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Improving the Competence of Early Childhood Education Teachers in Designing Innovation-Based Activities for Children's Creative Thinking

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Abstract

This study aims to describe the improvement of early childhood education teachers' competencies in designing innovation-based activities to develop children's creative thinking skills. The study employed a qualitative approach with a descriptive research design. The research subjects were early childhood education teachers involved in the learning process at early childhood education institutions. Data were collected through observation, interviews, and documentation. Data analysis used the Miles, Huberman, and Saldaña models, including data reduction, data display, and conclusion drawing. The findings revealed that improving teachers' competencies had a positive impact on the quality of learning planning and implementation. Teachers became more capable of designing innovative learning activities, using various learning resources, developing creative instructional media, and implementing child-centered learning. The improvement in teachers' competencies also contributed to the development of children's creative thinking skills, as indicated by their ability to generate diverse ideas, express opinions independently, and create more creative works. Therefore, enhancing teachers' competencies in designing innovation-based activities is an important strategy for supporting the development of creative thinking skills in early childhood education.

Keywords: Teacher Designing, Inovation-Based Activities, Early Childhood

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INTRODUCTION

During the golden age, children's brain development is very rapid, requiring appropriate stimulation through meaningful learning activities. Early Childhood Education (PAUD) is an important foundation in developing children's cognitive, social, emotional, and creative abilities as preparation for facing the challenges of the 21st century. One ability that needs to be developed from an early age is creative thinking, namely the ability to generate new ideas, find various alternative solutions to problems, and express ideas flexibly. According to Hasbi (2025), children's creativity can develop optimally if the learning environment provides opportunities for children to explore and experiment. In this context, PAUD teachers have a crucial role as facilitators who design learning experiences that are interesting, enjoyable, and appropriate to the characteristics of children's

development (Leggett, 2017; Michaelidou & Pitri, 2022). Therefore, teacher competence in designing innovation-based learning activities is one of the factors determining the success of developing early childhood creativity.

The shift in educational paradigm through the implementation of the Independent Curriculum requires teachers to be more creative in designing child-centered learning activities (Nurjanah et al., 2024). Learning is no longer solely oriented toward academic achievement but also focuses on developing higher-order thinking skills, including creativity. However, conditions in the field indicate that some early childhood education (PAUD) teachers still experience difficulties in developing innovative activities that can stimulate children's creative thinking abilities. Many learning activities still focus on completing tasks and achieving final results. Hidayah (2025) states that low innovation in learning can hinder children's opportunities to develop their imagination and divergent thinking skills. As a result, the learning process becomes less varied and does not fully provide space for children to freely explore their ideas.

Based on initial observations conducted at several early childhood education institutions, it was found that teachers still tend to use simple lecture methods, provide worksheets, and imitate predetermined examples (Haqiqi & Medilianasari, 2026). Children are more often directed to produce the same product rather than given the opportunity to create works based on their own ideas. Furthermore, the use of innovative learning media and learning materials from the surrounding environment is still limited. These conditions result in children being less actively involved in the learning process. These findings align with research by Aliyah (2025), which states that conventional learning has the potential to limit the development of children's creativity because it provides less opportunity for independent exploration and discovery of new experiences.

Another problem identified during observations was the low level of teacher competency in designing activities that integrate elements of innovation, educational games, project approaches, and the use of simple technology in learning. Some teachers admitted to having difficulty coming up with activity ideas that align with learning objectives and child characteristics. Furthermore, limited training and a lack of professional mentoring are factors that impact teachers' ability to develop creative learning (Rohaeni & Nurhayati, 2025; Rohma & Dheasari, 2025). Lamatokan et al. (2025) explain that improving teacher competency through ongoing training can enhance their ability to create more innovative learning activities oriented toward developing children's potential. Therefore, strengthening teacher competency is an urgent need to address the various learning challenges in early childhood education.

