

Effects of Art Activities Combined with Storytelling Techniques on Creativity in Early Childhood

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Abstract

This study is a quasi-experimental research aimed at investigating the effects of art activities combined with storytelling techniques on creativity in early childhood. The sample group consists of 30 students, specifically 15 students from Kindergarten 2 (K2) and 15 students from Kindergarten 3 (K3), randomly divided into an experimental group and a control group using simple random sampling. The pretest and posttest data were collected using "The Test for Creative Thinking Drawing Production" (TCT-DP). Data analysis was performed using descriptive statistics to summarize the general information of the sample group, and inferential statistics, including the Wilcoxon Signed Ranks Test and the Mann-Whitney U-Test, to test the research hypotheses. The research findings indicate that after engaging in collaborative art activities along with storytelling techniques, the experimental group demonstrated significantly higher levels of creativity compared to their pre-test scores and also higher than the control group, with statistical significance at the .05 level. This study demonstrates that participating in collaborative art activities and storytelling techniques can promote creative thinking skills and further enhance narrative communication to express thoughts and emotions through self-created artworks in young children with high efficiency.

Keywords: Art activities, Storytelling techniques, Creativity.

1. Introduction

The creativity of human beings is of paramount importance, as our brains have the potential to think diversely and individually, leading to novel ideas and creations. Creative thinking relies on the potential and development of the brain, which has two hemispheres with distinct functions. The left hemisphere is responsible for decision-making and reasoning, while the right hemisphere plays a crucial role in creative thinking. Both hemispheres collaborate to facilitate activities and thoughts of humans [1]. Creativity can be developed through deliberate practice, especially in early childhood, which yields significant benefits [2]. Early childhood is a critical period for brain development and learning, as children progress rapidly in various aspects, including physical, emotional, social, and intellectual development. Therefore, it is necessary to begin fostering creativity from birth to 6 years old, since it corresponds to their physical, emotional, social, and intellectual development [3]. If children in this age group do not receive cognitive development, they will be excluded from the cycle of fostering creative thinking, akin to a machine that has not yet been activated [4].

Creativity can be developed through art activities, as art imagination provides an opportunity for free expression through art works [5]. Training begins with creating an atmosphere and arranging an environment conducive to practice, in order to foster creative thinking skills [6]. Moreover, there is a belief that humans can develop creativity through problem-solving training, using drawing or engaging in creative thinking activity sets, which are essential to start nurturing from early childhood. In reality, creativity is comprised of Guilford's theory of divergent thinking, which states that creative thinking is a cognitive characteristic of thinking in multiple directions and expansively, leading to the creation of novel and innovative ideas that are enriched with originality, fluency, flexibility, and elaboration [7]. Another crucial aspect is storytelling, which involves narrating various

stories that are within the individual's experiences via art activities. These are inspiring stories that are conveyed as narratives to stimulate imagination and creativity in early childhood [8].

Based on all the points mentioned, the researchers conducted a study to examine the effectiveness of promoting creativity through art activities such as drawing, coloring, painting, folding, sculpting, assembling, tearing, pasting, and inventing, along with storytelling of their own works. This study was based on Guilford's theory, which consists of four components: originality, fluency, flexibility, and elaboration.

2. Objectives

The purpose of this study is to investigate the effects of art activities combined with storytelling techniques on creativity in early childhood. The study involves comparing the creativity scores of both the experimental- and control groups before and after the experimental intervention.

3. Methods

3.1 Participants

This research is a quasi-experimental study that employs a two-group pretest-posttest design. The sample group consists of male and female students currently studying in the second and third grades of kindergarten, in the first semester of the academic year 2019. The students are from School A and School B, located in Bang Khonthi District, Samut Songkhram Province. School A is the experimental group, comprising 15 students who receive teaching through art activities combined with storytelling techniques. School B is the control group, consisting of 15 students who receive art instruction through video clips. The sample groups were selected using a simple random sampling method from schools with similar characteristics in terms of the number of students, school size, and location in Bang Khonthi District, Samut Songkhram Province.

3.2 Measures

The questionnaires used in this research are divided into 2 types: tool used for experimentation and tool used for data collection, as follows:

3.2.1 Tool used for experimentation

There are 8 arts and storytelling activities, including: drawing and coloring beautiful pictures (activity 1), drawing and coloring a picture based on a fairy tale (activity 2), collaging and drawing from geometric shapes (activity 3), creating art from modeling clay (activity 4), creating fish from a paper plate (activity 5), my little frog (activity 6), where is boat going? (activity 7), cute little animals (activity 8). Each activity involves the following steps: greetings and stimulating interest, making agreements on using the materials together, engaging in the art-making process, and telling a story based on the artwork, linking it to their own experiences.

