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The Effects of Creative Drama-Based Sensory Integration Training Program on Preschool Children's Self-Regulating Skills and Visual Perceptions

Research Article

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ABSTRACT

Art continues to be an important part of the educational process from past to present, facilitating students to acquire new skills such as problem-solving and social cohesion. Creative drama, which has a relationship with all branches of art and the play and theater is evaluated with a new perspective, has been reported to be effective in different age groups and different academic areas and has become an important part of the educational system since it addresses many senses. Sensory integration is defined by processing and using the information coming from our senses by our brain in a purposeful way. It provides the proper development of the basic to the complex skills including daily living skills, and the skills necessary for academic learning including reading, writing and arithmetic skills. For this reason, it is very important that learning environments support students' ability to integrate their senses. In the light of these data, the aim of this study was to investigate the differences in visual perception and self-regulation skills of preschool children with creative drama sessions consisting of sensory integration activities. In this study, pre-test-posttest, quasi-experimental design with experimental and control group was used. Within the scope of the research, creative drama workshops consisting of sensory integration activities were carried out for 10 sessions. The participants consisted of 34 five-year-old students in the 2018-2019 academic year. Self-regulation observation form, frostig visual perception test were used in the study. In addition, semi-structured interview forms for children, families and teachers were used to determine the social validity of the study. Data obtained from pre-test, post-test and monitoring sessions were transferred to SPSS 23.0 package program, and there was a significant difference between the experimental and control groups.

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Keywords:

Sensory Integration, Creative Drama, Visual Perception, Self-Regulation Observation

Introduction

Part of this study was presented as an oral presentation at the 1st International Symposium on Science, Education, Art and Technology.

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It is a fact that art holds an important place in all stages of human history, is an important part of our cultural heritage and maintains this effectiveness even today. Also in the last 30 years it continues to be an important part of the process and makes it easier for students to acquire new skills such as problem solving and social cohesion (Bautista, Moreno Nunez, Bull, Amsah and Koh, 2018; Gadsden, 2008). The fact that art is a part of education is directly related to the change in the perspective of learning and teaching. Since the 1970s, the behavioral approach has been replaced by a cognitive approach. With this change, the educational process is no longer aimed at transmitting information directly to the passive listener; it takes into account the individual and social development of the active learner and aims to internalize information with the help of different teaching materials. For this purpose, new tools or methods have been developed and continue to be developed (Çelik and Buluç, 2018; Duman, 2013; Yıldız 2004).

One of the developed methods is the creative drama which has relations with all branches of art, especially the theater, which is reported to be effective in different age groups and in different academic fields and has become an important part of the education system today (Adıgüzel, 2006; Annarella, 1992; İlhan, 2007; Mages, 2008; Pinciotti, 1993; Scott, 2003; Ulutas, 2011). Creative drama generally, is the evaluation of play and theater from a new perspective (Sağlam, 2003). According to the definition of San (2006), creative drama; using drama techniques such as improvisation and role-play, in a group work, individuals experiences an event, an idea, sometimes an abstract concept or behavior, through the rearrangement of old cognitive patterns and observation, experience, emotions and experiences are reviewed meaningful or playful in playful processes.

Creative drama has a multifaceted functionality in the education of preschool children with its features in the definition. Creative drama facilitates children's learning and the application of the skills acquired in the classroom to the outside world (Adıgüzel, 2006; Peter, 2003), improving receptive language and expressive language skills (Akdenizli & Yıldız Demirtaş, 2018; Stinson & Winston, 2011), empathy and social skills (Annarella, 1992; Yassa, 1999), contributes to gain cognitive, affective and problem-solving skills (Bautista, Moreno Nunez, Bull, Amsah and Koh, 2018).

It is related to the characteristics of creative drama as being an effective education method in early childhood, including play and animation, appealing to many senses at the same time and embodying the skill to be taught. Play and animation, which are also the elements of creative drama in early childhood, are the spontaneous empirical way of learning. In this period, children can create a new environment for themselves with the freedom of play, put themselves in the place of someone else, and thus have a better understanding of their own feelings, the feelings of others, and empathize better. They can also contribute to their mental, emotional, social and physical development through representations created through play and imitation (Mages, 2008; Peter, 2003; Sağlam, 2003; Ulutaş, 2011; Ummanel, 2017). With this functional aspect, play and its components have become an important part of education systems in early childhood. The inclusion of the play in the education systems and making it structured within the curriculum has been possible with creative drama (Koçyiğit & Baydilek, 2015; Peter, 2003; Sağlam, 2003).

