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Developing Creative Thinking in Preschool Children: A Comprehensive Review of Innovative

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Abstract: The ability to think creatively has a vital role in the development of preschool children. This research provides a comprehensive review of innovative approaches and strategies for developing creative thinking in preschool children based on current trends and methodologies used in educational settings. This research shows three significant areas: (a) creative thinking skills in preschool children, (b) factors influencing creative thinking skills in depth, and (c) innovative strategies and approaches to stimulate creative thinking abilities in preschool children. This research uses a literature study method assisted by the publish or perish application to find reference sources related to creative thinking abilities in preschool children. Studies show that creative thinking abilities in preschool children enable them to find innovative solutions, help them adapt to challenges, foster self-confidence and courage, and enrich their experience and knowledge of the world around them. Meanwhile, preschool children's creative thinking abilities are influenced by collaboration from the external environment (parents, teachers, and society); providing support and examples for children to develop and stimulate their creative thinking skills is very important.

Keywords: *Comprehensive review, creative thinking, early childhood.*

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Introduction

Previous studies in education acknowledge that creative thinking is a fundamental and critical skill in life. It serves as a factor in solving both simple and complex problems on an individual, group, and global scale. The evolution towards the era of the 5.0 revolution demands individuals of all ages, including preschool children, to possess creative thinking skills. In a continuously changing and increasingly complex world, creative thinking enables individuals to tackle unprecedented challenges, discover innovative solutions, and adapt rapidly to change (Suharyat et al., 2023).

Creative thinking skills in preschool children are a crucial aspect of their development. The rapidly evolving and complex nature of the 5.0 revolution emphasizes the significance of creative thinking as an essential skill, equipping individuals for personal and professional success. Creative thinking affects a child's cognitive development and shapes their personality and independence (Dilshod, 2019). Therefore, educators, parents, and the environment must explore ways to stimulate and nurture creative thinking in preschool children.

Creative thinking generates new ideas and innovative solutions and perceives problems differently. It entails the capacity to view things in a new and original light, utilizing non-traditional approaches to problem-solving (Dere, 2019), and creating something unique. Creative thinking in preschool children is closely intertwined with their imaginative abilities, self-expression, and creativity. Its impact extends beyond cognitive development, assisting children in overcoming challenges, enhancing self-confidence, and fostering social skills (Pan et al., 2023; Zhao & Yang, 2021). Furthermore, creative thinking skills can also cultivate a child's critical thinking abilities, pursue personal interests, and establish healthy social relationships (Sochacka et al., 2016).

In Ecological Theory, Bronfenbrenner emphasizes the importance of various environmental layers that influence children's development, such as family, school, peers, and society, that will shape individual behavior (Egresitz, 2020; Guy-Evans, 2020). This theory emphasizes that the interaction between children and the surrounding environment also

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affects children's development, including creative thinking skills. Interactions carried out by the environment with children, if carried out continuously, will significantly affect the development of children, including children's creative thinking skills, so that children can achieve optimal development of creative thinking skills. Children who grow up in an environment that facilitates their creativity in facilities, infrastructure, and activities in various innovative ways have a more significant opportunity to stimulate and develop creative thinking skills in early childhood (Yang & Sanborn, 2021). Early childhood creative thinking opportunities can also contribute positively to their overall development.

The fact in the field indicates a need for more awareness among educators and parents regarding the significance of stimulating creative thinking skills in preschool children. Parents often lack an understanding of the importance of creative thinking in early childhood and how to promote it (Yıldız & Aral, 2022). In school settings, another issue concerning the development of creative thinking in preschool children lies in the overly structured curriculum, which predominantly focuses on teacher-directed activities rather than methods conducive to stimulating and nurturing creative thinking in preschool children (Avdeenko, 2021). Moreover, limited access to creative educational resources such as creative books, toys, and libraries is a significant challenge, especially in rural schools (İnal Kiziltepe et al., 2017).

Research conducted in China has revealed a need for more understanding among teachers regarding fostering creative thinking skills in preschool children. This is attributed to the need for more specialized training and support for teachers in integrating innovative methods and approaches in 21st-century early childhood education (Twiner et al., 2022). Insufficient government support for educators and students in creative education and the arts is identified as a hindrance to developing creative thinking skills in preschool children (Alper & Ulutaş, 2022). Furthermore, European research has highlighted how an overly focused evaluation system on standardized tests can impede efforts to stimulate creative thinking skills (Barnett & Jung, 2020).