Teacher competencies in designing innovation-based activities include the ability to identify children's learning needs, select appropriate strategies, utilize learning media creatively, and create a learning environment that encourages exploration (Katungi et al., 2023; Szkolak, 2017). Teachers who possess these competencies will find it easier to present challenging and enjoyable activities for children. Activities such as simple experiments, creative projects, exploratory games, and problem-solving-based activities can be effective tools for developing creative thinking skills. Ulfiati et al. (2025) emphasized that innovative learning can increase children's curiosity, imagination, and courage in expressing new ideas. Thus, the quality of learning is greatly influenced by teachers' ability to design innovative and meaningful learning experiences.

Based on these various problems, systematic efforts are needed to improve the competence of early childhood education (PAUD) teachers in designing innovation-based activities that can develop children's creative thinking skills. This research is important because it focuses on improving the capacity of teachers as the main actors in the learning process. Through this competency improvement, it is hoped that teachers will be able to produce activity designs that are more creative, contextual, and appropriate to children's developmental needs. Furthermore, the results of this research are expected to contribute

to the development of innovative learning practices in PAUD institutions and serve as a consideration in developing ongoing teacher training and mentoring programs to improve the quality of early childhood education.

Teacher competence is a set of knowledge, skills, attitudes, and abilities that an educator must possess in carrying out their professional duties. In the context of Early Childhood Education (PAUD), teacher competence is not only related to teaching ability, but also the ability to understand the characteristics of child development and design learning experiences that are appropriate to their needs and potential (Gandana et al., 2021). PAUD teachers are required to be able to create a learning environment that is safe, enjoyable, and stimulates all aspects of child development. This competence is a crucial factor in determining the quality of the learning process that takes place in the classroom. According to Hasbi (2025), teachers who possess good professional competence tend to be better able to develop interesting learning activities and provide meaningful learning experiences for children. Therefore, teacher competence is the main foundation in providing quality education that is oriented towards the optimal development of early childhood.

In the current era of educational transformation, teachers are required to have the ability to design innovation-based learning activities. Innovation in learning can be defined as the effort to create or develop new ideas, methods, media, or strategies aimed at improving the quality of the learning process. Innovation-based learning provides opportunities for children to actively engage in exploration, experimentation, and problem-solving (Ling & Huang, 2025; Maarang et al., 2023). Innovative teachers not only use a variety of methods but are also able to utilize various learning resources available in the surrounding environment. Hidayah (2025) explains that learning innovation is a crucial indicator in supporting the implementation of the Independent Curriculum, which emphasizes student-centered learning. Therefore, teachers' ability to design innovation-based activities is an integral part of the professional competency that early childhood education educators must possess.

The ability to design innovation-based activities encompasses several important aspects, including analyzing children's learning needs, determining learning objectives, selecting appropriate methods, and developing relevant media and learning resources. Teachers need to consider children's developmental characteristics when designing activities to ensure they align with their abilities and interests (Ar & Delen, 2023). Furthermore, designed activities should provide hands-on experiences that encourage children to think, ask questions, experiment, and discover knowledge for themselves. Aulia and Nopriansyah (2025) state that innovative learning planning can increase children's engagement in the learning process and create a more active and enjoyable classroom atmosphere. Therefore, the quality of teacher planning is one indicator of the successful implementation of innovative learning in early childhood education units.

Teacher competence in designing innovation-based activities is also influenced by various factors, both internal and external. Internal factors include educational background, teaching experience, motivation, creativity, and the willingness to continue learning and self-development. Meanwhile, external factors include institutional support, the availability of facilities and infrastructure, access to training, and a conducive work environment. Lamatokan et al. (2025) suggest that ongoing training and mentoring programs can improve teachers' ability to develop creative ideas for learning activities. The more opportunities teachers have for professional development, the greater their chances of producing innovation in the learning process (Musnia et al., 2026; Pianta et al., 2014). Therefore, improving teacher competence requires systematic support from various parties.