One of the reasons why creative drama is an effective method in early childhood is that it appeals to many senses. In the drama process, the participants are both listening, watching, touching using body language, sometimes pretending or in real smelling and tasting (Öztürk, 2001; Baldwin and Fleming, 2003). When working with children in early childhood, the use of concrete objects that address multiple senses is more effective than verbal expressions and facilitates concretization and learning (Peter, 2003). However, it is emphasized that more materials based on vision are used in educational programs since the effect of visual perception on learning is higher than other senses. (Heinich, Molendo and Russell, 1993; Lightning, 2002; Lean, 2007). The process of perceiving and processing the visual information coming from sensory and mental processes that are tried to be activated by these materials is called visual perception (Gal and Linchevski, 2010). The reason why visual perception is important in learning is that it is directly related to many school period

skills such as reading-writing, visual motor coordination, and solving math problems. (Brown, Rodger and Davis, 2003; Brown, Rodger and Davis, 2008; Yu, 2012).

Senses begin to develop in the womb and accompany us throughout our lives (Clark-Gambelunghe and Clark, 2015). In addition, the senses are related to many areas in the lives of children and adults. After the loss of any sense, individuals' life satisfaction decreases (Brown, Bown and Sharma, 2018); a structural change occurs in their brain (Merabet and Pascual-Leone, 2010); poor communication skills and adaptation problems (Heine and Browning, 2002); psycho-social problems emerge (Brennan and Bally, 2007) and daily life skills (Brennan, Horowitz and Su, 2005), and depression levels (McDonnall, 2009) are reported to be negatively affected by intellectual accumulation and intellectual abilities (Baltes and Lindenberger, 1997).

The senses which are related to the education process, daily life and many other factors, are being organized by our brains and used for a purpose is defined as sensory integration (Ayres & Robbins, 2005). Sensory integration is the control of senses such as balance-motor, gravity and motion (vestibular), muscle-joint, posture (proprioceptive), as well as the senses of vision, hearing, tasting, smelling and touch, and organizing the adaptive response by organizing information coming from each of them (Smith-Roley, Blanche and Schaaf, 2001). Self-regulation skill is the systematic use of cognitive or metacognitive strategies by individuals who set their goals, assessing their own abilities and taking responsibility for individual learning (Ramdass & Zimmerman, 2011). This skill is an essential element of a meaningful interaction of development and maturation throughout the life (Bronson, 2000). At the same time, self-regulation, which is accepted as a key to lifelong learning, plays an important role in the learning processes of individuals on behavioral, cognitive and motivational basis (Yıldız Demirtaş 2013; Ramdass and Zimmerman, 2011). It is stated that individuals who learn by self-regulation regulate their behaviors and thoughts in three stages. These are: (1) Thinking ahead (effort comes before the action) (2) Performance control (occurs during the learning process) (3) Self-assessment (takes place after learning). These three stages occur cyclically and affect each other. In particular, the pre-thinking process influences individuals' motivation, self-regulation, self-judgment and self-response, which are the three important dimensions of self-regulation (Yıldız Demirtaş 2013; Cleary and Zimmerman, 2004).

Self-regulation skills begin to develop, especially at a young age. According to the model developed by Kopp in 1982, as children grow older, they begin to internalize external behaviors in response to parental socialization and maturation of attention (Calkins, Smith, Gill, & Johnson, 1998; Kochanska, Coy & Murray, 2001; Rothbart & Bates, 1998). At the age of 12-18 months, children begin to exhibit control skills that include awareness of social demands and demonstrate the ability to adapt to parental demands. On the other hand, children have the ability to postpone their demands and regulate their behavior without any external guidance. It is easier to observe these skills because children exhibit their self-control behaviors when they are 30 months old (Karreman, et al., 2006; Kochanska, Coy and Murray, 2001; Kopp, 1982). When children reach two or three years of age, children begin to gain control over their thoughts, emotions and actions (Mischel, 2016). When children reach the age of three, they often begin to make conscious choices, manage their attention more flexibly, and prevent impulses that distract them from their goals (Mischel, 2016). While self-regulation skills develop quite rapidly from early childhood (4-5 years) to middle childhood (8-9 years), from mid childhood to early adolescence (12-13 years) this development is not so fast because a child who reached 7-8 years old, his/her attention control skills and underlying nervous structure are very similar to adults. There are also many studies on how self-regulation skills can be gained from pre-school to more advanced education at school. In particular, teaching how to learn (learning to use learning strategies) plays an important role in this process. (Dignath, Buettner, and Langfeldt, 2008; Bodrova and Leong, 2008; Raffaelli, Crockett and Shen, 2005; Schunk, 2005; Zimmerman, 2002

Compliance with the demands of parents and social rules (Karreman, Tuijl, Aken, ve Deković, 2006) organizing arousal and irritable behavior, (Rothbart & Derryberry, 1981) and organizing the senses coming from outside to demonstrate appropriate behavior (Ayres ve Robinson, 2005) are related with self-regulation skills. Self-regulating behavior, for example, when a baby sucking his thumb to calm himself, and a child can wait for a toy he wants. Such self-regulating behavior can stimulate the person's internal order and the resources necessary to facilitate control of the underlying arousal processes (Smith Roley, Blanche and Schaaf, 2001). These self-regulation skills cover a wide range of neural domains and systems, and involve both stimulus and inhibitory mechanism interaction. Stimulating, in other words, facilitating mechanisms provide the flow of sensation, that is, information in the nervous system, for example, continuing to perform an activity, and inhibitory mechanisms serve to prevent unrelated information from the nervous system (Porges, 1996).