Research in Australia discusses how excessive use of technology, particularly among preschool children, can impede the development of creative thinking when used without proper control (Dilshod, 2019). Research in Turkey indicates the existence of uncertainties in finding suitable educational methods to foster critical thinking skills in children aged 5 to 6 years, primarily due to the limited research available on developing creative thinking skills in early childhood (Polat, 2021). In addition to problems that come from outside the child related to obstacles to the development of creative thinking skills, the issue of developing creative thinking skills in early childhood is also influenced by the thinking process of each child and the differences in creative thinking abilities between boys and girls. The problems that occur are significant for governments, educational institutions, and parents to work together to support the development of creative thinking skills in early childhood.

This research aims to bridge existing gaps in the literature and provide a comprehensive overview of creative thinking skills in preschool children. Additionally, this article offers detailed insights into the definition of creative thinking skills, the factors influencing creative thinking, and strategies for nurturing creative thinking skills. These findings guide teachers, schools, and parents and assist educational practitioners in cultivating and encouraging creative thinking skills in preschool children.



Figure 1. Developing Creative Thinking in Preschool Children Navigation Diagram

The picture above illustrates the research navigation that researchers will carry out. The discussion comprises creative thinking ability, creative thinking factors, practice, and learning.

Methodology

Research Design

This study utilized a systematic literature review method involving the identification, assessment, and interpretation of all available research to provide answers to the research questions (Galvan & Galvan, 2017). Data were collected by searching for references through books, journals, and proceedings. Data were subsequently selected through quality assessment by eligibility criteria, quality assessment instruments, data synthesis, and data extraction.

Sample and Data Collection

The reviewed literature were scientific articles indexed by Scopus with the keywords creative thinking skill in early childhood. Researchers opted for Scopus-indexed pieces due to their high credibility and alignment with international article standards. Literature was acquired through the Publish or Perish application, which aids researchers in analyzing and evaluating previously published articles relevant to the research theme. Publish or Perish aggregates publicly available data from Google Scholar, Crossref, PubMed, OpenAlex, Scopus, Semantic Scholar, and Web of Science. It calculates the number of publications by a researcher, their h-index (hierarchy index), and i10-index (citation index).

The h-index measures a researcher's effectiveness, the number of publications they have, and the number of citations received for those publications. The i10-index measures the effectiveness of the number of publications from a researcher who has received at least ten citations. The researcher's process for searching for reference sources using the Publish or Perish application was as follows:

1. Opening the Publish or Perish application.
2. Selecting the journal search location, which is Scopus.
3. Entering the journal keyword, "creative thinking skill in preschool."
4. Setting the search year range from 2014 to 2023.
5. Click OK, and the search results for the required journal references appear.

The keywords used in the application were "creative thinking in preschool." The application found 121 relevant articles with these keywords. Figure 2 illustrates the reference search using the Publish or Perish application.

Cites	Per year	Rank	Authors	Title	Year	Publication	Publisher	Type
1	1.00	69	T. Sakka	Children's Rights Education via Ga...	2023	International Journal of Ser...		Article
1	1.00	72	M. Aksoy	An investigation on the effects of ...	2023	Early Child Development a...		Article
0	0.00	87	A. Kasirer	Perceptions of mathematical creati...	2023	Thinking Skills and Creativity		Article
0	0.00	88	O. Gaki	Computational thinking and probl...	2023	Research on E-Learning an...		Book Ch
0	0.00	89	Ş. Kavak	The impact of the creative leaders...	2023	Early Child Development a...		Article
0	0.00	90	A. Belolutskaya	The Connection of the Digital Lear...	2023	Education and Self Develo...		Article
0	0.00	91	I.R. Berson	Intelligence Augmentation in Early ...	2023	Communications in Comp...		Confere
0	0.00	92	Q. Cai	The Role of the Art of Chinese Call...	2023	Journal of Psycholinguistic ...		Article
0	0.00	93	E.L. Perchenko	Digital Technologies in Career Guid...	2023	Lecture Notes in Networks ...		Book Ch
0	0.00	96	A. Tahiri	INTERDISCIPLINARY PROJECTS, F...	2023	Journal of Hygienic Engine...		Article
h 31	31.00	3	Z. Xiong	The influence of digital educationa...	2022	Computers and Education		Article
3	3.00	51	I.T. Alper	The impact of creative movement ...	2022	Thinking Skills and Creativity		Article
3	3.00	52	X. Li	Application of Wireless Network B...	2022	Mathematical Problems in ...		Retract
1	1.00	70	O.A. Shivan	Children's Narratives as a Space fo...	2022	Cultural-Historical Psychol...		Article

Figure 2. References Search Using Publish or Perish

Below is the PRISMA flow chart created by the researcher. This diagram is prepared to show the clarity of the research conducted by researchers related to data collection conducted by researchers.

