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Original research

Investigating the Effect of Cognitive Behavioral Play Therapy Skills on Improving Reading Performance and Executive Functions of Dyslexic students

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Abstract

Introduction: Dyslexia is a specific learning disorder that is characterized by serious and continuous problems in learning reading skills, and its cause is not the existence of problems related to brain damage, vision problems, and insufficient or incorrect education. This study aimed to examine the effect of cognitive behavioral therapy skills on reading performance and executive functions of dyslexic students.

Research method: This research was semi-experimental with a pre-test-post-test design and a control group with a one-month follow-up period. The statistical population consisted of dyslexic students who were referred to the learning disorders center of one district of Karaj in the academic year of 1401-1400. 30 students were purposefully included in the study and randomly assigned to the experimental and control groups (15 people in each group). The students of the intervention group were trained in cognitive behavioral play therapy skills in 10 sessions, twice a week. The research tools included Kerami's reading and dyslexia test and Gioia et al.'s executive performance behavior rating list. Data analysis was done using SPSS version 26 software and analysis of variance with repeated measures.

Findings: The results showed that cognitive behavioral therapy skills were effective in improving reading performance ($P<0.01$) and increasing executive functions ($P<0.05$) of students, and the effect of this intervention method lasted until the one-month follow-up stage ($P=0.053$).

Conclusion: According to the results obtained using cognitive-behavioral play therapy, an effective step can be taken to improve the reading performance and executive functions of dyslexic students.

Keywords: Cognitive Behavioral Play Therapy, Dyslexia, Executive Functions, Learning Disorders, Reading Performance

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Introduction*:*

Reading is the foundation of learning and an integral part of the education process (1). Reading skill is an important predictor of a person's academic success in the future, and a person's academic performance in other subjects is also dependent on this skill. In addition, reading is related to the success of people's careers (2) and is a factor in the growth of the human capital of countries (3), and therefore teachers should take a serious look at it, especially in the primary period (4). However, sometimes reading skills in students who have normal and natural intelligence and have had basic education appear as a disorder, which is called dyslexia (5). Dyslexia is a specific learning disorder characterized by serious and persistent problems in acquiring reading skills, and this problem cannot be attributed to mental age, vision problems, and inadequate or incorrect education (6). Dyslexia is the most common type of learning disorder (7). This disorder causes problems with the accuracy, speed, and understanding of the text (8) and has symptoms such as incorrect and slow reading of words, difficulty in spelling, and lack of understanding of what is being read (9).

The prevalence of reading disorder is between 5 and 17% and it constitutes about 80% of all learning disorders (10). According to research related to dyslexia, this problem has hindered the academic progress of students more than other learning disabilities in various fields, and in addition to academic failure and social-emotional and behavioral problems, people with reading disabilities show evidence of combined and intertwined symptoms of mental disorders also show (11).

Considering the importance of reading in students' lives, theories have been presented for the treatment of reading disorders, and one of the most important theories proposed recently is the theory of executive functions. Executive functions refer to high-level cognitive activities for planning and purposeful activities that control other behaviors (12). Executive functions are the focus of neuropsychological theories of children with learning disabilities and have an essential role in reading skills because these functions facilitate the reading process by allocating attention to relevant information and inhibiting irrelevant information (13), although executive functions have There are many components, but attention to research, among the important antecedents of these functions in reading disorder, are sustained attention and response inhibition (14). Today, in addition to research evidence, neuroimaging data has proven deficits in attention and inhibition in dyslexia (15).

Sustained attention is the simplest and most basic level of attention that other types of attention require, and a deficiency in it can cause problems for other types of attention (16). Sustained attention is the ability to focus on a task for an extended period. Researchers have shown that the level of attention of dyslexic children is lower than normal students (17). These children have more distractions and less attention and cannot maintain their attention to the learning materials during education (18). Sustained attention indicates cognitive capacity and is very important in text comprehension because successful text comprehension requires discovering relevant stimuli and maintaining focus on them over time (19).

Also, sustained attention, in correct reading, is related to the reader's correct understanding of the written phonetic form of the word and is considered a necessary aspect for decoding new words because it makes the reader focus on important and necessary information and discard irrelevant information that leads to better decoding. It increases reading speed (20).