3.2.2 Tool used for data collection

The data collection tool used is the Test of Creative Thinking - Drawing Production (TCT-DP), which is an assessment instrument developed by Jellen and Urban. The process begins with the participants receiving the TCT-DP test and a black drawing pen without an eraser. Then, the test administrator reads the instructions clearly: "The drawing in front of you is currently incomplete. Please draw and complete it using your imagination. You can draw anything you like. When you finish your drawing, please submit it to the teacher." Once the participants understand the instructions, they proceed to draw their pictures. The test administrator records the time taken by each participant, ensuring that no one exceeds 12 minutes. Additionally, the administrator notes the name, age, and gender of each participant on the right side of the paper. The entire test is conducted within a 15-minute time limit, after which the test administrator collects all the drawings and data.

The scoring criteria for the TCT-DP consist of continuations (Cn), completions (Cm), new elements (Ne), connections made with lines (Cl), connections made that contribute to a theme (Cth), boundary breaking fragment-dependent (Bid), boundary breaking being fragment-dependent (Bfi), perspective (Pe), humor (Hu), unconventionality (Uc), and speed (Sp). The test is scored across these 11 criteria, resulting in a total score of 72 points for the TCT-DP.

The evaluation criteria for the level of creative thinking ability in the TCT-DP test are as follows:

Total score below 24: Low level of creative thinking

Total score between 24-47: Moderate level of creative thinking

Total score of 48 and above: High level of creative thinking

To assess the quality of the operational tool, content validity is examined by three experts. They carefully check the alignment of the questionnaire items with the established definitions and content. The results obtained from their evaluation are then used to calculate the Index of Item-Objectives Congruence (IOC), with a passing criterion set at 0.5 or above. The findings indicate that each version of the tool has an IOC value ranging from 0.70 to 1.00, demonstrating that the questionnaire possesses content validity and can be effectively utilized.

3.3 Experimental procedures and statistical analysis

Before commencing the research, the researcher obtained ethical approval for human research from Suan Sunandha Rajabhat University (Certification number: COA.2-011/2019). Subsequently, the researcher contacted the schools and selected the experimental and control groups. They then requested permission from the parents of both groups for their children to participate in the activities by sending detailed research documents and a letter of consent. Two weeks prior to the commencement of the activities, the researcher immersed themselves in the classrooms of the sample group to establish familiarity and provide guidelines on how to engage in the art activities combined with storytelling techniques. This step aimed to ensure that the experimental group students were well-informed about the activity guidelines and allowed the researcher to administer the pre-test of creative thinking using TCT-DP before the experiment began. The activities were organized over a period of 4 weeks, with each session lasting 30 minutes, and they were conducted twice a week, resulting in a total of 8 activity sessions. Upon completing the experiment, data were collected from both the experimental and control groups using the same test (TCT-DP). The collected data were then carefully checked for completeness, and subsequently, statistical analysis was performed.

Data analysis was conducted using standard statistical software, and a significance level of $p < 0.05$ was set as the threshold for accepting research hypotheses. Descriptive statistics, such as percentages, mean, and standard deviation, were used to analyze the general data of the sample group. Additionally, the pre-test and post-test creative thinking scores within each group (experimental and control) were compared using the Wilcoxon Signed Ranks Test. Furthermore, to compare the creative thinking scores between the experimental and control groups, the Mann-Whitney U-Test was utilized. These statistical tests were chosen based on their appropriateness for non-parametric data analysis.

4. Results

Our study's results are divided into two parts including general demographic data of the experimental and control groups and the analysis of creative thinking scores before and after the experiment of the experimental and control groups.

4.1 Demographic characteristics

In the experimental group, the assessment revealed that 66.7% were male and 33.3% were female, with 60% of the participants being from Kindergarten Year 3 and 40% from Kindergarten Year 2. On the other hand, the control group consisted of 60% females and 40% males, with 60% from Kindergarten Year 3 and 40.0% from Kindergarten Year 2.

4.2 Analysis of creative thinking scores

The number and percentage of creative thinking abilities of the experimental and control groups based on the TCT-DP before and after the experiment, are presented in Table 1.

Table 1. Number and percentage of creative thinking abilities of the experimental and control groups based on the TCT-DP before and after the experiment.

