

The Effectiveness of Game-Based Learning to Enhance Students' Creativity: Literature Review

Mohammad Kharisma Ferismanda¹; Abdul Muhid²

¹Master's Student in Psychology, University of 17 Agustus 1945 Surabaya, Indonesia

²Lecturer in UIN Sunan Ampel Surabaya, Indonesia

Publication Date: 2025/05/30

Abstract: This research aims to evaluate the effectiveness of game-based learning in increasing creativity in early childhood. Creativity, which includes the ability to generate new ideas, develop imagination, and find innovative solutions, is an important aspect of child development. Literature shows that game-based learning can stimulate creativity through social interaction, exploration, movement coordination, and problem solving. The literature review method was used in this research to analyze various studies on the use of games in learning. Data was collected from online databases such as Science Direct, Springer, Wiley, and Google Scholar for the year 2022-2024. The research results show that game-based learning has a positive impact on children's motoric, cognitive, creative and socio-emotional development. Playing not only provides a stimulus that sharpens creativity but also helps children in the process of creative thinking and problem solving. In conclusion, game-based learning is an effective method for increasing the creativity of young children.

Keywords: Creativity; Learning media; Play; Children.

How to Cite: Mohammad Kharisma Ferismanda; Abdul Muhid (2025) The Effectiveness of Game-Based Learning to Enhance Students' Creativity: Literature Review. *International Journal of Innovative Science and Research Technology*, 10(5), 2380-2384. <https://doi.org/10.38124/ijisrt/25may1665>

I. INTRODUCTION

Children's ability to produce something new, either in the form of work or ideas, is one of the parts of the creativity process (Rapiatunnisa, 2022). Žarnauskaitė (2023) added that creativity is an innovation that has a positive impact and produces change. Creativity is an important aspect in early childhood development (Hurlock, 1991) and has been defined in various literatures (Oppert et al., 2023; Pires & Varajão, 2024). Creativity can be developed in various ways, both by parents and teachers (Devi, 2023).

In some cases, creativity can also be developed through play (Hammershøj, 2022; Russ & Lebudá, 2022). One way to increase creativity is through a play-based learning process because this activity is very popular with children. Most of the child's time is spent playing, and this indirectly has a significant influence on their development (Wiwik Pratiwi, 2017). Percy-Smith & Carney (2011) stated that playing is a flexible, active and positive activity. In playing, children do activities without coercion or pressure from outside parties (Hurlock, 1991), and this can provide a feeling of joy (Huizinga, 1955). Various stimuli received by children from the playing process can have positive impacts such as influencing physical development, stimulating creativity, and improving social skills (Wiwik Pratiwi, 2017).

A study that explores the playing process allows researchers to want to get a value from the learning environment that applies it. So researchers want to study more deeply about the patterns and concepts of play in the literature review process (Fardilha & Allen, 2020; Oppert et al., 2023; Pires & Varajão, 2024). This study aims to provide an overview of whether a play concept can increase creativity in children.

II. METHOD

This study uses a literature review analysis on the use of play in learning to increase creativity in early childhood. Literature review is a study methodology that involves searching for data from various sources to identify research results and provide objective and theoretical discussion materials on a particular topic or theme (Hadi & Afandi, 2021; Knopf, 2009; Rother, 2007).

The first stage in planning a literature review is preparation for selecting appropriate keywords and choosing the type of application to be used (Knopf, 2009). The plan for selecting the keywords for this review is "creativity in centered learning", using special software or applications to search for and analyze data.

The second stage begins with determining the type of research to be conducted, namely a literature review as stated by (Knopf, 2009). The paper used for this study consists of a collection of articles from various online databases such as Science Direct, Springer, Wiley, and Google Scholar, most of which are journal articles.

For database searches, researchers use the "Publish or Perish" application which allows the use of sources from Google Scholar and Science Direct. This approach facilitates the collection of relevant articles for the literature

review analysis on creativity in play-based learning for early childhood.

After conducting a search using "Publish or Perish" from Google Scholar and Science Direct for the period 2022-2024, 198 articles were found that were relevant to the theme of creativity. Furthermore, the articles were filtered based on their abstracts, and 12 articles were selected whose titles and abstracts were then read in their entirety.

