THE DEVELOPMENT OF CHILDREN'S CREATIVITY IN ANJI GAME ACTIVITIES

Ying LI[1]

1 Student-Master of Education Program in Curriculum and Instruction, Pathumthani University, Thailand; 2595752982@qq.com

ARTICLE HISTORY
Received: 28 July 2023 **Revised:** 16 August 2023 **Published:** 28 August 2023

ABSTRACT

The purpose of this study is to understand Anji's game activities by consulting the relevant Curriculum theory, and take a kindergarten that is ready to carry out “Anji's game” as a case study. The sample comes from 50 children in the senior class of a kindergarten in Chongqing. Use targeted questionnaire surveys and observation records to collect data. Using SPSS22.0 as a statistical tool for data analysis. The results indicate that Anji games can promote the development of creative thinking in large class children. The conclusion of this study is that Anji games can significantly improve the fluency, originality, and abstract title of creative thinking in large class children.

Keywords: Anji Game, Large Class Children, Creative Thinking, Thinking Tests, Observation Records, Case Analysis

CITATION INFORMATION: Li, Y. (2023). The Development of Children's Creativity in Anji Game Activities. *Procedia of Multidisciplinary Research, 1*(8), 13

INTRODUCTION

The creativity level of young children affects the future creativity level of the motherland, and their overall quality directly affects the future development of the motherland. In its book "Learning to Survive-Today and Tomorrow in the Education Industry," UNESCO pointed out that "modern society is constantly changing, and only creative talents can adapt to future social development. The mission of education is to cultivate creative talents for an unknown world. At the same time, research has shown that 3-6 years old is the embryonic stage of creativity and the "critical period" for cultivating creativity. From this, it can be seen that cultivating the creativity of young children in preschool education is particularly important. We should grasp the critical period of young children, unleash their subjective initiative, and actively promote the development of their creative thinking.

"Anji Game" is the abbreviation of the kindergarten game curriculum developed in Anji County, Zhejiang Province, China. It is famous for its autonomous games. It advocates returning the right to play to children, and has become an educational model of "taking games as the basic activities of kindergartens" in the field of preschool education in China. Its unique educational philosophy and curriculum reform experience have attracted the attention and research of many preschool educators at home and abroad, Even gained recognition and learning from the foreign preschool education community. In recent years, with the exploration and development of Anji's game education, its educational model has become the leading banner of China's preschool education, which has aroused strong repercussions in the field of preschool education at home and abroad.

Therefore, researchers have great interest in the autonomous play of Anji game education and the development of children's creativity in game activities. They want to explore the practical mode of Anji game education, and at the same time, delve into the value that game activities bring to the development of children's creativity from the perspective of young children, providing educational experience and reflection for current game teaching in kindergartens.

The purpose of this study is to understand Anji's game activities by consulting the relevant Curriculum theory, and take a kindergarten that is ready to carry out "Anji's game" as a case study. By fully understanding and participating in the process of implementing Anji games in the kindergarten, an experimental group and a control group were established to explore and explore the development of children's creativity in game activities. And analyze its advantages and suggestions from the perspective of the development of children's creativity. I hope to further improve and enhance the value of Anji Games in this kindergarten, and provide some practical reference and experience inspiration for other "Anji Games" kindergartens to fully understand their core concepts during promotion.

LITERATURE REVIEWS

The author searched for the keyword "Anji Game" on "CNKI" and Wanfang Data. Among the materials browsed, there are 12 master's theses that have studied the value of the "Anji Games" course and its impact on the development of children's creativity; There are 20 articles from frontline teachers in kindergartens, mainly focusing on the research on the practical application of Anji games in kindergartens and their implications for teachers and young children; There are 41 articles from undergraduate students majoring in preschool education, mainly focusing on theoretical research on the understanding and value of Anji games; China Education Daily has conducted six specialized reports on Anji Games. By searching for the keyword "Anji Play" on the internet, a total of 5 relevant articles were found.

In the information found by searching for the keyword "Preschool Creativity", Kalmar, M& Kalmar, Z. evaluated the impact of structured game planning on children aged 5 to 6 years old, and confirmed that experimental participants significantly improved their evaluation of three indicators of graphic creativity: fluency, flexibility, and originality. Cartwright proposed that

in construction games, children should first be encouraged to explore and become familiar with the colors, shapes, volumes, and other aspects of construction materials. Domestic scholar Hua Aihua believes that when children use low structural materials for construction, they will exhibit more creative behaviors and works. Huang Rensong proposed to construct games to promote the development of children's creative abilities. Qin Qing and Sun Min also believe that materials with low structure, multiple combinations, and varying possibilities in constructing games are more attractive to young children and encourage them to learn to think actively, develop their imagination and creativity.

