

Drama Education on the Creative Thinking Skills of 61-72 Months Old Pre-school Children

Münevver Can Yaşar
Afyon Kocatepe University,
Afyonkarahisar, Turkey

Neriman Aral
Ankara University,
Ankara, Turkey

This study aims to identify six-year-old pre-school children's creative thinking skill levels and to establish whether there is a difference between the creative thinking skills of children who received drama education and those who did not. The population of the study consisted of six-year-old children who were attending pre-school classes of middle socio-economic level primary schools located in capital of Turkey, Ankara. The sample included 80 61-72 months old children, 40 of whom constituted the experimental group, while the remaining forty constituted the control group. In order to identify the effects of drama education on 61-72 months old preschool children's creative thinking skill levels, the pre-test and post-test-retention test experimental design was used. Data concerning the children's creative thinking levels were determined by using the Turkish adaptation of Urban and Jellen's (1996) "TCT-DP" (test for creative thinking-drawing production). The experimental group received a total of 24 education sessions, twice weekly for 12 weeks. Data obtained from the experiment were analyzed by using the Mann-Whitney *U* test, independent samples *t*-test, Wilcoxon signed rank test and paired samples *t*-test. The results revealed a meaningful difference between the creative thinking scores of experimental and control group children.

Keywords: creativity, creative thinking skills, drama, drama education program, TCT-DP (test for creative thinking-drawing production)

Introduction

Creativity is a complex process seen in all emotional and intellectual activities in all areas of study and work (R. Root-Bernstein & M. Root-Bernstein, 2004). According to scientists, creativity is reaching a level of integrity in a unique form which contains aesthetic elements. In other words, creativity is concerned with the product rather than the process and its definition consists of reasoning, inventing and problem-solving (Csikszentmihalyi, 1996; Prentice, Matthews, & Taylor, 2003; Ruggiero, 2004).

Creative thinking is innovative and exploratory thinking and provides new solutions for problems, while enabling novel ideas to emerge (Hançerlioğlu, 2000). It contributes to children's exploration of themselves and the richness of aesthetic expressions in their culture, as well as enables them to explore their environment, create novel things and express their thoughts in various ways (Argun, 2004).

Creativity includes a number of cognitive processes, such as perception, awareness, sensitivity, innovation, flexibility, fluency, intuition, comprehension and invention (Tegano, Moran, & Sawyers, 1991; Russ, 1996;

Münevver Can Yaşar, Ph.D., assistant professor, Faculty of Education, Department of Early Childhood Education, Afyon Kocatepe University.

Neriman Aral, Ph.D., professor, Faculty of Health Sciences, Department of Child Development, Ankara University.

Sternberg & Lubart, 1996; Lubart, 2000-2001; Prentice et al., 2003; Lubart & Guignard, 2004). Although previously acquired knowledge is utilized in the creative process, both previous and new experiences contribute to the creative process (Bonnardel & Marmèche, 2005; Burlinson, 2005; Sternberg, 2005). Although creativity is considered to be an innate ability, researchers have found out that its development requires a sufficient amount of stimuli in an appropriate environment (Hewett, 2005; Yamamoto & Nakakoji, 2005). Suwantra (1994) claimed that creativity training programs are effective in developing creativity among three to six years old children. As children organize information in a creative manner from early ages (Gelman & Gottfried, 2006), creativity can be triggered using various educational methods. One such method is drama. It is a process-oriented form of improvisation in which the leader encourages participants to think about their experiences while responding to a stimulus using their bodies and voices (Waldschmidt, 1996; Guli, 2004). Drama caters to a variety of learning styles, such as social, emotional and active styles, which are based on experiences through action, interaction, examination, exploration and collaboration (O'Neill, 1995; Peacock, 1999; Guli, 2004). The major goal of drama activities which enables children to commute between the real world and fictional world is to raise individuals who are creative, self-sufficient, self-aware and expressive (Peacock, 1999; Freeman, Sullivan, & Fulton, 2003; Aral, Köksal, & Can, 2007). Many studies have concluded that drama fosters children's cognitive, language, psychomotor, social and emotional development, and contributes to the aesthetic skills while nurturing their creativity (Warren, 1993; Brown & Pleydell, 1999; Peacock, 1999; Toye & Prendiville, 2000; Hendy & Toon, 2001; Freeman et al., 2003; Heining, 2003; Kandir, 2003). Earlier research reveals the importance of nurturing creative thinking skills with drama, which is thought to have critical importance in the development of creative thinking skills and establishment of foundations for the following years. This study aims to identify 61-72 months old pre-school children's creative thinking skill levels and establish whether there is a difference between the creative thinking skills of children who received drama education and those who did not.