Table 1 Meta-Anaysis Matrix of References

Article Title	Author	Journal
Meningkatkan Kreativitas Anak Usia Dini Melalui Metode Bermain Peran	Rapiatunnisa, R.	Mitra-Ash Shibyan: Jurnal Pendidikan dan Konseling
Implementasi Model Pembelajaran BCCT Meningkatkan Kemandirian dan Kreativitas Anak Didik Usia 5–6 Tahun di PAUD	Dau, M. P., & Santosa, S.	<i>EDULEAD: Journal of Christian Education and Leadership</i>
Implementasi Metode Sentra untuk Kreativitas Anak Usia Dini di TK An Nahl Islamic School	Syifa, H. F. A., & Kasih, D.	<i>Jurnal Pendidikan Tambusai</i>
Pembelajaran sentra Pembelajaran Sentra dalam Mengembangkan Kreaktivitas aUD di TK Karya Bunda Mandiri.	Devi, D. K. T.	<i>PERNIK: Jurnal Pendidikan Anak Usia Dini</i>
Conceptualisation and implementation of play-based curriculum and pedagogy in early childhood education in preschools in Oromia Regional State, Ethiopia	Geletu, G. M.	<i>International Journal of Primary, Elementary and Early Years Education</i>
Urban Plaza as a School for Children: A Decision Support Tool for the Design of Children Inclusive Urban Plaza	Shafaghat, A., Keyvanfar, A., & Rosli, N. A. L. (.	<i>Architecture and Urban Planning</i>
Developing Early Childhood Creativity through Used Goods at Bina Balita Islamic Kindergarten Bandar Lampung.	Fitriyani, S., Muslim, A. B., Romlah, R., Meriyanti, M., & Kiswanto, A. V.	<i>E3S Web of Conferences</i>
Enhancing Preschoolers' Creativity through Creative Play-STEAM Activities in Malaysia. Asia-Pacific	Tee, Y. Q.	<i>Journal of Research in Early Childhood Education</i>
Being with a puppet: literacy through experiencing puppetry and drama with young children.	Karaolis, O.	<i>Education Sciences</i>
How does play in the outdoors afford opportunities for schema development in young children?	Boulton, P., & Thomas, A. (2022).	<i>International Journal of Play</i>
Developing children's creativity and social-emotional competencies through play: Summary of twenty years of findings of the evidence-based interventions "game program".	Garaigordobil, M., Berruoco, L., & Celume, M. P.	<i>Journal of Intelligence</i>
Instructing children to construct ideas into products alters children's creative idea selection in a randomized field experiment.	van Broekhoven, K., Belfi, B., & Borghans, L.	<i>Plos one</i>

Table 2 Paper Based on Theme, Finding or Variables

Theme/ Variabel	Author	Articel Title
The Influence of Role Playing to Increase Creativity	Rapiatunnisa, R. (2022)	Meningkatkan Kreativitas Anak Usia Dini Melalui Metode Bermain Peran
	Karaolis, O. (2023).	<i>Being with a puppet: literacy through experiencing puppetry and drama with young children.</i>
Development of BCCT (Beyond Circle and Center Time) Curriculum Towards Increasing Creativity	Syifa, H. F. A., & Kasih, D. (2023).	Implementasi Metode Sentra untuk Kreativitas Anak Usia Dini di TK An Nahl Islamic School
	Dau, M. P., & Santosa, S. (2023).	Implementasi Model Pembelajaran BCCT Meningkatkan Kemandirian dan Kreativitas Anak Didik Usia 5–6 Tahun di PAUD
The influence of play-based learning to increase creativity	Geletu, G. M. (2023).	<i>Conceptualisation and implementation of play-based curriculum and pedagogy in early childhood education in preschools in Oromia Regional State, Ethiopia</i>
	Shafaghat, A., Keyvanfar, A., & Rosli, N. A. L. (2023).	<i>Urban Plaza as a School for Children: A Decision Support Tool for the Design of Children Inclusive Urban Plaza</i>
	Boulton, P., & Thomas, A. (2022).	<i>How does play in the outdoors afford opportunities for schema development in young children?</i>
	Garaigordobil, M., Berruero, L., & Celume, M. P. (2022).	<i>Developing children's creativity and social-emotional competencies through play: Summary of twenty years of findings of the evidence-based interventions "game program".</i>
Learning with goods media	Fitriyani, S., Muslim, A. B., Romlah, R., Meriyanti, M., & Kiswanto, A. V. (2024).	<i>Developing Early Childhood Creativity through Used Goods at Bina Balita Islamic Kindergarten Bandar Lampung.</i>
	van Broekhoven, K., Belfi, B., & Borghans, L. (2022).	<i>Instructing children to construct ideas into products alters children's creative idea selection in a randomized field experiment.</i>
Play Collage Making	Devi, D. K. T. (2023).	Pembelajaran sentra Pembelajaran Sentra dalam Mengembangkan Kreaktivitas aUD di TK Karya Bunda Mandiri. <i>PERNIK</i> ,
Steam play	Tee, Y. Q. (2022).	<i>Enhancing Preschoolers' Creativity through Creative Play-STEAM Activities in Malaysia. Asia-Pacific</i>