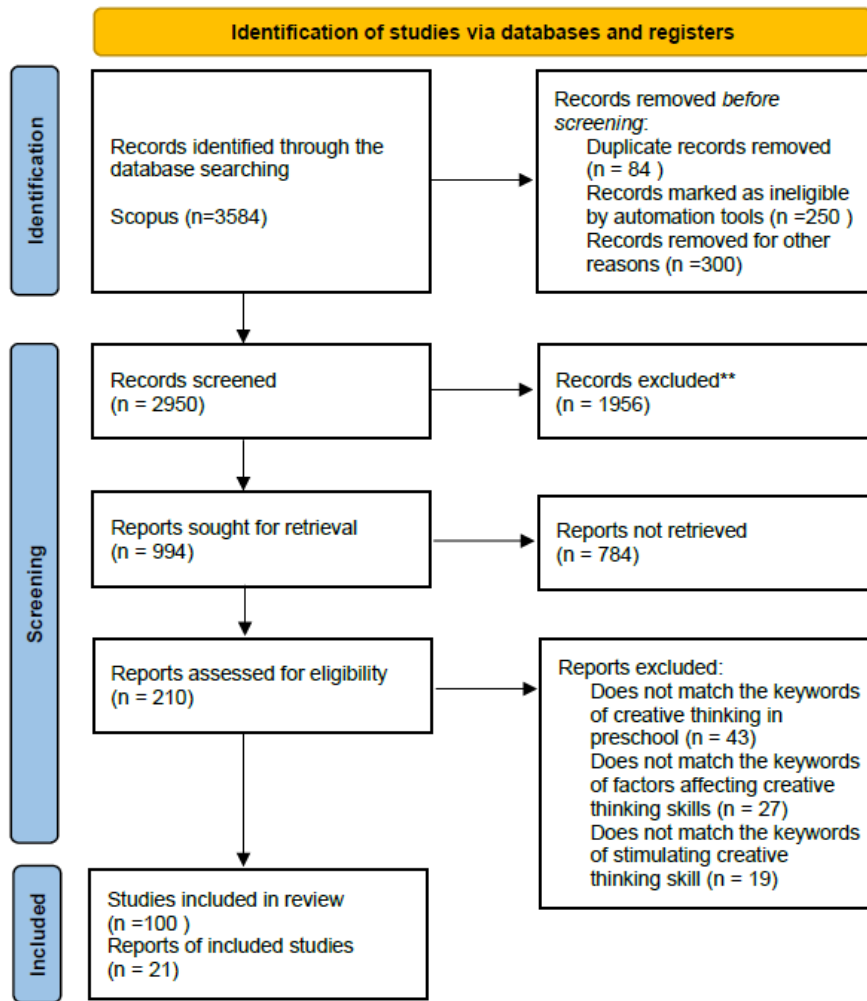


Figure 3. PRISMA Flow Chart to Illustrate the Article Screening Process

Analyzing of Data

Data analysis was carried out using the narrative analysis method, which involves in-depth data collection from the literature analyzed and compiled by the researcher as a narrative. The first step taken by the researcher was to collect data by searching articles with the Publish or Perish application related to creative thinking skills at the preschool level. Next, the researcher grouped the articles based on keyword categories. Data mapping was then carried out by the researcher by reading and interpreting the article and then reviewing and analyzing the article in depth in the form of coding. The analysis results will then be explained in each sub-topic of the definition of creative thinking skills, creative thinking factors, and strategies to foster creative thinking skills. At the end of the study, the researcher compared the findings presented in the article and then concluded.

Findings/Results

Creative thinking skill refers to an individual's capacity to generate new, original, innovative ideas that are relevant to their context. It also involves imagining, exploring, and interacting with the social and physical environment. Based on the search results, a total of 121 articles published between 2014 and 2023 were identified.