The above domestic and foreign researchers have found the relationship between constructive games and children's creativity, and they believe that cultivating children's innovative awareness in constructive games plays a very important role. Provided valuable experience for our research project. From the perspective of research content, research on Anji games has mainly focused on early childhood education, game materials, and game activities. There is a large amount of literature on Anji curriculum, theoretical foundations, and implementation methods, but there is little research on the development of children's creativity involved. Based on the existing research gaps mentioned above, the author takes the development of case teaching resources as the starting point, combined with the current unique “Anji Game” education model of Chinese preschool education, and takes the development of children's creativity as the research entry point, explores the relevant theories of Anji Game, and makes contributions to expanding the development of case teaching resources in the preschool field and enriching the research related to Anji Game.

Based on previous research experience, the author found that the theme creation in construction games is relatively casual, and the evaluation method focuses more on the results of children's construction works, neglecting the inherent thinking, uniqueness, and creativity of children's works. Therefore, how to observe and record the performance of young children in Anji game activities, create suitable situations for young children, and record the development of children's creativity will be the research direction of researchers. Therefore, this study makes the following assumptions:

1) After playing Anji games for 2 months, the experimental group showed a higher overall level of creative thinking compared to the control group.

2) After playing Anji games for 2 months, the experimental group showed higher levels of creative thinking in five dimensions, namely fluency, originality, abstraction, refinement, and resistance to premature closure (contemplation), compared to the control group.

From the literature review, the research framework shown in Figure 1 can be drawn.

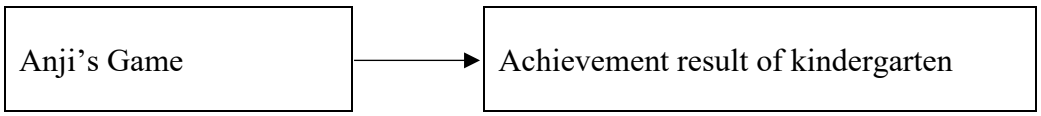

Figure 1 Conceptual Framework

RESEARCH METHODOLOGY

In order to test the development of children's creativity in Anji game activities, this study adopted a quantitative research method. The location of this study was selected as the Affiliated Kindergarten of Chongqing Normal University, which is preparing to carry out Anji game activities for comparison before and after the experiment. The experimental example group selected large class children because they have rich gaming experience and a high frequency of gaming. According to research needs, this study used two sets of test questions, TTCT “Creative Thinking-Picture” and TCAM “Creative Thinking in Activities and Actions”, compiled by E. P. Torrence in 1981, to measure children's creativity through experimental observation. TCAM and TTCT are measurement tools designed specifically for 3-8 year old

children to test their symbolic ability. Through problem-solving and problem-solving, young children promote their imagination of materials and alternative behaviors of playing with multiple objects. The process of exploration is the process of their creative imagination. The test consists of six activities:
Activity 1 forms a picture: What does this circle look like? You can pick up a brush and draw a picture.
Activity 2: Complete the drawing: What can these lines become? Draw with a brush.
Activity 3 Problem Solving: How many methods are there?
Activity 4 imitates: Can you move like something?
Activity 5 Problem Solving: Is there any other way?
Activity 6 Problem Solving: What can this be used for?
To sum up, in the process of Action research, the researchers used the above six activity tests to make a summary evaluation of children's creative thinking from 1-5 grades in the five aspects of fluency, originality, abstraction, refinement and resistance to premature closure in the scoring manual, where 1 means “not like” to 5 means “very good, very like”. Secondly, in order to observe and understand the development of children's creativity in the process of Anji games more deeply, this study analyzes a series of reactions, thoughts, and behavioral expressions of children's creative thinking during Anji games for a process evaluation, in order to analyze the development trend and changes of children's creativity. By comparing the pre and posttests of the experimental group of children, we aim to explore whether Anji games are effective in promoting children's creativity. Whether young children continuously learn and develop innovative behaviors in games.
In order to obtain relatively accurate data, the testing personnel were provided with key testing points before the study. Descriptive statistics were used for data analysis, including degrees of freedom, test statistics, significance levels, and number of people, mean, and standard deviation. During the implementation of the Anji game, methods such as video filming, observation and questioning, and teacher evaluation are used to organize and analyze the behavior and performance of young children. After each round of game activities, the researchers and the research team discussed and reflected on the problems that existed in the design and implementation process of the activities. To address the issue of achieving key goals, report the results in descriptive and tabular form. All details will be introduced in the next section.