III. DISCUSSION

A Creativity

The definition of creativity found in the literature review process is according to Yulia in Rapiatunnisa (2022), creativity is a child's ability to create something new. Devi (2023) added that creativity is the ability to develop imagination naturally without plagiarizing. Fitriyani et al. (2024) view creativity as the ability to think about something in a new and unexpected way, which results in innovative solutions to challenges. Thus, creativity in this context includes the ability to generate new ideas, develop imagination without plagiarizing, and find innovative solutions to problems or challenges faced.

According to Dau & Santosa (2023) creativity can be characterized by curiosity and openness to new experiences that have never been experienced before. tend to have determination, and think fluently, flexibly, originally, dynamically. In achieving creativity, Wallas in Sadler-Smith (2015) proposed four steps in the creative process, namely the first is preparation, this stage includes collecting information or data, the second is incubation, the problem-solving stage in the thinking process, the third is illumination, the stage where inspiration and ideas are revealed which can help in the problem-solving process, and the last is the verification stage, which is the stage for releasing it into real life.

B. Game-Based Learning

In the process of increasing creativity, play-based learning is one part of the process (Garaigordobil et al., 2022). When playing, children are able to interact with friends, explore objects, sing, coordinate movements, tell stories, and even solve problems. According to Budiartati (2007) there are at least four important things in a play learning program, namely 1) clarification of the role and idea to see children develop cognitively (Aziz et al., 2024; Putri & Harfiani, 2024), 2) use of materials that can improve fine and gross motor skills (Gunawan et al., 2016; Rohmatillah & Safitri, 2024), 3) Socializing with friends by seeing other people's perspectives (Rahayu & Munajat, 2024), and 4) development of socio-emotional in order to control thoughts and feelings (Amalia et al., 2024; Ariani & Azhari, 2024).

Types of play can be categorized into two based on the literature described: 1) Active play, namely children doing movement activities that involve all their senses and all their body parts. This includes many active and physical movements of the child's body, 2) Passive Play, namely play activities that do not involve many movements of the child's body, but focus more on the use of some senses such as hearing and sight (Hurlock, 1978). Meanwhile, according to the theory of Stack & Nikiforidou (2021), there are two different types of play, namely 1) Outdoor, namely games played outdoors where children can move freely, play, design, investigate, build, and express their ideas. Outdoor learning is considered important because it provides a natural environment for learning through experience (Kiviranta et al., 2024; Stack & Nikiforidou, 2021), 2) Indoor, namely games played indoors which are considered safer than playing outdoors according to Stack & Nikiforidou (2021).

C. Effectiveness of Learning to Improve Student Creativity

Play-based learning cannot be separated from the process of child growth and development (Jaruchainiwat et al., 2024). Many schools have implemented such learning media (Devi, 2023), they believe that in the process of playing children get stimuli that can help them. Whether it is in terms of motoric, cognitive or creativity (Dau & Santosa, 2023).

In their research, Syifa & Kasih (2023) argue that playing can have a positive impact on children. Playing has high potential to provide a meaningful learning process, hone creativity through the games they play, and provide knowledge and experience to children (Boulton & Thomas, 2022). This always requires thinking to solve problems so that their creativity is increasingly honed (Ferreira et al., 2024).

Other studies state that in learning programs, playing, especially role playing (Wiwik, 2017). Children will play by pretending which is imaginative or drama play which is very important for the process of cognitive development (Putri & Harfiani, 2024), social (Rahayu et al., 2024), and emotional (Amalia et al., 2024).

IV. CONCLUSION & SUGGESTION

A. Conclusion

Children's creativity is the ability to generate new ideas, develop imagination, and think of innovative solutions to challenges. Play-based learning is an effective method to enhance children's creativity. Through play, children can interact, explore, sing, move, tell stories, and solve problems. Play-based learning programs include clarifying roles and ideas, using materials to improve motor skills, socializing, and socio-emotional development. Play-based learning has a positive impact on children's motor, cognitive, and creative development. Playing helps children get stimuli that hone creativity, solve problems, and provide meaningful learning experiences.

B. Suggestion

More research is needed to see to what extent play-based learning can be designed to enhance creativity in early childhood. This can be a reference for other researchers to find the advantages and disadvantages of play-based learning in its use.