Table 1. Search Results for Articles Related to Creative Thinking Skills in Early Childhood

No.	Keywords:	Types	Year	Total	References
1.	Preschool creative thinking skill	Journal and Proceeding	2014	2	(Alsrouf & Al-Ali, 2014; Chou, 2014)
			2015	1	(Nacher & Jaen, 2015)
			2016	2	(del Moral Pérez et al., 2016; Diener et al., 2016)
			2017	3	(Broström, 2017; del Moral Pérez et al., 2017; İnal Kiziltepe et al., 2017)

Table 1. Continued

No.	Keywords:	Types	Year	Total	References
			2018	5	(Bayanova & Chulyukin, 2018; Cheung, 2018; del Moral Pérez et al., 2018; Rajabi et al., 2018; von Steinbüchel et al., 2018)
			2019	6	(Akimova, 2019; Dere, 2019; Eckhoff, 2019; Frith et al., 2019; Rojas-Ortiz et al., 2019; Stojanović et al., 2019)
			2020	11	(Abitova et al., 2020; Acker, 2020; Artemyeva, 2020; Bai et al., 2020; Behnamnia, Kamsin, Ismail & Hayati, 2020; Gryazeva-Dobshinskaya et al., 2020; Güneş & Şahin, 2020; Karaca et al., 2020a; Lines et al., 2020; Valovičová & Sollárová, 2020; Yin et al., 2020)
			2021	7	(Çakır et al., 2021; Evans et al., 2021; Polat, 2021; Salmon & Barrera, 2021; Thomaidou et al., 2021; Veraksa et al., 2021; Yildiz & Guler Yildiz, 2021)
			2022	4	(Alper & Ulutaş, 2022; Çetin & Ata, 2022; Shiyan & Baranova, 2022; Veraksa et al., 2022)
			2023	3	(Kavak & Akyürek, 2023; Sakka & Gouscos, 2023; Tahiri et al., 2023)
2.	Factors Affecting Creative Thinking Skill	Journal and Proceeding	2014	1	(Reid et al., 2014)
			2015	1	(Gizir & Koksall Akyol, 2015)
			2016	4	(Fehr & Russ, 2016; Rashchikulina et al., 2016; Schkolyar, 2016; Ülger, 2016)
			2017	3	(Baikulova et al., 2017; Karabulut & Oral, 2017; Pishchik & Molokhina, 2017)
			2018	3	(Bagherpour & Shamshiri, 2018; Cutcher & Boyd, 2018; Milić et al., 2018)
			2019	3	(Avsec & Sajdera, 2019; Barraza et al., 2019; Rojas-Ortiz et al., 2019)
			2020	7	(Çiftci & Bildiren, 2020; Piya-Amornphan et al., 2020; Tikhomirova et al., 2020; Uszyńska-Jarmoc & Kunat, 2019; Wei & Lee, 2020; Zdanevych et al., 2020)
			2021	3	(Urban & Urban, 2021; Üret & Ceylan, 2021; J. Wang et al., 2021)
			2022	6	(Cheng et al., 2022; Gui & Suh, 2022; Lähdesmäki, 2022; Tsompanaki & Magos, 2022; Veraksa et al., 2022; Xiong et al., 2022)
			2023	3	(Aksoy & Belgin Aksoy, 2023; Belolutskaya et al., 2023; Kasirer & Rozen, 2023)
3.	Stimulating creative thinking skill	Journal and Proceeding	2014	1	(Ju, 2014)
			2015	4	(Aerila & Rönkkö, 2015; Gozen, 2015; McFadden et al., 2015; Vignoli & D'Onghia, 2015)
			2016	3	(Akar Gençer & Akman, 2016; Hernández & Serrano Selva, 2016; Öztürk & Olgan, 2016)
			2017	6	(Baisheva et al., 2017; Batenova et al., 2017; Chew & Eau, 2017; Dai & Cheng, 2017; Heljakka & Ihamäki, 2017; Jónsdóttir, 2017)
			2018	2	(Gulliver & Lemack, 2018; Imaroonrak et al., 2018)
			2019	6	(Dilshod, 2019; Ernst & Burcak, 2019; Havryliuk et al., 2019; Hinterplattner et al., 2019; Vidović & Rupčić, 2019; Y. C. Wang et al., 2019)
			2020	7	(Behnamnia, Kamsin, & Ismail, 2020; Bridgers et al., 2020; Bureekhampun & Mungmee, 2020; Lozančić & Tot, 2020; Purwanto, 2020; Seitenov et al., 2020; Soboleva et al., 2020)
			2021	5	(Kalinina et al., 2021; Monteiro et al., 2021; Plummer et al., 2021; Smies et al., 2021; Yekimov et al., 2021)
			2022	7	(DeJesus et al., 2022; Gagarkina et al., 2022; Kemer & İşler Dalgiç, 2022; Li & Xiao, 2022; Petrou & Panaoura, 2022; Saira et al., 2022; Tee, 2022)
			2023	2	(Berson et al., 2023; Cai et al., 2023)