RESEARCH RESULTS

Respondents’ Profiles and Studied Variables

The researcher selected the large class as the example group of this Action research. Through the “Creative Thinking in Activities and Actions”, 50 children in the large class were pretested. According to the way of low creativity score, 25 children in the experimental group (14 boys, 56%; 11 girls, 44%) and 25 children in the control group (13 boys, 52%; 12 girls, 48%) were randomly selected. The article adopts an anonymous approach to protect the privacy of young children, replacing the names of the parties with nicknames.
The independent variable is whether the game type of the large class children is Anji game, and the dependent variable is whether the creativity of the large class children develops. After the completion of the two month Anji game activity experiment, an independent sample T-test was conducted on the total score of the creative thinking posttest between the experimental group and the control group. The data was first tested for normality using the normal PP plot test method using SPSS 20.0 statistical analysis software, and then at the significance level α = Perform independent sample bilateral T-test on 0.05.

Homogeneity Analysis of Creative Thinking in Experimental Group and Control Group
In this study, independent sample T-test was conducted on the total score of creative thinking pre-test in the experimental group and the control group, as well as five dimensions of fluency, originality, title abstraction, delicacy and anti-premature closure (ruminative). The results are shown in Table 1:

Table 1 Homogeneity test of total score of creative thinking and previous scores of each dimension between experimental group and control group

Dimension	Control group(M±SD)	Experimental group(M±SD)	t
Fluency	19.00±6.67	18.65±6.81	-0.61
Originality	15.00±6.23	14.05±5.87	-0.81
Abstractness of title	1.80±1.91	2.50±1.88	1.17
Delicacy	3.75±1.25	3.85±1.23	0.36
Resistance to premature closure	3.45±2.09	3.20±2.02	0.39
Total score	43.00±15.56	42.25±14.41	-0.16

As can be seen from Table 1, there is no significant difference in the pre-test results of the total score of creative thinking and the scores of five dimensions between the two groups, $P > 0.05$. This indicates that the creative thinking level of children in the experimental group and the control group is similar before the experiment, which can be used as the same research object.

Comparison of total score of creative thinking
Between experimental group and control group after two months of Anji's game activity experiment, independent sample T test was conducted on the total score of creative thinking post-test of the experimental group and control group, and the results are shown in Table 2:

Table 2 Comparison of overall differences in creative thinking between experimental group and control group

	Control group(M±SD)	Experimental group(M±SD)	t
Pretest	43.00±15.56	42.25±14.41	-0.16
Post-test	45.65±14.16	57.75±12.49	2.87**

Note:* means $p < 0.05$, ** means $p < 0.01$, *** means $p < .001$, the same below.

As can be seen from Table 2, the total score of creative thinking of children in the two groups is significantly different, $P < 0.05$, the experimental group is significantly higher than the control group, and the mean value of the experimental group is 12.10 higher than that of the control group. It can be seen that after Anji game activities, the overall level of creative thinking of children in senior class has been significantly improved.

Comparison of Creative Thinking Scores of Experimental Group and Control Group
After two months of Anji game experiment, independent sample T test was conducted on the post-test scores of creative thinking dimensions of the experimental group and control group. The results are shown in Table 3:

Table 3 Comparison of post-test scores of creative thinking in different dimensions between experimental group and control group

	Control group(M±SD)	Experimental group(M±SD)	t
Fluency	19.60±5.57	24.56±4.52	3.15**
Originality	15.10±6.08	18.85±5.04	2.12*
Abstractness of title	2.55±1.36	4.75±2.25	3.75**
Delicacy	3.90±1.33	4.15±1.35	0.59
Resistance to premature closure	4.50±2.21	5.35±2.50	1.14

As can be seen from Table 3, there are significant differences between the two groups in the dimensions of fluency, originality and title abstractness, $P < 0.05$, and the experimental group is significantly higher than the control group. The mean value of fluency of children in the experimental group was 4.96 higher than that of the control group, the mean value of originality of children in the experimental group was 3.75 higher than that of the control group, and the mean value of title abstractness of children in the experimental group was 2.20 higher than that of the control group. There were no significant differences in delicacy and resistance to premature closure between the two groups ($P > 0.05$). Thus it can be seen that after the game of Anji activity, the development of the dimensions of fluency, originality and title abstractness in children's creative thinking has been significantly improved.