Another cognitive component related to reading skills is response inhibition, which has a

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fundamental commonality with other components of executive functions, and in Barclay's model, it is referred to as a shield against distractions and disruptive factors and promotes other functions (21). Response inhibition is the ability to suppress irrelevant, intrusive, incorrect stimuli, dominant responses, behavioral choices, and automatic behavioral habits (22). Response inhibition inhibits activated and automatic responses to a stimulus, simultaneously retaining relevant and ignoring irrelevant ones, and resists intrusion errors that affect responses from memory. Response inhibition is also related to rapid information processing (23). If irrelevant and irrelevant information is removed from the processing system, the memory load is reduced and only important and relevant information is entered into the processing system, which ultimately leads to an increase in reading accuracy, reading speed and finally understanding the text (24) have shown that dyslexic children have defects in tasks that measure their cognitive inhibition, and the inhibition process is an important factor in predicting reading comprehension and performance (25).

Today, the most common language skill used to access rapidly developing information is reading. Reading can be described as the perception of printed or written words through sensory organs that takes place through cognitive processes (26). Reading has skills such as speed, accuracy, and the final product of understanding the text, which makes a person able to read a text and respond to their needs. Research results show that, unlike normal students, dyslexics delete, add, or reverse words while reading. Also, they have difficulty distinguishing between letters in shape and size, which causes word misreading, slow reading speed, and lack of understanding (27).

Neurological evidence shows that reading takes place in the brain and is dependent on the brain systems used in spoken language, and the symptoms of dyslexia manifest themselves in the early stages of development through weakness in cognitive abilities (28). Considering the importance of dyslexia treatment, in recent studies, steps have been taken for non-invasive brain stimulation that leads to increasing cognitive capacities, part of these interventions have been done through cognitive behavioral play therapy. The cognitive-behavioral approach has been used in various disorders using its cognitive and behavioral components to manage the problems of these disorders (29), this approach seeks to achieve treatment goals by using emotion, cognition, and behavior. The cognitive dimension with components such as recognizing negative thoughts, cognitive errors, re-evaluating the problem, and correcting thoughts, as well as the behavioral dimension with components such as reinforcement, confrontation, relaxation, and behavioral activation, is effective in reducing problems and improving the coping pattern of people (30) and can He used this approach in the form of play therapy for children, which affects increasing the therapeutic efficiency due to the attractive and easy process of play for children. Play therapy is the systematic use of a theoretical model to establish an interpersonal process in which using the therapeutic power of play helps to prevent or solve the client's problems and achieve his desired growth and development. Today, attention-based play therapy has attracted the attention of many researchers. Such plays have educational value as well as entertainment (31).

Cognitive-behavioral play therapy emphasizes the child's involvement in the treatment and the therapist helps the child to benefit from the treatment by providing the necessary measures in terms of development. A wide range of techniques and methods can be included in play therapy with a cognitive-behavioral approach. Cognitive behavioral play therapy provides strategies

for more adaptive development of thoughts and behaviors; It teaches new strategies to deal with situations and feelings, and the child can replace maladaptive ways of coping with more adaptive ways (32).

Much research has been done about the improvement of executive functions using various methods for dyslexic students. However, research on the use of cognitive-behavioral plays in improving executive functions is very limited, so it was considered in this research to achieve the effectiveness of the intervention. The results of the research can help educator's school teachers psychologists and learning disorder specialists in using a more effective method to solve specific learning disorder problems in reading***.***

Table 1. Summary of cognitive-behavioral play therapy intervention sessions

meeting	The content of the meetings
first session	Familiarizing the researcher and the children with each other, stating the group's purpose and rules, teaching problem solving using parables and stories and playing chairs.
second session	Psychological training includes recognizing thoughts and feelings and expressing them, using drawings, group plays such as the emotional wheel game, emotional situation cards, and anger balloons.
third session	Psychological training includes knowing the dimensions of emotions using stories and identifying the types of recognition and emotions of the characters in the story, using the game of wolf and flock, and drawing the faces of different emotions.
fourth session	Cognitive reconstruction includes identifying cognitive distortions and challenging them, identifying emotional stimuli using role-playing, using practice drawings, thought bubbles, or role-playing such as dolls with different behavioral styles, and challenging cognitive distortions by playing the anger feeling scale game and thinking game. loudly
fifth session	Relaxation, various games such as bubble games, breathing journeys, imaginary games, ice games, and identification of calming activities by playing the magic carpet game.
sixth session	How to stop thinking, identify disturbing thoughts using role-playing, stop disturbing thoughts game, remote control thoughts game, and play the alarm clock game.
seventh session	Teaching coping and problem-solving with stories and games.
eighth session	Teaching positive self-talk and reforming thinking using role-playing and games.
ninth session	Teaching social skills, recognizing and expressing emotions, communicating with others, and using the display of acceptable social behaviors for children.
tenth session	General group discussion about educational materials and methods learned reviewing the games, expressing the opinions of the group members, and performing the post-test.

