parts. The first part of the exercises is to strengthen the dictation (including 19 short sentences) and the second part of the text is dictation (including 12 sentences). According to the time of the research, to select the content of the pre-test and post-test from the second year book Students have been used. To prepare the test according to the difficulty of different parts, first we divided the book into three parts (first, middle and last) and selected a few sentences and words in each section. To confirm the content validity of the test, the opinion of five teachers of the second grade was also applied.

After identifying disorder, student writing was randomly assigned to two groups of trial (15) and control (15). Then, a dictation pretest was performed on both groups, then the training group was trained in memory enhancement skills for 12 sessions and each session for one hour. After completing the dictation sessions, the dictation was repeated on both groups and at the end, the results of both groups were compared and analyzed.

Table1.Memory Improvement Skills Training Program and Dictation Improvement

Session number	the main topic	activities
1	visual memory Enhancement	Alphabet recognition, voice recognition (first, middle, last), recognition and reminder of the cards presented respectively
2	visual memory Enhancement	Fernald's multi-sensory method, fragmentation and sounding, cryptographic training, field shape recognition, puzzle work, visual memory method for polynomials (dictation with cards)
3	visual memory Enhancement	Syntax of Letters with the help of Sina's Educational Tool, Letters Breakdown with Sina's Educational Tools,
4	audio memory Enhancement	Streaming audio, listening and listening memory including: a. Chasing commands, b. Understanding the sequence of affairs during listening
5	audio memory Enhancement	Reading details, getting the original, deducing and extracting results,
6	audio memory Enhancement	Listening critically
7	working memory Enhancement	The ability to remember and manage information processing, use of a leader to remember sentences with complex grammatical structure,
8	working memory Enhancement	Use the forward-looking strategy and vice versa, use the game strategy yes / no
9	working memory Enhancement	Use the strategy to remember three or more or non-related words, use the strategy to remember and succeed the instructions.
10	working memory Enhancement	Use the information classification method to less units or pieces
11	working memory Enhancement	Use the fractionation and mixing method, use the strategy of executing the instructions and sequence of events
12	Conclusion	Repeat and practice past sessions to correct weaknesses

4. Findings

Table2. Descriptive findings

	Control(n=15)		experimental (n=15)	
	M	SD	M	SD
pretest	2/04	11/20	10/73	10/73
Post test	1/62	12/20	2/42	10/20

The results of Table 2 indicate that the test scores of the experimental group in the post-test increased compared to the pre-test, while no significant change was observed in the control group scores. The question of whether the training of memory enhancement skills was effective in improving the dictation of female students with primary school impairment were answered using the Ancova multivariate covariance analysis. But first, the underlying assumptions of using this test (ie, homogeneity of variances, homogeneity of regression slope) were investigated: Homogeneity of variances was studied using the Levine test, the results of which are shown in the following table:

Table 3. Levin test to examine the homogeneity assumption of error variances

	Df ₂	Df ₁	F	significance
dictation	28	1	1/369	

The significance level of F in each of these variables is greater than 0.05; that is, the equation of the variance of the dependent variable error exists for this variable. Homogeneity of night regression is also related to the relationship between the variable of change and the dependent variable for each of the groups. What is being examined there is the existence or absence of interaction between the variable of change and interference or experimental manipulation. Which should be at level 05/0 and not meaningful

Table4. Regression line tilt homogeneity test for dependent variables

Dependent variable	source	Mean of squares	df	Sum of square	f	significance
dictation	pretest	14/379	1	28/759	3/181	0/057

As shown in Table 4, the significance level of this research variable is higher than 0.05, so it can be said that in general, the homogeneity assumption of the slope of the regression line exists.

Table 5. Results of single-variable covariance analysis among subjects in order to compare dictation score

Dependent variable	source	Mean of squares	df	Sum of square	f	Effect size
dictation	pretest	14/379	1	27/166	6/285	0/057

Students in the experimental group have significantly increased after the intervention; therefore, it can be claimed that "memory enhancement skills training has been effective on the dictation score of the students in the experimental group". The volume of work also suggests that about 195.5% of the increase in "dictation score" is affected by "memory skill training".