Based on the results of the review of articles that researchers have conducted, 36% of articles discuss preschool creative thinking skills. Furthermore, 28% of articles discuss the factors that influence the development of creative

thinking skills. Then, as many as 36% of articles found articles about stimulating creative thinking skills. The review reveals various issues in various parts of the world regarding developing creative thinking in preschool children. One of the significant issues that emerges is the continued focus on conventional academic achievement in educational approaches. In some countries, there is an emphasis on theoretical learning for preschool children, leaving little room for them to think creatively and explore (Avsec & Sajdera, 2019; Çakır et al., 2021; Soboleva et al., 2020; Ülger, 2016). The importance of play and creative activities in child development is still limited. Another prevalent issue in different parts of the world is the lack of resources and facilities for fostering creative thinking in early childhood. For example, in some remote areas, access to quality education is limited, and there is insufficient emphasis on training teachers to teach children in creative and innovative ways (del Moral Pérez et al., 2017; Saira et al., 2022; Semchuk, 2022).

Social factors also play a significant role in developing creative thinking skills in preschool children. Societies with narrow views and a lack of appreciation for creative expression can hamper children's development. The transfer of values and thinking ethics can create an environment that is not conducive to their growth (Ghaedi et al., 2015; Jurakulovna et al., 2022). On the other hand, there are positive efforts to address these issues and challenges. These problems do not serve as obstacles to the ongoing development of the creative potential of preschool children.

This study discusses sub-topics related to creative thinking skills, factors influencing creative thinking in early childhood, and strategies for nurturing creative thinking based on findings from journals and publications collected using the Publish or Perish application. Additionally, the study explores methods for encouraging creative thinking skills that teachers and parents can employ to foster creative thinking in preschool children.

Creative Thinking Skill

Creative thinking skill refers to an individual's capacity to generate new, valuable, and unconventional ideas. It involves innovative thinking, viewing problems from different perspectives, and producing creative solutions (Christ et al., 2019). Creative thinking also encompasses the ability to imagine, explore, and interact with the social and physical environment. It is a fundamental skill for everyone, including preschool children. Creative thinking skills in preschool children can vary, but there are several observable forms, such as imaginative, associative, divergent, flexible, and original thinking (Sholikah & Harsono, 2021).

Imaginative thinking, a part of creative thinking, can be demonstrated by children through actions like creating stories, role-playing, and using their imagination to solve problems (Stojanović et al., 2019). This imaginative ability empowers children to find solutions, express themselves, and generate new and original ideas when addressing challenges. Visionary thinking in early childhood helps children become creative, innovative thinkers who can adapt to various situations.

Another component of creative thinking is associative thinking. This is demonstrated when children create new connections between ideas that may not appear related at first glance (Noor, 2021). Associative thinking helps children develop critical and creative thinking skills and better understand the world around them. It also helps children develop concepts, comprehension, and the ability to identify similarities, differences, and relationships between objects, words, and ideas.

Another aspect of creative thinking skills is divergent thinking. This ability enables children to generate multiple ideas when responding to a question or creatively solving a problem. Children with divergent solid thinking skills tend to engage their imagination, think outside the box, and create unique solutions and ideas when facing tasks or challenges (Fehr & Russ, 2016). Divergent thinking plays a significant role in the cognitive development, creativity, and problem-solving skills of children, and these skills can be developed concurrently through experiences, practice, and a stimulating environment.

Preschool children can easily switch from one mode of thinking to another, often referred to as flexible thinking, which is part of creative thinking in early childhood. Flexible thinking allows children to adapt their thinking and actions to suit changing situations. Furthermore, this ability serves as the foundation for developing creative thinking skills because it empowers children to explore various ideas, concepts, and different perspectives to enhance creativity (Harasymiv, 2022; J. Wang et al., 2021). Creative thinking and flexible thinking complement each other and play vital roles in the intellectual development of preschool children.