The relationship between self-regulation skills and sensory integration Dunn (1997) revealed that the data obtained from 1000 normal developmental children with developmental delay. According to Dunn (2007), when people search for a sensory stimuli, they are running from one experience to another in daily life; if they avoid the senses, they moves away from situations that disturb their senses quite quickly. In other words, if a person has a sensory sensitivity pattern, he reacts to situations. For example, the child who is disturbed by the sound closes his ears or tells others to be quiet. If a person has a low registration sensory processing pattern, he has difficulty in recognizing what other people have already noticed because their neurological thresholds are too high, they miss some things and do nothing for additional information. Such children can be emotionally neutral, unresponsive.

There are researches emphasise that, self-regulation skills (Weiland and Yoshikawa, 2013; Dignath, Buettner and Langfeldt, 2008; Zimmerman, 2002) and visual perception skills (Kaya and Star, 2019; Önder, Balaban-Dağal, İlçi-Küsmüş, Bilici, Özdemir and Kaya-Değer, 2019; Kılıçgün and Kılıçkaya, 2018) are the skills can be developed through pre-school education programs. Considering that the development of self-regulation and visual perception skills in the preschool period also predicts future academic success, the aim of the research is to reveal the effectiveness of the sensory integration education program created with creative drama on the self-regulation and visual perception levels of children attending preschool education. The following questions were sought in the research

1. Does the sensory integration education program created by creative drama show a significant difference on the students' self-regulation skills?
2. Does the sensory integration education program created with creative drama have an impact on the visual perceptions of the students?
3. What are the views of the teacher participating in and observing sensory integration training activities created with creative drama?
4. What are the opinions of the students who participated in sensory integration education studies created with creative drama?
5. What are the views of the parents of the students who participated in sensory integration training activities created with creative drama?

Method

Pre-test, post-test, experiment and control group quasi-experimental design was used in the study. The dependent variable of the research is the development of self-regulation skills and visual perception levels of the students, and the independent variable is the sensory integration education program based on creative drama prepared by the researchers. The general purpose of experimental designs is to explain the cause-effect relationship between variables. (Büyüköztürk, 2007).

Before the research, self-regulation skills observation form, frostig visual perception test and personal information form created by the researchers were applied to the children in the experimental and control groups. Then, a creative drama-based sensory integration training sessions were conducted for the experimental group. No study was performed with the control group. After the completion of creative drama sessions, self-regulation observation form and frostig visual perception tests were re-applied to the children in the experimental and control groups. In addition, semi-structured interviews were conducted with the children in the experimental group, their families and teachers. 4 weeks after the completion of the experimental process, a “monitoring” session was held by the researchers. In this monitoring session, all children in the experimental group were re-administered the self-regulation skills observation form and frostig visual perception test. All applications are tabulated and presented.

Table 1. Work program of application

Participants

Group Name	Pre-Experiment	Test Process	Post-Experiment	Follow-Up
Experiment	Self-Regulation Skill Observation Form Frostig Visual Perception Test	Creative drama sessions created with sensory integration	Self-Regulation Skill Observation Form, Frostig Visual Perception Test, Teacher, Student, Parent Interview Forms	Self-Regulation Skill Observation Form, Frostig Visual Perception Test
Control	Self-Regulation Skill Observation Form, Frostig Visual Perception Test	No application. was made.	Self-regulation Skill Observation Form, Frostig Visual Perception Test	Self-Regulation Skill Observation Form Frostig Visual Perception Test

The participants of the study consisted of 34 students attending a formal kindergarten in Manisa. The sample of the study was formed by purposeful sampling. In the selection of the school, the criteria of the volunteers of the administrators, teachers, and parents of the children, the presence of the classes in the experimental and control groups are below 20, and the physical conditions of the classes allow the sessions to be held in a healthy way. The mean age of the children was 5.32 (n = 17) for the experimental group and 5.38 (n = 17) for the control group.