In this research, the data were analyzed in two descriptive and inferential statistical sections using SPSS version 26 software, considering the significance level of □=0.05. The descriptive

part includes the mean and standard deviation of the pre-test, post-test, and follow-up stages. In the inferential part, the Shapiro-Wilk test was used to check the normality of the distribution of the dependent variables, and Levine's test was used to check the equality of variances and the normality of the distribution. Then, according to the nature of the hypotheses and objectives of the research, the data were analyzed using the analysis of variance with repeated measurements and the Bonferroni test.

Findings:

In this research, 30 dyslexic students participated in the experimental group and the control group (15 people in each group). According to descriptive statistics, there was no significant difference between the groups in terms of gender and age, and it can be said that all three groups were homogeneous. The ratio of boys and girls in the intervention group was 60 to 40 and in the control, group was 56 to 44. The mean and standard deviation of the age of the participants in the intervention group was 10.7±0.703 and in the control group was 11±0.755.

Table 2. Comparison of mean and standard deviation of reading performance scores and executive functions of the intervention and control groups in the pre-test, post-test, and follow-up stages

Variable	group	pre-test		post-test		follow up	
		M	SD	M	SD	M	SD
Read performance	Intervention group	153.4	6.59	163.7	8.68	164.7	8.98
	Control group	154.2	6.80	156.6	7.0	155.8	6.98
Executive functions	Intervention group	186.9	9.90	174.3	8.88	175.4	9.01
	Control group	185.3	8.88	184.6	8.23	185	8.65

As can be seen in Table 2, the post-test and follow-up scores of the intervention group on reading performance have improved compared to the pre-test, but the trend of the average scores of the control group has been almost constant, which somehow shows show that treatment intervention is effective on reading performance.

Also, according to the findings of the above table, there is not much difference between the two study groups in the pre-test, but after the intervention, the intervention groups show a significant difference compared to the control group compared to before the intervention. This difference can also be seen in the follow-up stage (it should be noted that low scores indicate improvement in executive functions).

To check the normality of the variables in this research, the Shapiro-Wilk test was used to apply the appropriate test, and the significance level for the sub-components in this research was more than 0.05.

The cognitive-behavioral play therapy method is effective in improving the reading performance of dyslexic elementary school students. To check the composite symmetry of the covariance matrix, Box's test was used, the calculations of which are reflected in the following table:

Table 3. Summary of the box test to check the symmetry of the covariance matrix

	Box statistic	F	df1	df2	sig
Read performance	10.7	1.58	6	5680.3	0.146
Executive functions	44.3	6.52	6	5383.4	0.001

As Table No. 3 shows, in reading performance, the significance level of F obtained is more than 0.05. This result means that the assumption of homogeneity of the covariance matrix is confirmed, and in the executive functions, the significance level of F is less than 0.05. This result means that the assumption of homogeneity of the covariance matrix is not confirmed, but due to the equality of the number of groups, this assumption can be ignored.

Table 4. Machelli's sphericity test

	Machli's statistic	X2 distribution	df	level of significance
Read performance	0.297	32.7	2	0.001
Executive functions	0.311	42.04	2	0.001

If the significance in Machli's test of sphericity is higher than 0.05, the assumption of sphericity test is usually used, and if it is not confirmed, a conservative test such as Greenhouse Geisser is used for repeated measurement variance analysis. In Table No. 4, the default results of the uniformity of covariance were not confirmed using Machli's test, so Greenhouse Geisser should be used for repeated measurement variance analysis.

Table 5. Summary of Levine's test to check the homogeneity of reading performance variance

	Sizes	F	df1	df2	sig
Read performance	pre-test	4.11	1	28	0.052
	post-test	0.027	1	28	0.872
	follow up	0.02	1	28	0.887
Executive functions	pre-test	0.449	1	28	0.508
	post-test	0.028	1	28	0.867
	follow up	0.014	1	28	0.906

The significance level of F is maintained in all stages of measurement, i.e. pre-test, post-test, and follow-up of reading performance, and the significance level of F is maintained only in the follow-up of the variable of executive functions ($P<0.05$).