Comparison of Inter-Group and Intra-Group Differences in Creative Thinking Scores of Experimental Group and Control Group

The influence of Anji games on children's creative thinking was analyzed by repeated measure variance analysis. With group (experimental group and control group) as the inter-group variable, time (pre-test and post-test) as the intra-group variable, and scores of the two groups of children in various dimensions of creative thinking as the dependent variable, the researchers conducted 2*2 repeated measurement analysis of variance.

Dimension of Creative Thinking Fluency

Table 4 Main effects of different dimensions of creative thinking in experimental group and control group (df = 1, n = 50)

Create the dimensions of thinking		Sum of Squares	F
Group	Fluency	110.45	1.91
	Originality	39.20	0.67
	Abstractness of title	39.20	7.63**
	Delicacy	0.61	0.20
	Resistance to premature closure	1.80	0.26

Table 5 Main effects of each dimension of creative thinking measured before and after (df = 1, n = 50)

Create the dimensions of thinking		Sum of Squares	F
Time	Fluency	217.85	15.55***
	Originality	120.05	12.80**
	Abstractness of title	48.05	27.19***
	Delicacy	1.01	4.56*
	Resistance to premature closure	51.20	18.23**
Time * Group	Fluency	145.80	10.41**
	Originality	110.45	11.77**
	Abstractness of title	9.80	5.55**
	Delicacy	0.11	0.51
	Resistance to premature closure	6.05	2.15

As can be seen from Table 4, the time main effect of creative thinking fluency was significant (F (1, 50) = 15.55, P < 0.05). As can be seen from Table 5, the main effect of creative thinking fluency group was not significant (F (1, 50) = 1.91, P > 0.05), while the interaction between time and group was significant (F (1, 50) = 0.41, P < 0.05). Further simple effect analysis showed that there were significant differences in the scores of fluency before and after test in the experimental group (P < 0.05), and the scores of fluency after and after test were higher than those of the pre-test, while there were no significant differences in the scores of fluency before and after test in the control group (P > 0.05). Thus, after the intervention of Anji's game, the fluency score of children in the experimental group was significantly improved, while that of children in the control group was not significantly improved. It can also be clearly seen from the change trend in Figure 7 that although the fluency score of the experimental group was lower than that of the control group in the pre-test, after the experimental intervention, the score of the experimental group was significantly higher than that of the control group in the post-test, and the increase of the experimental group was much greater than that of the control group. It was confirmed that the Anji game activity had a significant effect on the improvement of fluency dimension of children in the experimental group.

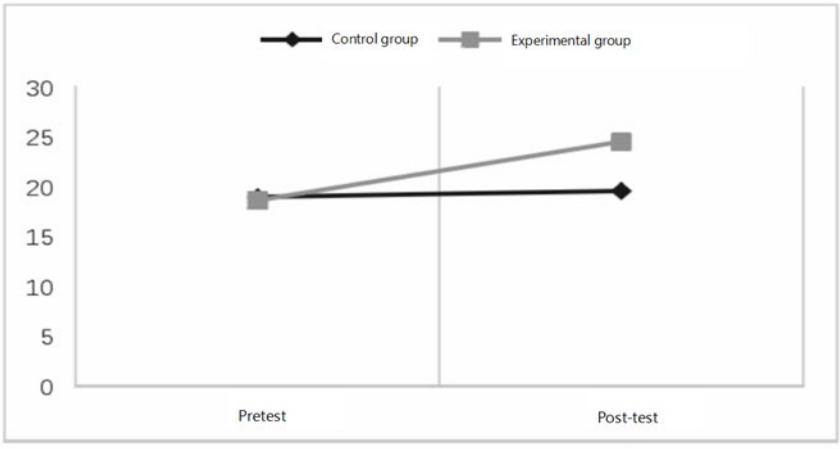

Figure 2 Before and after changes in fluency dimension between the experimental group and the control group