Data Collection Tools

In this study, self-regulation observation form was used to determine the effect of creative drama-created sensory integration education program on children's self-regulation skills; frostig visual perception test was used to determine the effect on visual perception levels. In addition, semi-structured interview forms for children, families, and teachers were used to determine the social validity of the study. Social validity is used to improve the social acceptability and to determine the sustainability of the program intended or developed (Schwartz ve Baer, 1991). With these forms, questions were posed to enable the children themselves, their teachers and their families evaluate the subjective.

a) Self-regulation Skills Observation Form: This form was developed by Yıldız Demirtaş (2013) in order to reveal the self-regulation skills used by preschool children. The form is a 5-point Likert-type scale filled out by the preschool teachers. This scale consists of Cognitive Learning Strategies, Study Management-Attention and Effort Control, Assistance and Control, and Environmental Structuring. The Cronbach Alpha reliability coefficient for the total self-regulation skills observation form was found to be .97. Factor loads, eigenvalues and reliability coefficient results of the form are given in Table 2.

Table 2. Factor loads, eigen value and reliability coefficients of self-regulation skills observation form

Dimensions	Number of Items	Factor Loads	Eigen Value	Cronbach Alpha Number of Folds
Cognitive Learning Strategies	25	.406 - .815	25.5	.96
Study Management-Attention	19	.455 - .731	3.1	.95
Environmental Structuring	4	.472 - .754	2.4	.85
Assistance and Control	7	.504 - .767	1.9	.83

b) Frostig Developmental Visual Perception Test:

First developed by Frostig (1963), this test aims to determine the visual perception levels of children. This test aims to measure children's five visual perception skills: hand-eye coordination, shape-ground separation, perception of shape stability, perception of space and location relationship and finally perception of spatial relations. The test can be applied to groups as well as individual use. Although there is no time limit, it takes approximately 45 minutes. Although the original form of the test was developed for children between the ages of 3-8 calendar years, the first validity and reliability study in our country (Sökmen, 1994) was conducted with children aged 5 calendar years. Aral and Bütün Ayhan (2016) conducted a validity and reliability study with 1384 children between the ages of 4-7 calendar years. As a result of the validity and reliability study, confirmatory factor analysis of the sub-dimensions of the scale revealed that the scale was one-dimensional.

c) Semi-Structured Interview Form for Children:

This form, which consists of 5 questions, was prepared by a researcher consisting of an associate professor working in the field of child development, a psychological counselor, a specialist in special education, a psychologist and special education teacher. The age of the children's calendar was taken into consideration while creating questions. With this form, it is aimed that children express their feelings and thoughts about the education program and the effect of the education program on them.

d) Semi-Structured Interview Form for Teachers:

This form, which consists of nine questions, was prepared by researchers consisting of associate professors in the field of child development, psychological counselor, psychologist and special education teacher who are experts in the field of special education. Through the form, it is aimed to get the opinions of the teachers' observations and statements regarding the possible impact of the education program for children.

e) Semi-Structured Interview Form for Families:

This form, which consists of five questions, was prepared by researchers consisting of associate professors in child development, psychological counselor, psychologist and special education teacher who are experts in the field of special education. Through the form, it is aimed to obtain in-house observations and opinions from parents about the possible impact of the education program for their children.

Training Program Development Process

At the beginning of the development of the training program, the literature on sensory integration, self-regulation, visual-perception issues was screened. Following this literature review, the main objectives and

gains were determined. In order to determine the appropriateness of the determined aims and achievements for preschool children, a child development specialist working in the field of preschool, a psychologist working in the field of sensory integration and a program development specialist was consulted. Within the framework of the feedback from these people, the objectives and achievements were finalized and the content of the program was determined. In accordance with this content, creative drama sessions of 10 sessions were created. Then, the measurement tools that will be used to measure the effectiveness of this training program were determined. Creative drama sessions are presented in Table 3.

Table 3. Creative drama sessions

Session 1	Let's meet each other and our senses.
Session 2	I feel my environment and myself.
Session 3	I absorb my senses.
Session 4	I realize my dreams.
Session 5	Directing my attention.
Session 6	I Draw Balanced.
Session 7	I trust my feelings.
Session 8	I'm creating Patterns.
Session 9	Turning On A Round Table.
Session 10	I feel with gloves.

Implementation Process of the Training Program

All drama sessions and all experimental procedures were conducted by a leader in special education teacher specialized in the field of special education and a co-leader of specialist psychological counselor in the field of special education. Both leading researchers completed the five-stage 208-hour creative drama leadership training certificate program, and also took the "Creative Drama in Special Education "course. The experimental transactions were conducted twice a week between November 2018 and December 2018.

Sessions lasted 45-50 minutes on average. The working environment was checked before the sessions and necessary arrangements were made. The operations performed during the study were as follows.

1. Development of sensory integration training program created with creative drama.
2. Preparation of data collection tools.
3. Determining the school where the study will be conducted and the children to whom the study will be conducted.
4. Application of the Ethics Committee,
5. Application of data collection tools to experimental and control groups.
6. Analyzing the collected data.
7. Application of creative drama education to the experimental group.
8. Reapplication of data collection tools to experimental and control groups.
9. Interviews with children, their families, and teachers.
10. Analyzing the collected data.
11. Carry out the monitoring session and re-implement the data collection tools.
12. Re-analysis of the collected data.

