



# The effectiveness of creativity development program on problem solving skills and creativity in 4 to 6 year old children

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## Abstract

**Aim:** The present study was conducted with the aim of investigating the effectiveness of creativity development program on problem solving skills and creativity in preschool children. **Method:** This research was practical and semi-experimental with a pre-test-post-test design and a control group. The statistical population of the research included all children aged 4 to 6 in Isfahan city in 2021. In order to carry out the research, 30 children were selected by multi-stage cluster sampling method and were equally replaced in two experimental and control groups (15 people in each group). The members of the experimental group participated in the creativity development program during 12 sessions of 60 minutes, while the subjects of the control group did not receive any intervention. Subjects were evaluated using Torrance test of creative thinking (1974) and the London Shalis Tower Test (1982). The data were analyzed using covariance analysis. **Results:** The findings indicated that the creativity development program had a positive and significant effect on problem solving skills and creativity in preschool children ( $P<0.05$ ). **Conclusion:** Therefore, from the findings of this research, it can be concluded that creativity development program can play an important role in improving problem solving skills and creativity in preschool children.

**Keywords:** Development of creativity, problem solving, creativity, preschool.

## Introduction

It seems that providing appropriate education to children in pre-primary school age, with the aim of strengthening problem-solving skills and creativity, is of fundamental importance. So far, various educational programs have been used in order to achieve this goal. However, none of these studies have used a program specifically designed to improve creativity and cover all its dimensions in a comprehensive way. Meanwhile, in order to better prepare children to face the problems of today's world and solve possible problems in the future, it is necessary to focus on all aspects of creativity (Sumarni et al., 2022). In addition, it is necessary to pay attention to the basic principles in the education of this age group in developing educational programs for preschool children. In preschool education, children are the main body of learning and all educational activities are done with the aim of promoting their growth. Also, children play an active role in learning, intellectual activities and cognitive processes, and teachers are helpful and cooperative. Independence is also one of the other important principles of education in this age period, and it is necessary that independent thinking be considered as the core of all educational content (Jin, 2019).

Torrance believes that creativity has four dimensions: fluidity, originality, flexibility and extension. The fluid dimension, which refers to the ability to generate a large number of ideas, is considered the starting point of creativity and helps in achieving originality or novelty. Flexibility also helps children to apply the new ideas they have generated in different situations (Drapo, 2014). The extension dimension also refers to the ability to expand the text by using details and redefining perception differently from previous methods (Hashmi, Vahedi, and Ahrari, 2015). Therefore, with regard to what has been said, the main goal of this research is to investigate the effectiveness of the creativity development program on problem solving skills and creativity in preschool children.

## Method

This research was practical and semi-experimental with a pre-test-post-test design and a control group. The statistical population of the research included all children aged 4 to 6 in Isfahan city in 2021. In order to carry out the research, 30 children were selected by multi-stage cluster sampling method and were equally replaced in two experimental and control groups (15 people in each group). The members of the experimental group participated in the creativity development program during 12 sessions of 60 minutes, while the subjects of the control group did not receive any intervention. Subjects were evaluated using Torrance test of creative thinking (1974) and the London Shalis Tower Test (1982). The data were analyzed using covariance analysis.

## Results

The findings indicated that the creativity development program had a positive and significant effect on problem solving skills and creativity in preschool children ( $P < 0.05$ ).

## Conclusion

The present research was conducted with the aim of investigating the effectiveness of the educational package of creativity development activities on problem solving

skills and creativity. The results of the multivariate covariance analysis indicated that the creativity development program has a significant effect on the problem solving skills and creativity of preschool children; In this way, children showed better performance in problem solving skills and creativity after receiving training related to creativity development program.