REFERENCES

- [1]. Amalia, R., Sa'idah, A. Y. N., & Alim, M. L. (2024). Pelatihan Terapi Bermain Peran Dengan Kearifan Budaya Batobo Dalam Peningkatan Perkembangan Sosial Emosional Pada Anak Usia Dini Di Kabupaten Kampar. *Jurnal Pengabdian Pendidikan dan Teknologi Masyarakat*, 2(2), 103–108.
- [2]. Ariani, R., & Azhari, H. (2024). Penerapan Permainan Petak Umpet Dalam Meningkatkan Kemampuan Sosial Emosional Pada Anak Kelompok B2 PAUD Al Fajar Palabuhanratu. 1(1), 14–24.
- [3]. Aziz, M., Napitupulu, D. S., & Masdawati, M. (2024). Permainan Engklek Inovatif: Meningkatkan Kemampuan Kognitif Anak TK dalam Pendidikan Islam. *Jurnal Riset dan Inovasi Pembelajaran*, 4(1), 124–133. <https://doi.org/10.51574/jrip.v4i1.1318>
- [4]. Boulton, P., & Thomas, A. (2022). How does play in the outdoors afford opportunities for schema development in young children? *International Journal of Play*, 11(2), 184–201. <https://doi.org/10.1080/21594937.2022.2069348>
- [5]. Budiartati, E. (2007). Pembelajaran Melalui Bermain Berbasis Kecerdasan Jamak Pada Anak Usia Dini. *Lembaran Ilmu Kependidikan Journal of Educational Research*, 36(2), 99.
- [6]. Dau, M. P., & Santosa, S. (2023). Implementasi Model Pembelajaran BCCT Meningkatkan Kemandirian dan Kreativitas Anak Didik Usia 5 – 6 Tahun di PAUD. *EDULEAD: Journal of Christian Education and Leadership*, 4(1), 51–65. <https://doi.org/10.47530/edulead.v4i1.146>
- [7]. Devi, D. K. T. (2023). Pembelajaran Sentra dalam Mengembangkan Kreaktivitas aUD di TK Karya Bunda Mandiri. *Pernik*, 6(1), 33–40. <https://doi.org/10.31851/pernik.v6i1.11823>