Data Analysis

The data obtained from the pre-test, post-test and monitoring sessions were transferred to SPSS 23.0 package program. Firstly, kurtosis values were analyzed and then was-Smirnov Test ($p = .146 > .05$) concluded that the data were distributed normally. Then, t-test was performed for the independent groups to determine

whether there was a significant difference between the pre-test results of the experimental and control groups. Then, t-test was performed for paired groups t-Test to test whether there was a difference between the pre-test and post-test results. The interviews conducted after the final tests were analyzed by the induction data analysis technique. The obtained data were converted into themes and the frequency and percentages were calculated according to the categories and the contents were examined. Consensus / (Consensus + Disagreement) X 100 formula proposed by Miles and Huberman (1994) was applied to ensure the reliability of the persons performing the analysis. The agreement rate between the coders was .91. One month after all these procedures, the monitoring session was examined by analysis of variance.

Findings

1. Findings from the self-regulation skills observation form

In this section, the scores obtained by the experimental and control groups from the self-regulation skills observation form are demonstrated.

Table 4. Self-regulation skills of the participants observation form pre-test results

	Group	n	Mean	Sd	t	p
Self-Regulation Total Score	Experiment	17	207.65	33.02	3.051	.177
	Control	17	224.25	30.24		
Cognitive Learning Strategies	Experiment	17	93.35	17.38	2.184	.135
	Control	17	100.25	15.32		
Study Management-Attention	Experiment	17	74.94	9.97	.705	.491
	Control	17	77.47	10.33		
Assistance and Control	Experiment	17	28.88	4.88	-.610	.841
	Control	17	27.94	4.34		
Environmental Structuring	Experiment	17	10.47	4.62	-.281	.275
	Control	17	10.78	5.01		

According to Table 4, there is no significant difference between the total scores of the self-regulation skills observation form of the children in the experimental and control groups. Similarly, it was observed that there was no difference between the experimental and control group scores in the sub-dimensions of the scale.

Table 5. Participants' self-regulation skills observation form post-test results

	Group	n	Mean	Sd	t	p
Self-Regulation Total Score	Experiment	17	248.05	29.33	2.550	.021
	Control	17	226.59	29.72		
Cognitive Learning Strategies	Experiment	17	114.82	14.46	2.351	.032
	Control	17	105.36	13.47		
Study Management-Attention	Experiment	17	83.71	9.98	3.274	.005
	Control	17	76.35	10.43		
Assistance and Control	Experiment	17	32.17	5.37	3.759	.002
	Control	17	28.24	4.27		
Environmental Structuring	Experiment	17	17.35	2.17	2.378	.030
	Control	17	14.76	4.47		

There was a significant difference between the total scores of the children in the experimental and control groups obtained from the düzenleme Self-regulation Skills Observation Form sonr (t = 2.550, p <.05). When the scores obtained from the subscales of the form were examined, "Environmental Structuring" (t = 2,378, p <.05); "Cognitive Learning Strategies" (t = 2.351, p <.05), "Study Management-Attention (t = 3.759, p

<.05) and Alma Getting and Controlling Help” (t = 3.759, p <.05) It was concluded that there was a significant difference between the scores obtained from the dimension in favor of the experimental group.

Table 6. “T-test” results of the participants' scores obtained from the self-regulation skills observation form subscales and overall total before and after the training program

Group		n	Mean	Sd	t	p	
Self-Regulation Total Score	Experiment	Pre-test	17	207.65	33.02	-5.889	.000
		Post-test	17	248.05	29.33		
	Control	Pre-test	17	224.25	30.24	-8.076	.198
		Post-test	17	227.70	29.72		
Cognitive Learning Strategies	Experiment	Pre-test	17	93.35	17.38	-5.182	.000
		Post-test	17	114.82	14.46		
	Control	Pre-test	17	105.17	13.32	-.261	.798
		Post-test	17	105.36	13.47		
Study Management-Attention	Experiment	Pre-test	17	74.94	9.97	-4.188	.024
		Post-test	17	83.71	9.98		
	Control	Pre-test	17	77.47	10.33	.917	.373
		Post-test	17	78.55	10.43		
Assistance and Control	Experiment	Pre-test	17	28.88	4.89	-3.182	.073
		Post-test	17	32.17	5.37		
	Control	Pre-test	17	27.94	4.34	-1.768	.126
		Post-test	17	28.24	4.27		
Environmental Structuring	Experiment	Pre-test	17	10.47	5.26	-5.285	.000
		Post-test	17	17.35	2.17		
	Control	Pre-test	17	13.64	4.62	-1.120	.342
		Post-test	17	14.76	4.47		

There was a significant difference between the total scores of the children in the experimental group before and after the application from the düzenleme Self-regulation Skills Observation Form ((t = -5.889, p <.05). When the pre-test and post-test scores of the children in the experimental group were taken from the subscales of the form, “Cognitive Learning Strategies” (t = -5.182, p <.05), “Environmental Structuring” (5.825, p <.05), “Study Management-Attention” (t = -4.188, p <.05), “Assistance and Control” (t = -1.768, p >.05).