Dimension of Originality in Creative Thinking

It can be seen from Table 4 that the time main effect of originality in creative thinking is significant (F (1, 50) = 12.80, P < 0.05), while the time main effect of originality in creative thinking group is not significant (F (1, 50) = 0.67, P > 0.05). The interaction between time and group was significant (F (1, 50) = 11.77, P < 0.05). Further simple effect analysis showed that

there were significant differences in pre and post test scores of originality in the experimental group ($P < 0.05$), but no significant differences in pre and post test scores of originality in the control group ($P > 0.05$). Thus, after participating in Anji games, the originality scores of children in the experimental group were significantly improved, while those in the control group were not significantly improved. It can also be clearly seen from the changing trend in Figure 8 that although the originality score of the experimental group was lower than that of the control group in the pre-test, after the experimental intervention, the originality score of the experimental group was significantly higher than that of the control group, and the increase of the experimental group was much greater than that of the control group. It is confirmed that the Anji play activity has obvious effect on the improvement of the originality dimension of children in the experimental group.

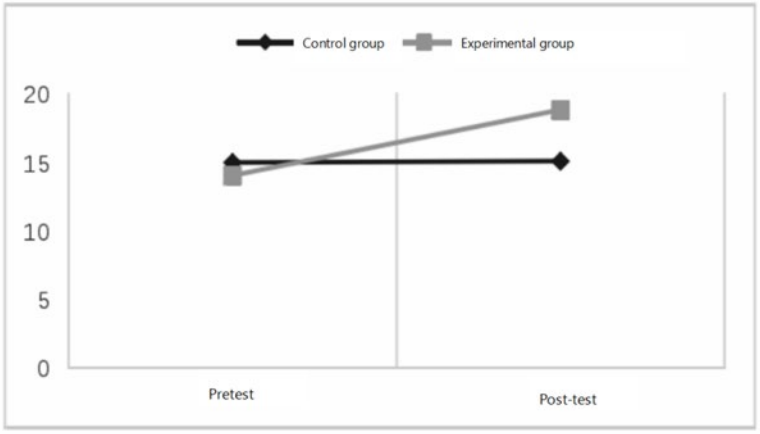

Figure 3 Changes in the dimension of originality measured before and after the experimental group and the control group

Abstractness Dimension of Creative Thinking Title

It can be seen from Table 4 that the temporal main effect of the title abstractness of creative thinking was significant ($F (1, 50) = 26.01$, $P < 0.05$). It can be seen from Table 5 that the main effect of the title abstractness of creative thinking was significant ($F (1, 50) = 7.94$, $P < 0.05$). The interaction between time and group was significant ($F (1, 50) = 6.50$, $P < 0.05$). Further simple effect analysis showed that there were significant differences in the scores of headline abstractness in the experimental group ($P < 0.05$), but no significant differences in the scores of originality in the control group ($P > 0.05$). Thus, after the intervention of Anji's game activities, the experimental group had a significant improvement in the title abstractness score, while the control group had no significant improvement in the title abstractness score. It can also be clearly seen from the trend of change in Figure 9 that after experimental intervention, the score of the experimental group was significantly higher than that of the control group, and the increase of the experimental group was much greater than that of the control group. It was confirmed that the Anji game activity had an obvious effect on the improvement of the abstract dimension of the title in the experimental group.

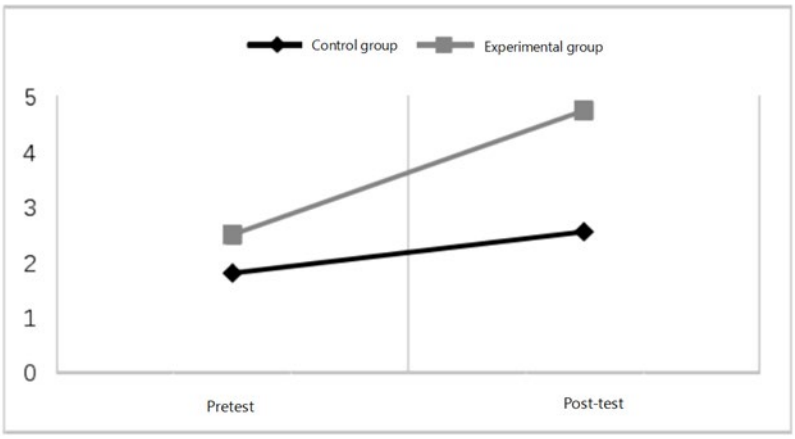

Figure 4 Pre-and post-measurement changes in the abstract dimension of titles of the experimental group and the control group