Improving teacher competency in designing innovation-based activities has a significant impact on the quality of learning and child development. Competent teachers will be able to create a variety of challenging, fun, and meaningful activities so that children have

the opportunity to develop their full potential (Habibi, 2023; Priantika et al., 2024). Innovation-based activities can include simple experiments, creative projects, educational games, environmental activities, or the use of age-appropriate technology. Ulfiati et al. (2025) explain that well-designed innovative learning can increase children's active participation, develop curiosity, and strengthen creative thinking skills. Therefore, teacher competency in designing innovation-based activities is a crucial factor in determining the success of learning in early childhood education.

Creative thinking is an individual's ability to generate new, unique, and useful ideas, concepts, or solutions in various situations (Kupers et al., 2019). In early childhood, creative thinking skills are demonstrated through imaginative activities, creating something different, proposing various alternative answers, and demonstrating a strong curiosity about the surrounding environment. Creativity does not emerge spontaneously, but develops through a continuous process of stimulation provided from an early age. According to Aliyah (2025), children's creative thinking skills can develop optimally if they are given the opportunity to explore, experiment, and express their ideas freely. Therefore, a learning environment that supports creativity is an important factor in the process of developing creative thinking skills in early childhood.

Creative thinking skills play a crucial role in children's development because they are linked to their ability to solve problems, make decisions, and adapt to changes (Alimanova et al., 2025). Children with creative thinking skills tend to be more active in seeking information, are more willing to try new things, and are able to see problems from multiple perspectives. Creativity is also a 21st-century skill that needs to be instilled early on to enable children to face future challenges. Hasbi (2025) states that developing creativity in children not only impacts cognitive aspects but also social, emotional, and communication development. Therefore, developing creative thinking skills must be an integral part of the learning process in early childhood education institutions.

Theoretically, creative thinking in early childhood can be seen through several indicators, namely fluency, flexibility, originality, and the ability to develop ideas in detail (elaboration) (Aziz & Bakar, 2021; Sadaruddin et al., 2024). Children who have fluency are able to generate many ideas in a relatively short time. Flexibility of thinking is demonstrated through the ability to see various alternative solutions to a problem. Originality of ideas is seen from the ability to produce ideas that are unique and different from those of their peers. Meanwhile, elaboration is demonstrated through the ability to develop an idea into a more detailed and interesting one. Hidayah (2025) explains that these four indicators can develop optimally if children receive challenging learning experiences and provide space for exploration.

The development of children's creative thinking skills is influenced by various factors, both from within the child and their surrounding environment. Internal factors include curiosity, motivation, interest, self-confidence, and cognitive abilities. Meanwhile, external factors include parental parenting styles, the social environment, and the quality of learning received at school (Bai et al., 2020; Jankowska & Gralewski, 2022). Overly structured and results-oriented learning often limits children's opportunities to think creatively. Conversely, an environment that provides freedom of expression and opportunities to try new experiences will support the development of children's creativity. Ulfiati et al. (2025) emphasized that a learning environment that is open and responsive to children's ideas has a positive influence on improving creative thinking skills.

In early childhood education (PAUD), creative thinking skills can be developed through various activities that provide opportunities for children to actively participate (Ferrero et al., 2021; Xiong et al., 2022). Activities such as role-playing, simple experiments, creative projects, drawing, making art from used materials, and problem-solving games are examples of activities that can stimulate children's creativity. Teachers act as facilitators, providing support and opportunities for children to explore ideas without fear of making

mistakes. Aulia and Nopriansyah (2025) explain that innovatively designed learning can improve children's ability to generate new ideas and find creative solutions to various situations. Thus, creative thinking is a skill that needs to be developed systematically through innovative, child-centered learning.