There was no significant difference between the total scores of the children in the control group before and after the application from the düzenleme Self-regulation Skills Observation Form ((t = -8.076, p >.05). When the scores obtained from the subscales of the form were examined, “Environmental Structuring” (t = -1.120, p >.05); “Cognitive Learning Strategies” (t = -.261 p >.05), “Study Management-Attention (t = .917, p >.05) and “Assistance and Control” (t = -1.768, p >.05) subscale scores.

Table 7. The results of one-way analysis of variance of the scores obtained from the self-regulation skills observation form subscales and the overall total in the following session before, after and after the training program of the experimental group

		Group	n	Mean	Sd	F	p	Sig. Difference
Self-Regulation Total Score	Experiment	Pre-test	17	207.65	33.02	3.051	.000	1-2 / 1-3
		Post-test	17	248.05	29.33			
		Following	17	247.05	29.25			
Cognitive Learning Strategies	Experiment	Pre-test	17	93.35	17.38	26.175	.000	1-2 / 1-3
		Post-test	17	114.82	14.46			
		Following	17	114.47	14.35			
Study Management-Attention	Experiment	Pre-test	17	74.94	9.97	8.450	.003	1-2 / 1-3
		Post-test	17	83.71	9.98			
		Following	17	83.70	7.98			
Assistance and Control	Experiment	Pre-test	17	28.88	4.89	5.583	.013	1-2 / 1-3
		Post-test	17	32.17	5.37			
		Following	17	32.41	5.32			
Environmental Structuring	Experiment	Pre-test	17	10.47	5.26	16.444	.000	1-2 / 1-3
		Post-test	17	17.35	2.17			
		Following	17	17.36	2.10			

There was a significant difference between the total scores of the children in the experimental group before and after the application and in the follow-up sessions from Self-regulation Skills Observation Form (($F = -3.051$, $p < .05$). When the pre-test and post-test scores of the children in the experimental group from the subscales of the form were examined, it was concluded that there was a significant difference between the scores obtained from the sub-dimensions such as: "Cognitive Learning Strategies" ($F = 26.175$, $p < .05$), "Environmental Structuring" ($F = -16.444$, $p < .05$). , "Study management and Attention" ($F = -8.450$, $p < .05$), "Assistance and Control" ($F = 5.583$, $p > .05$) subscales. When the source of the differences was examined by pairwise comparison, it was concluded that the pre-test results differed according to the post-test and follow-up test results and there was no difference between the post-test and follow-up test scores.

2) Findings from Frostig visual-perception test

In this section, the scores of the experimental and control groups obtained from frostig visual perception test are demonstrated.

Table 8. "T-test" results of the scores obtained from the frostig visual perception test on pre-test

		Group	n	Mean	Sd	t	p
Frostig Visual Perception Test	Experiment		17	40.82	4.94	.308	.762
	Control		17	41.41	6.19		

According to Table 8, it was concluded that there was no significant difference between the total scores of the pre-education frostig visual perception test of the children in the experimental and control groups ($t = .308$, $p > .05$).

Table 9. "T-test results of the scores obtained from the frostig visual perception test on post-test

	Group	n	Mean	Sd	t	p
Frostig Visual Perception Test	Experiement	17	49.24	5.86	4.519	.000
	Control	17	42.47	6.34		

According to Table 9, it was concluded that there was a significant difference between the total scores of frostig visual perception test after the education program of the children in the experimental and control groups ($t = 4.519, p < .05$).

Table 10.T-test results of the scores obtained by the frostig visual perception test in the pre-test and post-test of the participants

	Group		n	Mean	Sd	t	P
Frostig Visual Perception Test	Experiement	Pre-test	17	40.82	4.94	9.116	.000
		Post-test	17	49.24	5.86		
	Control	Pre-test	17	41.41	6.19	.044	.965
		Post-test	17	42.47	6.34		

According to Table 10, there was a significant difference between the total scores of the children in the experimental group before and after the application from the st Frostig Visual Perception Test ($t = 9.116, p < .05$). It was concluded that there was no significant difference between the total scores of the children in the control group before and after the "Frostig Visual Perception Test" ($t = .044, p > .05$).

Table 11. T-test results of the participants' frostig visual perception test" scores before, after and folowing the training program.