Criteria of Creative Thinking Levels	Before experiment		After experiment	
	Experimental group (%)	Control group (%)	Experimental group (%)	Control group (%)
High level (scores 48 and above)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Moderate level (scores between 24 - 47)	0 (0.0)	0 (0.0)	5 (33.3)	0 (0.0)
Low level (scores below 24)	15 (100.0)	15 (100.0)	10 (66.7)	15 (100.0)
Average	9.67	10.73	20.40	13.27
Standard Deviation (S.D.)	4.48	3.24	4.74	3.05
Min-Max	4-22	6-15	12-27	7-18

From Table 1, before the experiment, both the experimental and control groups had creative thinking scores at a low level of 100.0%. The experimental group had an average score of 9.67 with a standard deviation of 4.48. The lowest score in the experimental group was 4, and the highest score was 22. On the other hand, the control group had an average score of 10.73 with a standard deviation of 3.24. The lowest score in the control group was 6, and the highest score was 15.

After the experiment, it was found that the majority of the experimental group had creative thinking scores at a low level of 66.7% followed by at a moderate level of 33.3%. The experimental group had an average score of 20.40 with a standard deviation of 4.74. The lowest score in the experimental group was 12, and the highest score was 27. On the other hand, the control group had creative thinking scores at a low level of 100%. The control group had an average score of 13.27 with a standard deviation of 3.05. The lowest score in the control group was 7, and the highest score was 18, with a maximum score of 72 points.

Table 2. Comparison of average creative thinking scores within the experimental and control groups, as well as between the experimental and control groups before and after the experiment (n = 15 for experimental group, n = 15 for control group).

Group / Experiment	Average score		Z (between groups)	p-value** (between groups)
	Experimental group	Control group		
Before the experiment	9.76	10.73	-1.190	0.234
After the experiment	20.40	13.27	-3.722	<.001
Z (within groups)	-3.413	-1.940		
p-value* (within groups)	0.001	0.052		

* Wilcoxon Signed Ranks Test, ** Mann-Whitney U -Test

From Table 2, it is evident that the experimental group exhibited a statistically significant increase in average creative thinking scores after the experiment compared to before the experiment ($p \leq 0.05$). On the other hand, within the control group, there was no significant difference in average creative thinking scores before and after the experiment ($p > 0.05$). Prior to the experiment, there was no significant difference in average creative thinking scores between the experimental and control groups ($p > 0.05$). However, following the experiment, the average creative thinking scores of the experimental group were significantly higher than those of the control group ($p \leq 0.05$).

5. Discussion

This study revealed that the use of art activities combined with storytelling techniques had a positive impact on creative thinking in young children. The experimental group showed a significant increase in creative thinking compared to before the experiment, and this improvement was greater than that observed in the control group. The positive results stem from providing a variety of art activities that allow children to actively participate [9]. These encouraging outcomes can be attributed to the diverse range of art activities provided, which actively engaged the children's imagination and fostered their creative thinking skills, encompassing essential elements such as originality, fluency, flexibility, and elaboration [7]. In addition, children can also express their emotions and knowledge through works of art created during various art activities [10]. These activities promote each child's creative thinking abilities through hands-on participation. The researchers used individual behavior observation with the experimental group and found that the experimental group showed a high level of interest in the instructor, attentive engagement in assigned tasks, empathetic and supportive behavior, sharing of materials, and active participation in discussing their peers' stories.

This study's findings are consistent with the research conducted by Chanidapha Sawangsri [11], which investigated the development of creative thinking through learning management as a researcher child in preschool children at Tha Khlong 1 Municipality School in Khlong Luang District, Pathum Thani Province. The study found that the overall average creativity scores increased significantly after the experiment ($p < .01$). Additionally, this study is consistent with the research conducted by Vatinnee Bunjong [12], which investigated the effects of art experiences on the creative thinking of early childhood. The study found that after the experiment, the experimental group had significantly higher average creativity scores than the control group, with statistical significance at the .01 level. Moreover, the experimental group's average creativity scores were significantly higher after the experiment compared to before the experiment, with statistical significance at the .01 level. Thus, the combination of art activities and storytelling techniques proved to be a powerful tool in stimulating creative thinking and encouraging expressive communication in young children. By providing an environment that encourages active participation and self-expression, this approach holds great potential for fostering creativity and nurturing imaginative minds from an early age.

6. Conclusions

The findings suggest that implementing art activities and storytelling techniques can effectively enhance creative thinking abilities in young children. For the art activities combined with storytelling techniques in this study, there are four steps involved: greeting to stimulate interest, making agreements on using art materials together, engaging in art creation, and storytelling based on the artwork, connecting it with personal experiences. Teachers who wish to apply this technique effectively can consider selecting art activities and preparing appropriate materials based on the content being taught and the time available for the teaching session. Furthermore, it is essential not to choose activities that are too challenging for children beyond their abilities. The selected materials should be safe and familiar to the children, allowing them to handle and manipulate them independently. As for the storytelling techniques, some children might have difficulty narrating extensively. In such cases, teachers can use questions to stimulate and extend their storytelling. During storytelling, creating connections between the artwork and the children's personal experiences can be encouraged.

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