Table 6. The results of the significance test of multivariate analysis of variance (MANOVA) in the research groups

		Name of the test	amount	F value	df1	df2	sig	Eta squared
Read performance	agent* of the group	Pillai test	0.844	72.9	2	27	0.001	0.844
		Wilks's lambda test	0.156	72.9	2	27	0.001	0.844
		Hoteling effect test	5.40	72.9	2	27	0.001	0.844
		The largest square root test	5.40	72.9	2	27	0.001	0.844
Executive functions	agent* of the group	Pillai test	0.706	32.3	2	27	0.001	0.706
		Wilks's lambda test	0.294	32.3	2	27	0.001	0.706
		Hoteling effect test	2.39	32.3	2	27	0.001	0.706
		The largest square root test	2.39	32.3	2	27	0.001	0.706

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As the information in Table No. 6 shows, by controlling the effect of the pre-tests of the variables of reading performance and executive functions, the Landa Wilks index is significant at the 0.01 level: Reading performance: (Wilks Lambda = 0.156, F = 72.9, P=0.001, η2=0.844). Executive functions: (Wilks Lambda = 0.294, F = 32.3, P = 0.001, η2 = 0.706).

In other words, it can be claimed that there is a significant difference in the variable of reading performance between the experimental and control groups. Also, the square of the share of Eta is 84.4% and executive functions are 70.6% of the simultaneous changes of the dependent variables related to the experimental group.

Table 7. Summary of simple analysis of variance test of in group and outgroup effects

		Source of changes	sum of squares	df	Average penalties	F	sig	Effect size
Read performance	Between subjects	group	2092.8	1	2092.8	44.5	0.001	0.641
		error	1315.6	28	46.9			
	within subject	agent	728.8	1.06	685.1	145.3		
		agent and group	716.8	1.06	673.8	143.01	0.001	0.836
		error (agent)	140.3	29.7	4.71			
Executive functions	Between subjects	group	925.7	1	925.7	15.4	0.001	0.355
		error	1679.6	28	59.9			
	within subject	agent	914.9	1.11	818.5	102.9	0.001	0.786
		agent and group	557.9	1.11	499.1	62.7	0.001	0.692
		error (agent)	248.8	31.2	7.95			

The results of the simple analysis of variance with within-subject repeated measures based on Greenhouse-Geisser, show that the main effect of the reading performance factor is significant at the 0.01 level (P=0.001, F=145.3, Greenhouse-Geisser=728.8).

This result means that there is a significant difference between the scores of factors (pre-test, post-test, and follow-up) of reading performance regardless of the group. Also, the interaction effect of the group with the factor (measurement steps) is significant at the 0.01 level (P=0.001, F=143.001, Greenhouse-Geisser=716.8). Also, the main effect of the executive functions factor is significant at the 0.01 level (P=0.001, F=102.9, Greenhouse-Geisser=914) executive functions, regardless of the group, there is a significant difference. Also, the interaction effect of the group with the factor (measurement steps) is significant at the 0.01 level (P=0.001, F=62.7, Greenhouse-Geisser=557.9).

In other words, there is a significant difference between at least two stages of reading performance and executive functions between the intervention and control groups. Therefore, to check which of the differences are related to which of the measurement steps in the groups, a confrontation test or two-run test within the subject was used, the summary of the results of which is shown in Table No. 8.

Table 8. Within-subject confrontation test of reading performance in repeated measures

	Source of changes	Pairwise comparisons	sum of squares	df	Mean of squares	F ratio	level of significance	Effect size
Read performance	agent	Pre-test - post-test	493.06	1	493.06	144.3	0.001	0.838
		Post-test - follow-up	235.7	1	235.7	147.7	0.001	0.841
	agent*group	Pre-test - post-test	516.2	1	516.2	151.1	0.001	0.844
		Post-test - follow-up	200.5	1	200.5	125.6	0.001	0.818
	error	Pre-test - post-test	95.6	28	3.41			
		Post-test - follow-up	44.6	28	1.59			
Executive functions	agent	Pre-test - post-test	612.8	1	612.8	99.4	0.001	0.780
		Post-test - follow-up	302.08	1	302.08	110.7	0.001	0.798
	agent*group	Pre-test - post-test	387.4	1	387.4	62.9	0.001	0.692
		Post-test - follow-up	170.5	1	170.5	62.5	0.001	0.691
	error	Pre-test - post-test	182.4	28	6.16			
		Post-test - follow-up	76.3	28	2.72			