Method

The Design of the Research

The pre-test and post-test retention test experimental design was used in the study (Büyüköztürk, 2009). In this model, the dependent variable is the creative thinking skills of 61-72 months old pre-school children, while the independent variable is the "drama education program", whose effects on the creative thinking skills of children are investigated.

Participants

The population of the study consisted of 61-72 months old children who were showing normal course of development and attending the preschool programs of primary schools affiliated to the Turkish Ministry of National Education and located in Ankara during the first semester of 2008-2009 academic year. We obtained a list of pre-schools located in Ankara from the Provincial Directorate of National Education. From the list, the authors identified four schools which had at least four classes a day and offered half-day education, while they had never provided any drama education. Eventually, Aydınlikevler Primary School was chosen via random sampling among the schools meeting the specified criteria. The sample, thus, included eighty 61-72 months old children who were attending the half-day pre-school program of Aydınlikevler Primary School and who had not received any drama training previously. Among the children who participated in the study, 40 constituted

the experimental group, and the remaining 40 children constituted the control group. According to the findings about the characteristics of children, 47.5% were females and 52.5% were males. In both groups, the majority of the children were the first and only child, or had one sibling and no previous drama experience at school. The mean ages were 6.4 years for the experimental group and 6.3 years for the control group.

Instruments

Data were gathered by using a "General Information Form", and children's creative thinking levels were estimated using the Turkish adaptation of Urban and Jellen's (1996) "TCT-DP" (test for creative thinking-drawing production).

General information form. The form includes items inquiring children's date of birth, order of birth, number of siblings, status of having previously received early childhood education, educational status of parents and their occupations. These forms were completed by the parents.

The TCT-DP (Urban & Jellen, 1996). The test is a simple, basic and cost-effective tool that investigates individuals' creative potential. The test can be administered to all individuals above five years old and is composed of two forms, namely A and B. The duration for each form is no longer than 15 minutes. Each form is scored and evaluated immediately after the administration by following the evaluation criteria. The examinee completes a drawing on the basis of six given figural fragments, such as a semicircle, one point, a right angle, a curved line, a dashed line, outside a frame and a small open square. "Large square frame" is not considered as a figural fragment.

There are 14 evaluation criteria for the TCT-DP, which include Cn (continuations), Cm (completion), Ne (new elements), Cl (connections made with a line), Cth (connections made to produce a theme), Bfd (boundary breaking that is fragment dependent), Bfi (boundary breaking that is fragment independent), Pe (perspective), Hu (humor and affectivity), Uca (unconventionality a), Ucb (unconventionality b), Ucc (unconventionality c), Ucd (unconventionality d), and Sp (speed) (Urban & Jellen, 1996; Urban, 2004, 2005).

These criteria, together and in interaction with each other, reflect the holistic concept of creative thinking. From a statistical point of view, a score from a single criterion does not provide information about creativity whereas a total score of all the criteria does. With the help of these criteria to evaluate the final drawing product, a total score is obtained for the creative skills of an individual. The result is not considered as a final decision for the individual's technical or artistic qualifications. Rather, it reflects the willingness for the fulfilling of an open and flexible duty in a novel and extra ordinary way (Urban & Jellen, 1996).

A total of 300 pre-school children (149 females and 151 males) were studied during the process of Turkish adaptation of the TCT-DP. As a result of the analysis, it was found that the internal consistency reliability coefficients varied from $\alpha = 0.75$ to $\alpha = 0.77$, while Cronbach's alpha reliability coefficient for the entire test was $\alpha = 0.77$. The test-retest reliability results were found to be 0.98 for A and B forms and 0.99 for the total test (A+B) implying that the test provides reliable time-dependent scores ($p < 0.01$). In the bottom, 27% and above 27% percentiles of the TCT-DP's Form A ($U = 6.5$), Form B ($U = 17$) and total (A+B) ($U = 2.15$) scores revealed a significant difference, thus implying high discrimination power and internal consistency of the evaluation criteria.

The early childhood education curriculum was taken into consideration in preparing the Drama Education Program which aims to improve children's creative thinking skills in the experimental group. Necessary amendments were made to the program according to the views of eight professionals. The Drama Education

Program consists of 24 child-centered drama activities, aiming to foster creativity and support creative thinking skills. Purpose-oriented concrete visual materials were prepared in order to improve creative thinking skills in drama activities. Techniques, such as concentration, inquiry and brainstorming, were planned to increase the amount of participation in the sessions. The Drama Education Program includes activities, such as warm-ups, pantomimes, role plays, improvisations, plays and plays out of stories. For the evaluation phase, open-ended questions and art activities enabling children to freely express their thoughts and emotions were planned.