The final capability that preschool children can exhibit is their ability to think in an original way, which demonstrates their development of creative thinking; preschool children can generate authentic and unexpected ideas, thinking outside the box and creating solutions that have not been considered before (Barraza et al., 2019; Chew & Eau, 2017). An example of a child combining original and creative thinking is during playtime. When children want to play with toy cars but have limited materials, they may readily utilize these skills to create a toy car from recycled items, such as combining a bottle with a bottle cap and food skewers. The real-world conditions and environmental support that allow children to develop their creative and original thinking abilities are crucial.

Creative thinking in early childhood is a significant part of their development. Children with creative thinking skills often discover unexpected solutions to problems and create innovative works of art, stories, and concepts. Creative

thinking skills can be acquired through foundational skills that support creative thinking, such as a high imagination and associative, divergent, flexible, and original thinking. These capabilities enable children to generate new, valuable, creative, and innovative ideas, forming the basis for developing creative thinking in early childhood.

Factors Affecting Creative Thinking Skills

Creative thinking skills are valuable assets that should be instilled in humans from an early age. This ability enables children to see the world from different perspectives, create innovative solutions, and develop into creative problem solvers in the future. However, in its implementation, creative thinking skills in preschool children are influenced by internal and external factors, namely the child's environment. Bronfenbrenner, in his Social Ecology Theory, emphasizes that a child's development is influenced by various systems, including the micro-environment (family and friends), the meso-environment (school and community), and the broader exosystemic environment (culture and society) (Byrne, 2018; Perron, 2018).

Internal factors influencing creative thinking skills comprise biological and physiological factors. Meanwhile, external factors may include the children's surroundings, such as family, school, and society. Biological factors are related to the genes inherited from parents, determining a child's talents and intelligence (Gryazeva-Dobshinskaya et al., 2020). Talents and intelligence can affect a child's creative thinking skills. Talented and intelligent children typically possess more flexible, fluent, unique, and original thinking. The second internal factor affecting creative thinking skills in children is physiological factors. This pertains to a child's health and physical condition. Good health can support a child's creative development. Children in good physical need tend to be more active, enthusiastic, and eager to engage in challenging and exciting activities that capture their interest. Conversely, children in less healthy physical conditions can impede their creative development, making them feel weaker, lethargic, and less interactive with their environment.

Creative thinking skills in preschool children are influenced not only by internal factors arising from within the child but also by external factors emanating from the child's environment. External factors from the child's environment encompass the family, school, and community (Ersan et al., 2015; İnal Kiziltepe et al., 2017). The first external factor is the family environment, the primary and foremost environment affecting a child's creativity development. Parenting styles constitute a form of guidance in how parents treat, educate, guide, and discipline their children (Gong et al., 2020). Parenting styles significantly influence the development of creative thinking skills in preschool children. Children raised by parents who adopt democratic, open, appreciative, and freedom-providing parenting styles, allowing their children to express themselves in line with their interests and talents, can enhance the creative thinking skills of these children.

Children raised in a democratic parenting style feel supported, valued, and confident in trying new things and solving problems uniquely. Conversely, children have an authoritarian parenting style, which restricts, limits, and compels them to obey parental orders without room for independent decision-making, which can diminish their creative thinking skills. Additionally, such children may feel pressured, fearful, and unable to express their ideas and thoughts. Erikson (2009), in his psychosocial theory, emphasizes the importance of providing children with the space to explore, express themselves, and take initiative in their learning. Positive and supportive parenting styles that encourage a child's autonomy can help boost their confidence in thinking creatively and pursuing their ideas.

Another external factor influencing creative thinking skills in preschool children is the school environment. This environment plays a crucial role in developing creative thinking skills in preschool children. Schools that provide opportunities for children to learn in enjoyable, varied, and challenging ways can stimulate their creativity (Gozen, 2015; Uszyńska-Jarmoc & Kunat, 2019). Teachers who can motivate, guide, provide feedback, and show appreciation to children can enhance their curiosity, perseverance, and self-confidence in developing creative thinking skills. Adequate and supportive school facilities and resources can also aid in developing children's creativity. For example, schools that offer libraries, laboratories, art spaces, play areas, and other facilities can enrich children's learning experiences and foster the creative thinking skills they possess.