According to the information in Table 8, the main effect of the reading performance variable in the pre-test and post-test is significant (P=0.001, F=144.3), on the other hand, the interactive effect of the factor and group is significant (P=0.001, 151.1 = F), the comparison of the averages in the data also shows that the reading performance score in the intervention group compared to the control group in the post-test shows an improvement compared to the pre-test, that is, the cognitive behavioral play therapy has been effective in improving the reading performance in the intervention group. Also, the results of Table 8 show that the main effect of post-test and follow-up is significant at the 0.01 level (p=0.001, F=147.7), and the obtained F related to the post-test and follow-up considering the group is also at the 0.01 level. It is significant (P=0.001, F=125.6). That is, the difference between the follow-up and post-test scores in the two intervention groups and the control group is significant. Therefore, according to these results, it can be said that cognitive-behavioral play therapy is effective in improving reading performance. The above results are well shown in the graph below. As can be seen, the reading performance scores of the intervention group improved significantly in the post-test

compared to the pre-test, but the improvement in the scores of the control group in the follow-up is insignificant, while the scores of the experimental group remained stable over time.

Also, the main effect of the variable of executive functions of the agent in the pre-test and post-test is significant (P=0.001, F=99.4), on the other hand, the interactive effect of the agent and group is significant (P=0.001, F=62.9), The comparison of the averages in the information in Table 30-4 also shows that the score of executive functions in the intervention group compared to the control group in the post-test compared to the pre-test shows an improvement, that is, the cognitive-behavioral play therapy was effective in the intervention group. Also, the results of Table 30-4 show that the main effect of post-test and follow-up is significant at the 0.01 level (P=0.001, F=110.7), and the obtained F related to the post-test and follow-up considering the group is also at the 01 level. 0.0 is significant (P = 0.001, F = 62.5), that is, the difference between the follow-up and post-test scores in the two intervention groups and the control group is significant. Therefore, according to these results, it can be said that cognitive-behavioral play therapy improves executive functions and is effective. The above results are well shown in the graph below. As can be seen, the scores of the intervention group's executive functions improved significantly in the post-test compared to the pre-test, but there was no significant difference in the scores of the control group in the follow-up, while the scores of the experimental group remained stable over time.

Discussion and Conclusion:

The findings obtained from the above hypothesis showed that cognitive-behavioral play therapy is effective in improving the reading performance of dyslexic students compared to the control group. In other words, cognitive-behavioral play therapy has increased and improved the reading performance of dyslexic students; And this increase in performance continued until the one-month follow-up stage. This finding is in line with the research results of Rasimin and Tolan (37) and line with the results of Lavasani et al.'s research (38).

Play therapy is one of the most important methods used by clinical psychologists, psychoanalysts, and counselors to treat children's problems. Play therapy is a method by which the child's natural means of expression, i.e. play, is used as his therapeutic method to help the child control his emotional pressures. Playing in the treatment of children is a means of communication that is comparable to words, a means of communication for adults. All kinds of games and toys are children's words, and if they are carefully chosen, they can provide an opportunity for children to express their feelings and problems as they have experienced them. Therapists who use play therapy believe that this method allows the child to create and influence the world on a smaller scale with his own hands, which is not possible in the child's everyday environment (27).

In the cognitive behavioral play therapy method, incompatible or ineffective attitudes are emphasized. In this method, it is assumed that they lack appropriate behavioral skills, or their beliefs and cognitive contents, or their problem-solving abilities are disturbed in some way. Keeping this issue in mind, cognitive-behavioral therapists always try to help children and adolescents by facilitating the acquisition of new behavioral skills and providing experiences that facilitate cognitive change. In this way, the treatment process begins to carefully assess the factors that cause problems in functions such as reading, then methods are presented that are

designed to increase behavioral ability and change maladaptive thinking to adaptive thinking (11, 13, 19).

Play therapy based on the cognitive behavioral model makes children more aware of their behaviors and problems and finds more suitable ways to solve problems. Considering that children with dyslexia have problems in controlling and predicting their behaviors and emotional reactions such as anxiety and depression, they need a purposeful program to regulate and manage their behaviors that focuses on cognition and thinking as well as to guide behavior (28).