Procedure

Data collection started in the first semester of 2008-2009 academic year after the consent of Ankara Governorship Provincial Directorate of National Education had been obtained. The TCT-DP was administered each child participant by the researcher. During the administration of pre-tests and before starting the educational program, the researcher and the pre-school teacher spent time with the children in the experimental group and observed some of the activities. The teacher was supported in some activities in order to meet and communicate with the children and become familiar with the educational setting. After the children were given the pre-tests, children in the experimental group received drama education twice weekly (Mondays and Fridays) for 12 weeks. Each session lasted 90-120 minutes on average. The rest of the time was spent on the regular curriculum with the control group. After the completion of the Drama Education Program, the TCT-DP was administered by the researcher on children both groups as a post-test. To assess whether the education was permanent, the TCT-DP was again administered to the children in the experimental group after one month.

Data Analysis

With the purpose of determining whether control and experimental group children’s creative thinking skills differed with the administration of the Drama Education Program, the TCT-DP Form A, Form B and total (A+B) scores were analyzed by using the Shapiro-Wilk Test in order to explore whether they showed normal distribution (Özdamar, 2005; Büyüköztürk, 2009). According to the results, the TCT-DP Form A, Form B and total (A+B) pre-test scores did not display normal distribution, but the post-test scores did. Therefore, Mann-Whitney *U* test, independent samples *t*-test, Wilcoxon signed rank test and paired samples *t*-test were conducted respectively (Büyüköztürk, 2009). The significance level was set at 0.01 and 0.05; that is, $p < 0.01$ or $p < 0.05$ indicated a significant difference, whereas $p > 0.01$ or $p > 0.05$ referred to a non-significant difference.

Results

Table 1
Mann-Whitney U Test Results of the TCT-DP Form A, Form B and Total (A+B) Pre-test Scores for Children in Both Control and Experimental Groups (N=40)

TCT-DP	Group	\bar{X}	Median	Min.	Max.	SD	Order mean	MWU	
								<i>U</i>	<i>p</i>
Form A	Experiment	9.7	8.0	5.0	23.0	4.4	37.0	-1.330	0.181
	Control	11.1	11.0	4.0	29.0	4.9	44.0		
Form B	Experiment	10.2	10.0	4.0	28.0	4.8	43.1	-0.989	0.322
	Control	9.7	8.0	3.0	21.0	5.2	37.9		
Total (A+B)	Experiment	20.0	18.0	9.0	51.0	8.2	39.6	-0.342	0.732
	Control	20.8	18.5	8.0	43.0	8.9	41.4		

According to the Mann-Whitney U test results, Table 1 shows that no significant difference existed between the control and experimental children's the TCT-DP Form A ($U = -1.330, p > 0.05$), Form B ($U = -0.989, p > 0.05$) and total (A+B) ($U = -0.342, p > 0.05$) pre-test mean scores.

Table 2

Independent Samples t-Test Results of the TCT-DP Form A, Form B and Total (A+B) Post-test Scores for Children in Both Control and Experimental Groups (N=40)

TCT-DP	Group	\bar{X}	Median	Min.	Max.	SD	sf	t	p
Form A	Experiment	31.2	31.0	17.0	41.0	5.0	78	13.4	0.000*
	Control	15.2	16.0	3.0	24.0	5.7			
Form B	Experiment	33.1	33.5	23.0	40.0	3.8	62	14.4	0.000*
	Control	15.8	15.5	3.0	33.0	6.6			
Total (A+B)	Experiment	64.3	65.0	46.0	78.0	7.4	69	16.1	0.000*
	Control	31.0	30.0	6.0	53.0	10.7			

Note. * $p < 0.01$.

Table 2 shows that the mean score of children in the experimental group for the TCT-DP post-test (Form A: 31.2; Form B: 33.1) and mean score for total (A+B) (64.3) were higher than those in the control group (Form A: 15.2, Form B: 15.8, total: 31.0). The *t*-test results revealed significant differences between the post-test mean scores of the TCT-DP Form A, Form B and total (A+B) (Form A: $t_{(78)} = 13.4, p < 0.01$; Form B: $t_{(62)} = 14.4, p < 0.01$; total (A+B): $t_{(69)} = 16.1, p < 0.01$).