The community environment is also an external factor that influences the creative thinking skills of preschool children. A community that values and acknowledges children's achievements or creative works can encourage the development of children's creativity (Bal & Kaya, 2020; Sochacka et al., 2016). Children will feel proud and motivated to continue creating and innovating. Conversely, a community that does not appreciate or even ridicule and criticize children's achievements or creative works can negatively impact the development of children's creativity. Children may feel embarrassed and not dare to showcase or develop their creative potential. Glaveanu et al.'s (2020) research highlights how culture and cultural values within a community can influence the creative expression and understanding of children's creative thinking skills. Children will likely be affected by their society's norms and cultural values in expressing their creativity.

Both internal factors originating from within the child and external factors from the child's environment significantly affect the development of creative thinking skills in preschool children. If a child has internal solid biological or physiological factors, developing their creative thinking skills will be more accessible when placed in a supportive

environment. Conversely, a creative environment can help build a child's internal factors. Therefore, the best approach is to balance internal and external factors to establish preschool children's creative thinking skills.

Strategies to Develop Creative Thinking in Preschool Children

Creative thinking is a crucial skill that needs to be nurtured in preschool children. Creative thinking involves the ability to generate new, original, and valuable ideas that are relevant to a given purpose or problem. Preschool children possess significant potential for creative thinking due to their natural curiosity, imagination, and a high degree of freedom in self-expression (Çetin & Ata, 2022). However, this potential needs to be supported by a conducive environment, including family, school, and the community. Additionally, there is a need for strategies to develop creative thinking in preschool children. These strategies provide a means for parents, teachers, and community members involved in early childhood education to stimulate, support, and facilitate children's creative development.

The first strategy that parents, teachers, and the community can employ to develop creative thinking in children is to encourage open-ended play. This involves providing children with opportunities to engage in open-ended play activities that allow them to explore their imagination, think creatively, and generate their ideas and solutions (Fehr & Russ, 2016). Adults can achieve this by offering open-ended materials such as building blocks, art supplies, and props for pretend play, like dolls or dramatic play accessories. Another strategy to foster creative thinking in preschool children is encouraging divergent thinking. Adults can encourage children to consider various alternative possibilities through activities that involve discussions and brainstorming. This approach helps develop the creative thinking skills of preschool children.

Establishing an environment that supports creative thinking in preschool children is crucial. This environment can be created by providing spaces for showcasing children's artwork and offering a variety of innovative expression materials, which fosters creative thinking and creativity by allowing children to express their ideas (Lin & Shih, 2022). One of the strategies for developing creative thinking in preschool children also involves giving children opportunities to solve problems and challenges through puzzles and problem-solving-based games, encouraging them to think creatively and generate unique and original solutions. Engaging children in creative art activities such as drawing, painting, music, dancing, and storytelling can enhance their creative thinking skills.

The consistent provision of praise, recognition, and positive feedback in the environment can boost the creative thinking of preschool children (Bucur et al., 2023). This praise and positive feedback motivate and support children's development and achievements. Furthermore, setting examples and modeling creative behaviors from adults and peers can inspire and encourage children to imitate and develop creative thinking skills. Children can learn from adults' experiences, knowledge, and attitudes in their surroundings and their peers.

Adults can encourage children to collaborate and engage in teamwork. These activities encourage children to share ideas and work together to solve problems through group discussions. Exposing children to experiences, cultures, and perspectives may broaden their worldviews and promote their creative and critical thinking skills (Cutcher & Boyd, 2018). Exposing children to various art and cultural traditions can expand their understanding of the world and inspire them to think creatively and critically (Massyrova et al., 2015). The described strategies are expected to be consistently and effectively implemented by parents, teachers, and the community to optimize the development of creative thinking in preschool children.

Discussion

Creative thinking generates new ideas and innovative solutions and views problems differently. It involves seeing things in a new and original way and using non-traditional approaches to problem-solving, resulting in something unique (Dilshod, 2019; Yin et al., 2020). This ability is crucial as it contributes to a child's intelligence and independence. Additionally, it allows children to discover innovative solutions, adapt to challenges, build confidence and courage, and enrich their understanding of the world around them.