Exquisite Dimension of Creative Thinking

As can be seen from Table 4, the time main effect of children's score on the dimension of creative thinking is not significant ($F (1, 50) = 4.56$, $P < 0.05$). As can be seen from Table 5, the main effect of children's score group on the dimension of creative thinking is not significant ($F (1, 50) = 0.20$, $P > 0.05$). The interaction between time and group was not significant ($F (1, 50) = 0.51$, $P > 0.05$).

DISCUSSION & CONCLUSION

This study explores the impact of Anji games on children's creativity from five dimensions: fluency, originality, abstract title, refinement, and resistance to premature closure (contemplation). Through in-depth analysis of the entire experimental data and the creative performance of large class children in the Anji game process, the following conclusions can be drawn.

1) Anji games can promote the development of creative thinking in large class children.

2) Anji games can significantly improve the fluency, originality, and abstract title of creative thinking in large class children.

3) Anji games have no significant effect on promoting the refinement of creative thinking and resisting premature closure in large class children.

The impact of Anji games on the creative performance of large class children includes: diverse expression of games, mutual learning of group experiences, and imaginative expression of language, innovative problem-solving, and flexible creation of imitation.

From the analysis above, the author and the teacher discussed the obvious advantages of Anji games. The open environment of Anji games can better stimulate children's creative thinking, thereby promoting the improvement of children's creativity. Is it possible to completely deny the advantages of other game activities such as teaching games in this situation?. We know that teaching games have a clearer purpose and higher educational value. By creating a regional environment and the influence of materials provided by teachers, young children can better experience real life. Therefore, the author believes that teaching games should be combined with Anji games. That is to say, in teaching games, teachers focus on norms and processes, showcasing established rules in real life to young children in the form of games, and guiding them to subconsciously imitate. This is a process of targeted accumulation of experience for young children. Anji Games emphasizes the fun of games and encourages children to freely play. In such an open environment, children will practice, consolidate, enrich passive games, and create more new games. The inspiration gained in the Anji game will be reflected in the

teaching game, and teachers can also analyze the interests of young children by observing their performance in the Anji game, thereby nurturing the teaching game. This will be a mutually beneficial process.

Therefore, the author believes that paying attention to the educational value of teaching games and increasing the number of Anji games in open spaces. Based on accumulated experience, stimulate children's creative thinking, thereby achieving the improvement of children's creativity.

REFERENCES

Barrett, M. S, Creech, A., & Zhukov, K. (2021). Creative Collaboration and Collaborative Creativity: A Systematic Literature Review. *Frontiers in Psychology, 9*(12).

Chen Shaoli. (2017). How to develop Creative Games with Local Resources. *Preschool Education Research,* (03), 70-72.

Cheng Xueqin. (2019). *Learns to play the piano. Hands-off Play, Discovering Children*. Shanghai: East China Normal University Press.

En Tianzhang. (2000). *The Theory and Method of creative psychology*. Shijiazhuang: Hebei People's Publishing House.

Li Li. (2016). Anji Games, Lighting up Children's beautiful childhood. *Inner Mongolia Education*, (35), 9.

Ministry of Education of the People's Republic of China. (2012). *A Guide to Learning and Development for Children 3-6 years Old*. Beijing: Capital Normal University Press.

Ran Xueya. (2021). *Study on Anji's Game Education under the Observation of "Game Man" Theory*. Harbin Normal University.

UNESCO Commission for International Education Development. (1996). *Learning to Survive: Today and Tomorrow in the World of Education*. Educational Science Press.

Wang Canming. (2016). *Creative development and education of preschool children*. Nanjing University Press.

Wright, S. (2010). *Understanding creativity in early childhood*. London, UK: Sage.

Ye Pingzhi, & Ma Qianru. (2012). Characteristics and rules of creative thinking development in children aged 2-6 years. *Preschool Education Research,* (8), 39-41.

Zhang Lihua, & Bai Xuejun. (2006). Research on Creative Thinking. *Science of Education, 22*(3), 87-89.

Data Availability Statement: The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Conflicts of Interest: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.