Table 3

Wilcoxon Signed Rank Test Results According to Pre-test Post-test Scores of Control and Experimental Children From the TCT-DP Form A, Form B and Total (A+B) (N=40)

TCT-DP		Experimental group					z	p	Control group					z	p
		\bar{X}	Median	Min.	Max.	SD			\bar{X}	Median	Min.	Max.	SD		
Form A	Pre-test	9.7	8.0	5.0	23.0	4.4	-5.51	0.000*	11.1	11.0	4.0	29.0	4.9	-3.47	0.001*
	Post-test	31.2	31.0	17.0	41.0	5.0			15.2	16.0	3.0	24.0	5.7		
Form B	Pre-test	10.2	10.0	4.0	28.0	4.8	-5.52	0.000*	9.7	8.0	3.0	21.0	5.2	-3.47	0.001*
	Post-test	33.1	33.5	23.0	40.0	3.8			15.8	15.5	3.0	33.0	6.6		
Total (A+B)	Pre-test	20.0	18.0	9.0	51.0	8.2	-5.51	0.000*	20.8	18.5	8.0	43.0	8.9	-4.39	0.000*
	Post-test	64.3	65.0	46.0	78.0	7.4			31.0	30.0	6.0	53.0	10.7		

Note. * $p < 0.01$.

As shown in Table 3, there was a significant difference among the scores of experimental children from the TCT-DP Form A ($z = -5.51$), Form B ($z = -5.52$) and total (A+B) ($z = -5.51$) before and after the experiment ($p < 0.01$). The difference among the scores of control children from the TCT-DP pre-test, post-test Form A, Form B and total (A+B) was also significant ($p < 0.01$). The differences were in favor of the post-test scores.

Tables 4 and 5 show that experimental group children's post-test scores obtained from the TCT-DP post-test Form A, Form B and total (A+B) were not different from the ones obtained from the retention test. The mean scores were similar ($p > 0.05$).

Table 4

Wilcoxon Signed Rank Test Results of Experimental Group Children’s Post-test and Retention Scores for Form A of the TCT-DP (N = 40)

TCT-DP		\bar{X}	Median	Min.	Max.	SD	Wilcoxon z	p
Form A	Post-test	31.2	31.0	17	41	5.0	-0.155	0.876
	Retention	31.0	32.0	19	42	5.0		

Table 5

Paired Samples t-Test Results of Experimental Group Children’s Post-test and Retention Scores for Form B and Total (A+B) of the TCT-DP (N = 40)

TCT-DP		\bar{X}	Median	Min.	Max.	SD	t	p
Form B	Post-test	33.08	33.5	23	40	3.8	0.521	0.605
	Retention	32.78	33.0	22	42	4.3		
Total (A+B)	Post-test	64.28	65.0	46	78	7.4	1.007	0.321
	Retention	63.75	63.5	46	84	8.1		

Discussion

For children both in control group and in experimental group, no significant difference was found between the TCT-DP Form A, Form B and total (A+B) pre-test mean scores (see Table 1). This finding implies that children both in control group and in experimental group had similar characteristics in creative thinking prior to drama education. This finding also reveals that the groups were homogeneously designed.

The results indicated that the mean score of children in experimental group from the TCT-DP post-test Form A, Form B and mean score for total (A+B) were significantly higher than those of children in the control group (see Table 2). The children who received drama education, therefore, showed a significant progress in creative thinking compared with the ones in the control group. It, thus, appears that the creative thinking skills scores of children in experimental group increased, as they learnt the creative thinking skills included in the drama program. The major goal of drama activities which enable children to commute between the real world and fictional world is to raise creative, self-sufficient, self-aware and expressive individuals (Brown & Pleydell, 1999; Hendy & Toon, 2001; Gönen & Uyar, 2002; Freeman et al., 2003; Heining, 2003; Peter, 2003; Eratay, 2005). In parallel with this goal, drama makes a great contribution to the children in terms of supporting development and fostering creativity. At the same time, perceiving dramatic plays as regular plays may lead to a higher motivation in children as they engage in drama activities (Slade, 1995). Mellou (1995) studied the relations between drama and creativity in children, and concluded that drama plays an important role in supporting and improving creative thinking skills in children. She further concluded that the ability to transform roles and materials in drama contributes to the formation of creative skills. Önder and Kamaraj (2004), in their study explored the views of five- to six- year-old pre-school children on educational drama activities, and found that the majority of children who participated in the educational drama program loved the activities, as they were “good” and “similar to play”, while they preferred to participate in educational dramatic plays with the participation of the whole group.