In the explanation obtained, it can be said: that cognitive-behavioral play therapy as a type of psychological treatment emphasizes children's participation and uses play therapy as a model by adding cognitive and behavioral techniques (37) that can help children in the field of discovery One's interests and gaining a sense of control over the environment and using problem-solving help in dealing with problems, in the case of the maturation process, the play can be used for the growth and development of dyslexia problems, which gives the child the opportunity to be aware of the environment. The primary goal of cognitive-behavioral play therapy is to identify and change maladaptive thoughts related to the child's behaviors and emotional problems. Cognitive-behavioral therapists do not interpret play activities as a means of representing unconscious emotions, but when children play, they use strategies to change and correct behavior to strengthen their adaptive behaviors or use play situations (38) and problems caused by dyslexia, especially to improve reading performance. Also, the reason for the effectiveness of cognitive-behavioral play therapy can be seen as acceptance of deficiencies in some academic fields and efforts to strengthen some abilities (11, 15, 16, 18, 19).

The findings showed that cognitive-behavioral play therapy is effective in improving the executive functions of dyslexic students compared to the control group. In other words, cognitive-behavioral play therapy has increased and improved the executive functions of dyslexic students; and this increase in function continued until the one-month follow-up stage. This finding is consistent with the research results of Taghizadeh Heer et al. (39) and Pirabbasi and Safarzadeh (40).

In the explanation obtained, it can be said that play is the correct method to treat the child because children often have problems expressing their feelings verbally. Through play, children can lower barriers and express their feelings better. Thus, by playing, children can practice designing, organizing, appropriate and effective behavior change, monitoring, and emotional and behavioral self-regulation (39). According to Vygotsky's opinion, play is one of the cultural tools that is very important in the construction and mental development and is a guiding source for the mental development of children at a young age. Monte also concluded that respecting the child and accepting his abilities and allowing him to play his favorite games can help the child overcome internal obstacles and develop his true abilities such as creativity (40).

In addition to the theoretical framework, the existing empirical background in this field can also be used to explain this finding; Based on the results of Aviv et al.'s research (41), this research finding can be explained in the way that the play was able to increase the level of competence in executive functions by strengthening the self-confidence of the children participating in the play. In general, it can be concluded from this finding that the play can overcome internal obstacles by creating peace for children and giving them autonomy to

regulate their activities based on their abilities and provide mental peace for children. The calmness created along with the discharge of negative emotions, which is one of the important and serious obstacles in revealing the child's potential abilities, can cause the child's energies to be concentrated on performing important psychological and cognitive actions, of which executive functions are also a part. With the help of the high self-confidence created and the ability to interact as a result of the play, the necessary ground for creating the maximum capacity of exploitation of skills such as attention, planning, organization, problem-solving, and creativity is provided for this type of child.

Play is a means of expression and communication, and according to some researchers, it is an important part of every therapeutic process. In the play, a person repeats unpleasant experiences many times and, in this way, actively masters them. The play allows the child to face emotional needs, doubts, and doubts and provides him with the opportunity to find ways to adapt to new conditions. Play therapy is one of the effective methods of treating people's behavioral and psychological problems. Play strengthens social development. The experience of play therapy is a therapeutic cause that creates a safe relationship between the individual and others, in such a way that the individual has the freedom and possibility to express himself in his way, that is, completely as he is, in his special way and in his own time finds (11, 13). Based on Loik and Scanlon's research (14), it can be said that the play and the successes resulting from it can add an element of internal motivation to the learning situation, and this can improve focus and interest in assignments and, as a result, improve and increase ability in executive functions play a significant role.

Limitations of the Research: considering that one of the limitations of this research was that it was implemented on dyslexic students, it is suggested that this research be implemented on other learning disorders as well.

Application of Research: In order to investigate the effectiveness of this approach more accurately, it is suggested to use designs with control and random replacement in future research and to consider subgroups of patients. The effectiveness of this approach should be compared with other approaches. A longer follow-up period should be considered, and the effectiveness of this approach should be studied in different diseases.

Ethical Considerations: This research is taken from the doctoral dissertation and has been approved by the ethics committee of the Islamic Azad University - Karaj branch with the code of ethics IR.IAU.K.REC.1399.071. Ethical standards include obtaining written consent from the parents of the students participating in the research, respecting the principle of the authority of the participants and their parents to participate in the research, preserving the privacy of the participants, and publishing the results honestly.

Conflict of Interest: There is no conflict of interest in this research and the contribution of the authors is mentioned in the order of their names in the article.

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