METHOD

This study uses a qualitative approach with a descriptive research type. The qualitative approach was chosen because this study aims to understand in-depth the phenomenon of improving the competence of early childhood education (PAUD) teachers in designing innovation-based activities to develop children's creative thinking skills. Through this approach, researchers can gather comprehensive information regarding the experiences, understanding, and practices carried out by teachers in designing and implementing innovative learning activities. The research subjects consisted of early childhood education (PAUD) teachers who were directly involved in the learning process. Data collection was carried out through observation, interviews, and documentation. Observations were used to obtain a concrete picture of the implementation of learning activities in the classroom, while interviews were conducted to gather information related to teacher competence in designing innovation-based activities. Documentation was used as supporting data in the form of learning tools, activity photos, and other relevant documents.

Data analysis was conducted interactively through the stages of data reduction, data presentation, and conclusion drawing, as outlined by Miles, Huberman, and Saldaña (2022). Data obtained from observations, interviews, and documentation were first collected, then selected and grouped based on the research focus. Next, the data were presented in narrative form to facilitate researchers in understanding the relationships between the findings. The final stage was carried out by drawing conclusions based on the patterns, themes, and meanings emerging from the research data. To ensure data validity, this study utilized source and technical triangulation techniques by comparing the results of observations, interviews, and documentation to enhance the validity and reliability of the data obtained.

RESULTS AND DISCUSSION

Result

Based on observations and interviews with early childhood education (PAUD) teachers, it was found that their competency in designing innovation-based activities improved after being provided with mentoring and reinforcement regarding creative learning strategies. Prior to participating in competency development activities, most teachers tended to use monotonous learning methods with weekly repetitive activities. The activities focused primarily on completing assignments and using worksheets. After gaining an understanding of innovative learning, teachers began to demonstrate the ability to develop more varied activities that were appropriate to the characteristics of early childhood. These changes were evident in more structured lesson plans, the use of more diverse media, and the emergence of activities that provided opportunities for children to explore. These findings indicate that improving teacher competency impacts the quality of lesson planning implemented in the classroom.

The research results show that teachers are beginning to be able to utilize various learning resources available in their surroundings as part of their learning activities. While previously teachers relied primarily on media already available at school, after participating in competency-building activities, they began using natural materials, used items, and the surrounding environment as engaging learning resources for children. Teachers designed activities that allowed children to make direct observations, gather simple information, and produce work based on their experiences. Utilizing a wider variety of learning resources

provided new experiences for children, making the learning process more contextual. In addition to increasing children's engagement in learning activities, using learning resources from the surrounding environment also helped teachers develop their creativity in designing activities that aligned with the learning themes and children's developmental needs.

In addition to their ability to utilize learning resources, teachers also demonstrated improvements in designing child-centered activities. Based on observations, teachers no longer dominated the learning process as they did before the competency improvement program was implemented. Children were given broader opportunities to choose activities, express opinions, ask questions, and develop ideas based on their individual interests. Teachers acted as facilitators, providing direction and support throughout the learning process. This change in learning patterns resulted in increased child participation in all activities. Children appeared more active in learning, more willing to express their opinions, and demonstrated greater enthusiasm than before. This demonstrates that teachers' competence in designing innovative learning is able to create a more active and enjoyable learning environment for early childhood.

Interviews with teachers revealed that the mentoring program provided a new understanding of the importance of innovation in early childhood education. Most teachers admitted to previously having difficulty finding activity ideas that could foster children's creativity. They tended to use examples of activities found in books or the internet without modifying them to suit their students' needs. After receiving mentoring, teachers began to develop activities independently by integrating elements of play, exploration, and simple problem-solving. Teachers also became more confident in trying various learning methods that had previously been rarely used. This increased confidence positively impacted the quality of learning because teachers were more open to new ideas and bolder in implementing innovations in teaching and learning activities.

The research findings also indicate an increase in teachers' ability to develop creative learning media. Prior to the competency development program, the media used were limited to teaching aids available at school. After participating in competency development activities, teachers began creating their own learning media using simple materials readily available in their surroundings. Various media, such as educational games, simple science exploration tools, picture cards, and creative materials made from recycled materials, began to be used in learning activities. The use of these media not only helped children understand the learning material but also provided opportunities for them to actively interact during the learning process. The presence of more innovative media made the learning environment more engaging and encouraged children to engage optimally in each activity.