	Group		n	Mean	Sd	F	p	Sig. Difference
Frostig Visual Perception Test	Experiement	Pre-test	17	40.82	4.94	38962	.000	1-2 / 1-3
		Post-test	17	49.24	5.86			
		Following	17	49.15	6.40			

According to Table 11, there was a significant difference between the total scores obtained from the Frostig Visual Perception Test before and after the application of the children in the experiment group. ($F = 9.116, p < .05$). When the source of the differences was examined by paired comparison, it was concluded that the pre-test results differed according to the post-test and follow-up test results, and there was no difference between the post-test and follow-up test scores.

3. Findings Obtained from the Observations and Opinions of the Teacher About the Training Program

After the interview with the teacher through the semi-structured form, the data obtained were examined by the researchers. The opinions and observations were positive. Following these examinations, teachers' views and observations were categorized under the title of "Observed Positive Changes in Children".

Table 12. Analysis of data obtained from the interview with the teacher

	f
Observed Positive Changes in Children	
Increased visual perception skills	2
Increase in attention span	2
Increased compliance in coordinated studies	2
Increase your abstract thinking skills	1
Strengthening friendship relations	1
Increase in compliance with teacher guidelines	1
Increase in self-regulation skills	1

According to the teacher, children's visual perception skills, attention span and coordinated studies compliance increased. It was easier for them to focus their attention during the event. Positive developments are observed in coordinated studies in the courses. When I draw, I see that they think more intangible. In the questions I asked in the classroom, it was observed that this situation was observed, while "Increased compliance in teacher directives" They are more compliant in coordinated studies. And now it's better to follow my instructions. This makes me happy.. For the "strengthening of friendship relations" "Thanks to the training program, the friendship relations of the students were better. There was an increase in self-regulation skills such as setting goals and using strategies için. These skills will contribute to better adaptation of students to primary school.

4. Findings From the Opinions of Children in Experimental Group on Training Program

After the interview with the children in the experimental group through the semi-structured interview form, the data obtained were converted into themes by the researchers and the frequencies and percentages were calculated. Since some children give opinions on more than one theme, the frequency is higher than the number of children.

Table 13. Analysis of the data obtained from the interview with children in the experiment group

	f	%
Contribution of the Training Program		
Contribution to good drawing	8	47
Good animation ability	5	29
To be able to use the scissors more functional	3	18
More like school	2	12
Enjoying time with friends	2	12
Increased participation in classroom activities	2	12
Favorite studies in the training program		
I'll tell you draw your picture	8	47
Direct the ball by blowing	7	41
What are the snowmen doing?	6	35
Know by touch	5	29
Draw without sight	3	18
Balance work	2	12

As shown in Table 13, shared children's thoughts on Contribution of the Training Program in the first place. In this category, there are contributions to good drawing, good animation, using scissors more functionally, loving school more, spending pleasant time with friends, and increasing participation in classroom activities. The children who gave their opinions on this subject used expressions such as "I can draw better now", ne How beautiful I cut with scissors ", orum I can animate the snowman very well", "I learned to paint with my eyes closed".

The children shared their views on their favorite works in the second place. In this category, let me tell you, draw the picture, blow the ball, give direction to the ball, know what the snowmen are doing, touch it, draw the picture without seeing, balance work is located. Children have used such expressions.

"It was funny to draw a picture for my friend ", I drove like a car blowing the ball, it was beautiful", I knew the fruit without seeing ", We became a snowman with my friends, it was" It was very nice to draw a picture without seeing it. We did it at home with my mother ".

5. Data Obtained from Interviews with Parents of Children

Parents of the children were interviewed through the semi-structured interview form and the data were converted into themes by the researchers and the content and frequency and percentages were calculated. Since some participants give opinions on more than one theme, the number of frequencies is higher than the number of participants (n = 17).

Table 14. Analysis of the data obtained from the interview with the parents of the children

	f	%
Contribution of the Training Program		
Development of academic skills	9	53
Positive change in school perception	5	29
Development in social relations	4	24
Using materials for their intended purpose	2	12
Hear more praise from the teacher	2	12
Sharing of children in the house about the training program		
Enjoying the activity	8	47
Doing the same activities at home	8	47
A different teacher experience	5	29

Parents shared their views on the contribution of the education program to their children. In this category, the development of academic skills, positive change in perception towards the school, positive development in social relations, using materials for the purpose, hear more praise from the teacher. *"My child is doing his homework better now," said parents. "Education days want to go to school more" "He had a better relationship with friends. His teacher says so. " "He did some activity in class with some friends. He tells us at home". " Im I bought him crayons. Now he uses more ". "His teacher sometimes complained. Now they complain less ".*

In the second place, the parents expressed their opinions about the sharing of their children about the education program at homes'. This category includes enjoying activities, wanting to do the same activities at home, and a different teacher experience.