Research findings indicate that creative thinking in preschool children is influenced by two factors: internal factors related to the child and external environmental factors. Both factors significantly shape a child's future development. When a child possesses vital internal factors but is hindered by an environment that emphasizes academic achievement alone, it can limit their opportunity to develop this ability and potentially diminish it. Conversely, a supportive environment can nurture and enhance creative thinking skills in children (Gryazeva-Dobshinskaya et al., 2020; İnal Kiziltepe et al., 2017; Johnson, 2021). Collaboration from external sources such as parents, teachers, and the community is essential to provide support and examples for children to develop and stimulate their creative thinking skills.

This support should be consistent, effective, and guided for preschool children. At this stage, children are inquisitive and eager to try new things without fear of making mistakes, so guidance is necessary to provide proper directions when they encounter difficulties. Through discussions with children, adults can help them find solutions (del Moral Pérez et al., 2017; Massyrova et al., 2015; Tsompanaki & Magos, 2022). Furthermore, the support adults provide through praise and positive feedback can boost children's motivation and self-confidence.

Another issue revealed in the research is the need for more training for early childhood educators in developing creative thinking skills in preschool children. This is partly due to the inadequate facilities, especially in remote areas, provided by schools and governments to educators and students to develop creative thinking skills in preschool children (Azhary & Ratmanida, 2021). On the other hand, through research and initiatives, organizations and individuals are trying to provide solutions, such as innovative educational programs using a play-based approach to strengthen creative thinking skills in preschool children.

Another contrasting problem related to early childhood creative thinking skills that is often encountered in the field is that children who receive conventional education that does not keep up with the times will have lower creative thinking skills than children who receive innovative education (Massyrova et al., 2015; Tsompanaki & Magos, 2022). In addition, children who receive education at school that focuses on creativity and innovation, as well as education at home that focuses on creativity and innovation, have higher creative thinking skills than children who receive conventional education at school and education at home.

Another solution that schools can offer to children in developing creative thinking skills, even in remote areas, is to utilize everyday objects found in the child's surroundings, such as clay, sand, rocks, and plants of various shapes, which children can use to create new works according to their ideas and desires (Cheung, 2018; Hernández & Serrano Selva, 2016). Furthermore, governments are beginning to recognize the importance of developing creative thinking skills and are integrating them into the education curriculum. Teaching children to think critically and seek innovative solutions has become a new priority for many countries.

Efforts to develop creative thinking skills in early childhood are a valuable investment in their future. Creative thinking skills will help children become more independent, innovative, and competitive thinkers in a changing world. By involving parents, teachers, and communities, we can create an environment that supports the development of children's creativity so that they can explore their full potential and contribute to a more creative and competitive society. It is hoped that this research can help provide an understanding to teachers, parents, and the community about the obstacles that have occurred so far related to early childhood creative thinking skills and provide an understanding of the solutions that can be done by parents, teachers, and the community in stimulating and developing early childhood creative thinking skills.

Conclusion

The ability to think creatively in preschool children enables them to find innovative solutions and helps them adapt to challenges, fostering self-confidence and courage. Moreover, it enriches their experiences and knowledge of the world around them. However, collaboration from the external environment, including parents, teachers, and the community, is essential to provide support and examples for children to develop and stimulate their creative thinking skills. Children are inquisitive and unafraid of making mistakes during early childhood, making guidance necessary. When children encounter difficulties, adults can offer proper advice through discussions to help them find solutions. Another solution that schools can employ to promote creative thinking in remote areas is to use readily available objects, such as clay, sand, rocks, and various plants, to allow children to create new works that align with their ideas and desires.

Recommendations

We recommend that parents, early childhood education teachers, and the environment around early childhood constantly stimulate children's creative thinking skills by encouraging children to dare to try various things and providing appropriate facilities for children to explore and collaborate with the surrounding environment. For future research, we recommend comparing how the creative thinking ability of elementary school children is seen from stimulation when children are in early childhood education.

Limitations

The literature examined in this research only dates from 2014 to 2023. The most recent study from papers published in early to late 2023 has yet to be reviewed. We anticipate that academics will uncover fresh information about the growth of Developing Creative Thinking in Preschool Children that has yet to be covered in the publication. This report is intended to provide new data for subsequent evaluations.

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Authorship Contribution Statement

Nurjanah: Conceptualization, design, analysis, writing, critical revision of the manuscript, data analysis/ interpretation, securing funding. Yetti: technical or material support, supervision. Sumantri: Reviewing

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