Part of the exercises used in the Khilafat development program also specifically referred to the ability to generalize and enable the child to use his information in other environments and to use several solutions in difficult situations. Therefore, it seems that the sum of these factors leads to the improvement of problem solving skills. The creativity development program is effective on the creativity of pre-primary school children, it can be said that the presented program included exercises that increased the children's ability to create ideas and limitlessness and directly promoted the fluidity of creativity. Participating in group activities and using the views and opinions of others were also among the principles that were taken into consideration during the implementation of the creativity development program and could have been effective in the effectiveness of the treatment; Because when the child is exposed to different views and opinions and can combine them with each other, he will present more and richer ideas. Therefore, it seems that the application of all these exercises and principles during several consecutive sessions will improve the level of these components and leave a positive effect on the overall performance of the child in the field of creativity.

Since no research can be free of limitations, the current research also faced limitations. Among these limitations, we can point out the lack of control of all disturbing variables, such as the level of attention and fatigue of the subjects and the small number of subjects present in the research. Therefore, in generalizing and relying on the results of this research, these limitations should be considered. The suggestions of this research are to use larger samples in future studies to generalize the results about the effectiveness of the intervention. In addition, it is suggested that this intervention be used as an effective training course to improve problem solving skills and creativity in educational centers and preschool centers by teachers and trainers.

### **References**

- Beghetto, R. A. (2015). Teaching creative thinking in K12 schools: lingering challenges and new opportunities. In *The Routledge international handbook of research on teaching thinking* (pp. 201-211). Routledge.
- Birdi, K. (2016). Creativity training. In *Human resource management, innovation and performance* (pp. 298-312). Palgrave Macmillan, London.
- Birdi, K. S. (2005). No idea? Evaluating the effectiveness of creativity training. *Journal of European industrial training*, 29(2), 102-111.
- Blanco-Herrera, J. A., Gentile, D. A., & Rokkum, J. N. (2019). Video games can increase creativity, but with caveats. *Creativity Research Journal*, 31(2), 119-131.
- Boroujerdi, M., Asadzadeh, H., Hejazi, M., & Entesar Foumany, G. H. (2020). Effectiveness of Music and Painting Training on Increasing Creativity and Reducing Aggression and in Preschool Pupils in Hamedan city. *Journal of Innovation and Creativity in Human Science*, 10(1), 1-26. (In Persian)

- Bulut, D., Samur, Y., & Cömert, Z. (2022). The effect of educational game design process on students' creativity. *Smart Learning Environments*, 9(1), 1-15.
- Drapeau, P. (2014). *Sparkling student creativity: Practical ways to promote innovative thinking and problem solving*. ASCD.
- Farid Marandi, B., Kakabaraee, K., & Hosseini, S. A. S. (2020). The effect of problem-solving training on social skills of preschool children. *Quarterly Journal of Child Mental Health*, 6(4), 131-143. (In Persian)
- Ghafari, Kh., Sarlak, M., & Vedavudi, H. (2018). Investigating the effect of preschool education on the development of social skills and academic progress of first grade students. *Educational Leadership and Management Quarterly*, 12(3), 181-208.
- Gilak, M., Z. Mohammadi, A., & Bagheri, F. (2013). The relationship of resiliency and self-concent with self-efficacy of handicapped females:the mediating role of creativity. , 9(35), 307-315. (In Persian)
- Goldberg, E. (2018). *Creativity: The human brain in the age of innovation*. New York, NY: Oxford University Press
- Gulistan, K. (2022). Psychological Features of Creativity in Preschool Age. *American Journal of Social and Humanitarian Research*, 3(5), 190-195.
- Hashemi, T., Vahedi, S., & Ahrari, G. (2016). Meta-analysis of Creativity Fostering Techniques. *Journal of Innovation and Creativity in Human Science*, 5(3), 1-32. (In Persian)
- Hassan Moradi, N. (2016). *Textbook content analysis*. Tehran: Aizh Publications. (In Persian)
- Jelvegar, A., Kareshki, H., & Asghari Nekah, M. (2014). The Effect of Self-Regulation Training on Social Problem Solving of Male and Female Preschoolers. *Research in Cognitive and Behavioral Sciences*, 4(1), 155-166. (In Persian)
- Jin, L. (2019, August). Investigation on potential application of artificial intelligence in preschool children's education. In *Journal of Physics: Conference Series* (Vol. 1288, No. 1, p. 012072). IOP Publishing.
- Khamraevna, K. A. (2022). Achievement of development of creative activity of preschool children on the basis of integration of preschool educational content. *Asian Journal of Research in Social Sciences and Humanities*, 12(4), 26-31.
- Kirmizi, F. S., Saygi, C., & Yurdakal, I. H. (2015). Determine the relationship between the disposition of critical thinking and the perception about problem solving skills. *Procedia-Social and Behavioral Sciences*, 191, 657-661.
- Ngang, T. K., Nair, S., & Prachak, B. (2014). Developing instruments to measure thinking skills and problem solving skills among Malaysian primary school pupils. *Procedia-Social and Behavioral Sciences*, 116, 3760-3764.
- Pishyar, A. (2022). *Compilation of the educational package of creativity flourishing activities and its effectiveness on problem solving and creativity of pre-primary school children*. Ph.D. Thesis. Faculty of Educational Sciences and Psychology, University of Tehran, Kish International Campus. (In Persian)
- Raghibi, M., & Khanmohammadzade, Z. (2019). Developing Creativity among 6-Year-Old Children Using a Doodle-Book Training Program. *Journal of Innovation and Creativity in Human Science*, 8(4), 129-152. (In Persian)
- Rahimi Pardanajani, S., & Nejati Far, S. (2022). The effectiveness of free games on the creativity of preschool children. *New Advances in Behavioral Sciences*, 7(55), 176-162. (In Persian)
- Rashidi, A., Abedi, A., & Nejatifar, S. (2021). A Systematic Review and Meta-Analysis of the Effectiveness of Psychological Interventions in Improving Mental Health of Students at Exceptional Talent Schools (SAMPAD) of Iran. *Journal of Assessment and Research in Applied Counseling*, 3(1), 66-87.