Parents say that *"when my child comes from school, he tells about his activity and the pleasure he gets. He made us draw snowmen. He was upset when he couldn't do the same. We learned how to do it from your teacher, we did it at home", interesting It was interesting for them to learn from another teacher. He tells us about the different characteristics of the teacher from his teacher at home. "*

Discussion and Conclusion

When the findings obtained in this study were examined, it was concluded that the sensory integration education program created with creative drama had a positive effect on the visual perception levels and self-regulation skills of the children in the experimental group. When the sub-scales of the self-regulation skills observation form were examined, it was concluded that sensory integration training created with creative drama had a positive effect on Cognitive Learning Strategies, Environmental Structuring, Study Management-

Attention, Assistance and Control subscales. When the data obtained from the interviews with preschool teachers, children and parents of children were examined, opinions were taken to prove this effectiveness.

The first finding of the study is the effect of creative drama-generated sensory integration skills training on self-regulation skills of preschool children. Self-regulation skills have a process that begins to be visible in early childhood and develops rapidly until middle childhood and then pauses. Considering that the development of self-regulation skills predicts future academic success, it is important to develop educational programs to develop these skills in early childhood (Bronson, 2000; Çiltaş, 2011; McClelland & Cameron, 2012). In the literature, it is reported that there are self-regulation education programs for early childhood and these programs affect the self-regulation skills of children in early childhood (Barnett, Jung, Yarosz, Thomas, Hornbeck, Stechuk and Burns, 2008; Elias and Berk) Roberts, King-Thomas and Boccia, 2007; Ursache, Blair and Raver, 2012; Weiland, C. and Yoshikawa, 2013). As a result of this research, in parallel with the findings of the literature, it was obtained that the self-regulation skills can be developed with the training program.

The second finding of the study is the effect of sensory integration skill education on visual perception levels of preschool children. Although there are different opinions that visual perception skills are acquired before and after birth (Arterberry, 2008), there are studies suggesting that visual perception levels can be improved with education in pre-school period (Braddick and Atkinson, 2011; Ercan & Aral, 2011; Kaya and Yıldız, 2019; Tepeli, 2013). The findings of these researches indicate that the level of visual perception can be improved.

It can be said that the use of creative drama is effective on the self-regulation skills and visual perception of the education program which has been used. Because it is emphasized that dramatic play is a pioneer in developing self-regulation skills in early childhood and drama sessions that are organized in accordance with the development period improve children's self-regulation skills such as establishing relationships, cooperating, participating in an activity, developing strategies, and getting assistance. (Elias and Berk, 2012; Wright, Diener and Kemp, 2013). Similarly, it is emphasized that creative drama is important for the development of visual perception, and that visual experiences in creative drama sessions improve visual perception and preschool academic skills (Hanshumaker, 1980; Gelfer and Perkins, 1992).

Wright, Diener and Kemp (2013) emphasized the importance of belonging to a group in their studies emphasizing the effect of creative drama sessions on self-organizing skills improving their editing skills. In this study, it was observed that children play a motivating and supportive role on each other, they get help from each other when necessary, and a similar observation was expressed by the preschool teachers who participated in the practices. In addition, during the interview with the preschool teacher, it was learned that the children wanted to do the activities in the sessions or similar activities after the session and that the increase in self-regulation skills could be observed in these activities in the classroom.

It may also have played a role in addressing all the senses in the effectiveness of the training program on self-regulation skills and visual perception levels. It is reported that studies addressing multiple senses facilitate learning (Kaya, 2005; Seferoğlu, 2006), and addressing multiple senses for preschool children is relatively more effective in terms of concretization and learning (Peter, 2003). It can be said that the use of senses in the education program or studies aimed at integrating senses is not only related to learning but also related to self-regulation. Because the processing or integration of the data received through the senses is related to self-regulation skills. Transferring attention from one place to another, such as the skills required for self-regulation, turning to a sensory stimulus, or locating, self-control in the event of emotional disturbance are related to basic sensory systems (Posner & Rothbart, 2000). In other words, individuals with better self-regulation skills can do better sensory processing (Roberts, King-Thomas and Boccia, 2007; Williamson and Anzalone, 2001). In addition, it is reported in the literature that children who have problems in visual perception experience problems in areas such as listening, attention, body perception, coordination, behavior

planning, daily life skills, and reasoning (Ercan & Aral, 2011). Considering that these skills are related to self-regulation and sensory integration, it can be argued that the increase in self-regulation skills and sensory integration level may lead to an increase in visual perception level and this may be one of the reasons of this finding in the research.

As a result, it can be suggested that pre-school teachers working in the field can gain skills related to the methods, techniques and approaches for pre-school teachers in the in-service education program, starting from the fact that self-regulation and visual perception can be developed or learnable skills. . At the same time, it can be said that research on familial and environmental factors on self-regulation, visual perception and sensory integration may increase the effectiveness of the education programs to be prepared in this direction.

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