- [8]. Elizabeth B. Hurlock. (1978). *Perkembangan Anak jilid 1*. Erlangga.
- [9]. Fardilha, F. de S., & Allen, J. B. (2020). Defining, assessing, and developing creativity in sport: a systematic narrative review. *International Review of Sport and Exercise Psychology*, 13(1), 104–127. <https://doi.org/10.1080/1750984X.2019.1616315>
- [10]. Ferreira, C., Robertson, J., Pitt, L., & Lord Ferguson, S. (2024). Unlocking Student Creativity With Lego® Serious Play: a Case Study From the Graduate Marketing Classroom. *Marketing Education Review*, 34(2), 153–163. <https://doi.org/10.1080/10528008.2024.2337926>
- [11]. Fitriyani, S., Muslim, A. B., Romlah, R., Meriyanti, & Kiswanto, A. V. (2024). Developing Early Childhood Creativity through Used Goods at Bina Balita Islamic Kindergarten Bandar Lampung. *E3S Web of Conferences*, 482, 1–9. <https://doi.org/10.1051/e3sconf/202448204010>
- [12]. Garaigordobil, M., Berrueto, L., & Celume, M. P. (2022). Developing Children's Creativity and Social-Emotional Competencies through Play: Summary of Twenty Years of Findings of the Evidence-Based Interventions "Game Program." *Journal of Intelligence*, 10(4).
- [13]. Gunawan, G., Masna, M., Suwika, I. P., & Imamah, Z. (2016). Upaya Meningkatkan Perkembangan Motorik Kasar Anak Prasekolah melalui Permainan Lempar Tangkap Bola Kecil. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, 8(2), 245–254. <https://doi.org/10.31004/obsesi.v8i2.5393>
- [14]. Hadi, N. F., & Afandi, N. K. (2021). Literature Review is A Part of Research. *Sultra Educational Journal*, 1(3), 64–71. <https://doi.org/10.54297/seduj.v1i3.203>
- [15]. Hammershøj, L. G. (2022). Play attitude and moods of play: a design-based inquiry into the affective nature and importance of play. *International Journal of Play*, 11(3), 327–345. <https://doi.org/10.1080/21594937.2022.2101276>
- [16]. Huizinga, J. (1955). *Homo Ludens: A study of the play-element in culture*. Beacon Press.
- [17]. Hurlock, E. B. (1991). Psikologi Perkembangan (Terjemahan). In *Jakarta: Erlangga*.
- [18]. Jaruchainiwat, P., Khayankij, S., Hemchayart, W., & Tamrongath, U. (2024). Promoting young children's creative thinking, social skills, and attention using guided play and loose parts. *Kasetsart Journal of Social Sciences*, 45(1), 121–128. <https://doi.org/10.34044/j.kjss.2024.45.1.13>
- [19]. Kiviranta, L., Lindfors, E., Rönkkö, M. L., & Luukka, E. (2024). Outdoor learning in early childhood education: exploring benefits and challenges. *Educational Research*, 66(1), 102–119. <https://doi.org/10.1080/00131881.2023.2285762>
- [20]. Knopf, J. (2009). Doing a Literature Review. *University of Leicester*, 127–132.
- [21]. Oppert, M. L., O'Keeffe, V., Bensnes, M. S., Grecu, A. L., & Cropley, D. H. (2023). The value of creativity: A scoping review. *Journal of Creativity*, 33(2). <https://doi.org/10.1016/j.yjoc.2023.100059>
- [22]. Percy-Smith, B., & Carney, C. (2011). Using art installations as action research to engage children and communities in evaluating and redesigning city centre spaces. *Educational Action Research*, 19(1), 23–39. <https://doi.org/10.1080/09650792.2011.547406>
- [23]. Pires, L., & Varajão, J. (2024). Creativity as a topic in project management – A scoping review and directions for research. *Thinking Skills and Creativity*, 51(February). <https://doi.org/10.1016/j.tsc.2024.101477>
- [24]. Putri, H., & Harfiani, R. (2024). Meningkatkan Kemampuan Kognitif melalui Alat Permainan Edukatif Kereta Api Pintar pada Anak. *Murhum: Jurnal Pendidikan Anak Usia Dini*, 5(1), 191–202. <https://doi.org/10.37985/murhum.v5i1.512>
- [25]. Rahayu, S., Hurri, I., & Munajat, A. (2024). MENINGKATKAN KETERAMPILAN SOSIAL MELALUI METODE BERMAIN PERAN PADA ANAK USIA DINI KELOMPOK A USIA 4-5 TAHUN DI PAUD SPS MELATI 1 GUNUNGBATU KECAMATAN CIRACAP. *EDUCATIONAL JOURNAL: General and Specific Research*, 4(1), 130–138.
- [26]. Rapiatunnisa, R. (2022). Meningkatkan Kreativitas Anak Usia Dini Melalui Metode Bermain Peran. *Mitra Ash-Shibyan: Jurnal Pendidikan dan Konseling*, 5(01), 17–26. <https://doi.org/10.46963/mash.v5i01.423>
- [27]. Rohmatillah, S., & Safitri, A. (2024). Melatih Kemampuan Motorik Halus Anak Melalui Permainan Balok. *Cendikia: Jurnal Pendidikan dan Pengajaran*, 2(5), 29–35. <https://doi.org/10.1206/29-35>
- [28]. Rother, E. T. (2007). Systematic literature review X narrative review. *ACTA Paulista de Enfermagem*, 20(2), 7–8. <https://doi.org/10.1590/s0103-21002007000200001>
- [29]. Russ, S., & Lebeda, I. (2022). Can we Help Children Develop Creative Potential through Pretend Play? Interview with Sandra Russ. *Creativity*, 9(1), 146–150. <https://doi.org/10.2478/ctra-2022-0008>
- [30]. Sadler-Smith, E. (2015). Wallas' four-stage model: More than meets the eye? *Creativity Research Journal*, 27(4), 342–352. <http://www.spartacus.schoolnet.co.uk/TUwallas.htm>
- [31]. Stack, J., & Nikiforidou, Z. (2021). Preschoolers' possession-based disputes during indoor and outdoor play. *Early Child Development and Care*, 191(6), 847–860. <https://doi.org/10.1080/03004430.2019.1649667>
- [32]. Syifa, H. F. A., & Kasih, D. (2023). Implementasi Metode Sentra untuk Kreativitas Anak Usia Dini di TK An Nahl Islamic School. *Jurnal Pendidikan Tambusai*, 7(3), 22021–22025.
- [33]. Wiwik Pratiwi. (2017). Konsep Bermain Pada Anak Usia Dini. *Manajemen Pendidikan Islam*, 5, 106–117.
- [34]. Žarnauskaitė, M. (2023). Young children's creativity education in the context of Lithuania: A systematic review. *Thinking Skills and Creativity*, 48. <https://doi.org/10.1016/j.tsc.2023.101310>