- Sakon, T., & Petsangsri, S. (2021). STEAM Education for Enhancing Creativity in Packaging Design. *Archives of Design Research*, 34(1), 21-31.
- Scionti, N., Cavallero, M., Zogmaister, C., & Marzocchi, G. M. (2020). Is cognitive training effective for improving executive functions in preschoolers? A systematic review and meta-analysis. *Frontiers in psychology*, 10, 2812.
- Shoghi, B., & Mostafavi, S. M. (2012). Individual and organizational creativity. Tehran: Raz Nahan. (In Persian)
- Stutesman, M. G., Havens, J., & Goldstein, T. R. (2022). Developing creativity and other 21st century skills through theater classes. *Translational Issues in Psychological Science*, 8(1), 24.
- Sumarni, W., Rumpaka, D. S., Wardani, S., & Sumarti, S. S. (2022). STEM-PBL-Local Culture: Can It Improve Prospective Teachers' Problem-solving and Creative Thinking Skills?. *Journal of Innovation in Educational and Cultural Research*, 3(2), 70-79.
- Torrance, E. P. (1974). Norm-Technical Manual Torrance Test of Creative Thinking, Verbal test, form A and B. *Figural test, form A and B*. Lexington, Massachusetts: Personal Press Inc.
- Turdieva, M. J. (2021). Preschool age is an important time to focus on creativity. *ТЕХНОЛОГІЇ, ІНСТРУМЕНТИ ТА СТРАТЕГІЇ РЕАЛІЗАЦІЇ НАУКОВИХ ДОСЛІДЖЕНЬ*, 70.
- Ülger, K. (2016). A comparison study for thinking skills of higher education students in terms of visual arts education. *Mustafa Kemal Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 13(36).
- van Gog, T., Hoogerheide, V., & van Harsel, M. (2020). The role of mental effort in fostering self-regulated learning with problem-solving tasks. *Educational Psychology Review*, 32(4), 1055-1072.
- Zhang, A., Park, S., Sullivan, J. E., & Jing, S. (2018). The effectiveness of problem-solving therapy for primary care patients' depressive and/or anxiety disorders: A systematic review and meta-analysis. *The Journal of the American Board of Family Medicine*, 31(1), 139-150.
- Zhou, K. (2018). What cognitive neuroscience tells us about creativity education: A literature review. *Global Education Review*, 5(1), 20-34.