The power of dramatic play is utilized in education. Play is presented at the very core of creative drama, and drama is intertwined with play. It is notable that the playful characteristic of drama is conducive to creative acquisitions and creation processes. Emerging from children’s spontaneous play, creative drama provides

opportunities for children to enhance their dramatic imagination (Pinciotti, 1993; Stewing & Buege, 1994; San, 1996; Peter, 2003). Possibilities, emerging with play and creativity, assist individuals in adjusting (adapting) to the status quo by providing flexibility in their behaviors. Christie and Johnsen (1983) investigated the effect of play on social and intellectual development in a correlational and experimental study, and concluded that there are similar points between play and creativity. As with creativity, they emphasized that play includes symbolic transformations in which materials and actions are used in a new and unusual way.

The findings of this study revealed an increase in groups' mean post-test scores obtained from the TCT-DP Form A, Form B and total (A+B). However, the level of increase in the post-test scores of the experimental group was higher than that of the control group (see Table 3). This finding demonstrated that children in the experimental group had a higher level of creative thinking skills than those in the control group. Drama provides children with an environment, which is isolated from perfectionism, competition and concern in order to express themselves freely. The emergence of creativity is affected significantly by the environment and individual's psychological state (O'Quin & Derks, 1997; Hohmann & Weikart, 2000). In addition, a criticism-free environment is thought to encourage an easier and more efficient reflection of children's creative thinking skills. In a study about the impact of imitative play program on play and creativity in six- to eight-year-old children and children's emotional processes, Moore and Russ (2008) found a significant increase in the play and creativity scores of children in experimental group who received training regarding the imitation game. Moreover, they emphasized that these children's emotional expression skills had been improved. Ömeroğlu (1990), on the other hand, claimed that creative drama education helps to improve children's verbal creativity, in her study aiming to determine the effect of creative drama education on five- to six- year-old children's verbal creativity. Lambert (2001) studied whether four- to five- year-old pre-school children display behaviors, such as identifying the problem, reconstruction, persistence, individual intervention, planning activities, problem-solving and creative thinking skills, and emphasized that the type of activity, materials and non-verbal responses as well as verbal responses have a positive influence on children's creative thinking and problem-solving skills. Tegano, Moran, and Sawyers (1991) stated that children learn more about themselves and their environment, they acquire information and improve their creative skills during drama activities. Therefore, drama contributes to various types of cognitive learning styles and promotes creativity in learners (Furman, 2000). Y. C. Yeh, Y. H. Yeh, Li, and Pen (2006) found that their creative drama education program contributes to the improvement in pre-school children's creative performance, especially in the context of originality and learning motivation. They also concluded that the administration of drama programs enhance teachers' occupational skills and creative skills. These findings revealed that undergoing drama education causes a positive change in children's creative thinking scores.

The increase in control group children's means scores from the TCT-DP post-test Form A, Form B and total (A+B) may have been due to either the early childhood education program or their cognitive development during the course of the study. According to a study conducted by Yıldız, Özkal, and Çetingöz (2003), seven- to eight- year-old pre-school children were found to have significantly better creative skills. This finding showed that early childhood education programs are effective in the enhancement of children's creative thinking skills.

Findings of this study also revealed that experimental group children's post-test scores from the TCT-DP post-test Form A, Form B and total (A+B) were not different from the ones obtained from the retention test, and the mean scores were similar (see Tables 4 and 5). Given that there was no significant difference between

the post-test and retention test scores obtained from the TCT-DP, it can be claimed that the effect of drama education was persistent in terms of the enhancement seen in children's creative thinking skills. According to Cheng (1997), drama is the opposite of traditional education and it makes children become involved in their own education by dismissing a passive learning style. Thanks to drama activities, children express their thoughts and emotions in a creative manner, reach the necessary information by observing or experimenting and gain rich experiences by actively participating in the activities (Taylor, 2000; Hendy & Toon, 2001; Freeman et al., 2003; Kandır, 2003; McCaslin, 2006). In this regard, drama is considered to be an active learning style which enables effective, efficient and permanent learning.

According to these results, the following recommendations may be made:

- (1) Teachers may inform of parents about their drama activities and request their involvement. Teachers may record the activities and share them with parents during parent education meetings;
- (2) Process-oriented evaluation might be used after the completion of drama activities and the effects seen on children may be discussed;
- (3) Research may develop a drama education program for parents and educators, and explore its effects on children's creative thinking skills;
- (4) Convenient, practical and standardized tools may be developed to evaluate children's creative thinking skills.

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