5. Discussion

According to the results, there was a significant difference between the dictation scores of the students who were in the experimental group and received training in memory enhancement skills and the control group ($p < 0.05$). The above results were used to confirm the independent effect on the dependent variables. This means that memory enhancement exercises have been effective in improving the dictation of children with writing disorder. The results of this study were compared to other studies in this area such as Gralin and Jacobson (2014), Karimi Joostani et al. (1394), Ismaili et al. (1393), Bigdeli et al. (1392), Pakdaman and Ghorbanpour (2012), Dahlin (2010), Moradi and Mirmohdi (2010), and Hossein Zare et al. (2009), which are more indirectly related to the effects of memory training on dictation disorders, and most of their results

are in the form of cognitive and metacognitive effects and similar methods. The results of this study are also consistent with Gary and Chabean et al. (2012) and Klingberg et al. (2005) and Holmes et al. (2009) Maximum.

Gralin and Jacobson (2014) in their research showed that metacognitive interventions have an impact on the growth of children's written expressions. Karimi Justeti and colleagues (1394) also conducted a study on children in dysfunctional dysfunctions that showed that Mardan's training in improving the dyslexic performance of students with impaired students was effective and therefore stated that metacognitive interventions are useful in the treatment of learning disorders. Ismaili et al. (2014) have shown that interventions based on accurate education are effective on the ability of dictation of elementary students. Bigdley et al. (2013) examined the effectiveness of the use of helpers, and their results showed that the use of dyslexic method was effective in dictation students with dysfunctional learning disorder. Similarly, Dahling's (2010) study showed that working memory training could be a significant reward for children with a visa requirement.

The results of Moradi and Mir Mehdi's research (2010) indicate that working memory training and the method of superposition have a significant effect on improving the writing performance of students with writing disorder. Instead, Gray et al. (2012), Klingberg et al. (2005) and Holmes et al. (2009) showed that work-related learning curricula do not show a change in the academic achievement and behavioral symptoms of people with learning disabilities. According to these scholars, this Changes may show up over time, so subsequent measurements indicate that there is a transfer of training effects in these aspects.

In explaining these results, students with learning disabilities have problems in the fields of cognition, metacognition, and memory. Evidence suggests the importance of problems with working memory and the executive function of reading, writing, and mathematics for students with learning disabilities, such as short-term memory problems. These problems cause more time to complete the assignment than others. Since one of the main goals of the education system is to provide and build up memory building structures in individuals, learners face learning activities or tasks with high self-esteem and a sense of assurance that they will be busy with the task. Or at least with the feeling that they know how to get out of them, they will deal with them. They know that learning is an active form and they themselves have to accept part of their responsibility. To achieve this goal, the concepts of memory enhancement skills and metacognitive awareness are necessary (Azaogok & Hatik, 2014).

Based on the importance of memory in reminding of stored content and due to the undesirable effects of memory limitation and weakness on the performance of students with learning disabilities, in particular dysfunctional disorder, addressing memory enhancement using memory skill training methods in this The field is effective. Since memory enhancement skills include exercises to enhance visual memory, audio memory was given to the children with content and purpose specific to memory components such as verbal, visual-spatial, using shapes, letters and numbers. The above interventions strengthen the visual-spatial, verbal memory, and so on, and improve the spelling in the course of the study. Therefore, memory training can improve problems such as moving different letters with similar sounds, which is a common problem in these children. In other words, memory enhancement improves the spelling performance of students with learning disabilities. According to the results obtained in this study, the training of memory skills can eliminate the weakness of these students in memory and data recovery and the performance They will improve dictation.

One of the limitations of this study is the lack of standard training programs and content for training memory enhancement skills. Also, the lack of follow-up from the other criteria of the study, which is suggested to be followed up in further research. The number of few meetings in one month was one of the other constraints of this study, which is suggested to be considered in future research. Schools and schools are among the centers where training for memory boosting skills can be recommended.

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