The improvement in teachers' competence in designing innovation-based activities also impacted children's creative thinking skills. Based on observations, children showed improvements in their ability to generate ideas, express opinions, and create more diverse works compared to before the activities were implemented. Children appeared more courageous in trying various methods to complete assigned tasks and were no longer dependent on examples provided by the teacher. In several simple project activities, children were able to demonstrate different ideas, resulting in unique works. These abilities indicate developments in the aspects of fluency, flexibility, and originality of ideas, which are key indicators of creative thinking. These changes are evidence that innovatively designed learning activities can provide effective stimulation for the development of creativity in early childhood.

Research also shows that innovation-based activities can increase children's curiosity about their surroundings. Children become more active in asking questions, making observations, and trying various activities provided by the teacher. During environmental exploration activities, for example, children showed high enthusiasm when

asked to observe objects around the school and share their observations. Teachers provided opportunities for children to discuss their findings, creating more active interactions during the learning process. This situation demonstrates that innovative learning not only influences the development of creativity but also improves children's critical thinking and communication skills. Thus, innovation-based activities provide broader benefits to children's overall development.

Overall, the research results indicate that improving the competence of early childhood education (PAUD) teachers in designing innovation-based activities has a positive impact on the quality of learning and the development of children's creative thinking skills. Teachers become more capable of designing engaging activities, utilizing various learning resources, developing creative media, and creating child-centered learning. These changes contribute to increased participation, creativity, curiosity, and courage in children's ideas. These findings indicate that strengthening teacher competence is an effective strategy for improving the quality of learning in PAUD institutions. Therefore, ongoing training and mentoring programs are needed to enable teachers to develop learning innovations that meet the demands of 21st-century education and the developmental needs of early childhood.

Discussion .

The results of the study indicate that improving the competence of early childhood education (PAUD) teachers in designing innovation-based activities significantly impacts the quality of the learning process. Teachers who previously tended to use conventional learning methods began to develop more creative, varied, and child-centered activities. This change is evident in the teachers' ability to design activities that provide opportunities for children to explore, experiment, and express ideas freely. These findings indicate that teacher competence is a critical factor in determining the successful implementation of innovative learning in PAUD institutions. Teachers who have a good understanding of creative learning strategies will more easily create meaningful learning experiences for children. This research finding aligns with Hasbi's (2025) opinion, which states that improving teachers' professional competence contributes to improving the quality of learning because teachers have better abilities in designing and implementing activities that are appropriate to children's developmental needs.

Improving teachers' ability to utilize learning resources was also a key finding in this study. Prior to receiving competency enhancement, most teachers relied solely on the media and teaching materials available at school. However, after participating in competency enhancement activities, teachers began utilizing their surroundings, natural materials, and used items as learning resources to support the learning process. This demonstrates that learning innovation does not always rely on expensive facilities, but rather is influenced by teachers' creativity in managing available resources. Through the use of these diverse learning resources, children gain more authentic and contextual learning experiences. This finding supports Aulia and Nopriansyah's (2025) argument that the use of diverse learning resources can increase children's engagement in the learning process and help them understand concepts through meaningful, hands-on experiences.

The innovative learning designed in this study also demonstrates changes in the interaction patterns between teachers and children. Teachers are no longer the center of information, but rather act as facilitators, providing opportunities for children to actively participate in the learning process. Children are given space to ask questions, express opinions, choose activities, and develop ideas according to their interests and abilities. This approach aligns with the learning principles of the Independent Curriculum, which places students as the primary subjects in the learning process. Research shows that when children are given the freedom to explore, they become more active and enthusiastic in participating in the activities provided. Hidayah (2025) states that child-centered learning can increase

learning motivation and provide greater opportunities for the development of creativity and higher-order thinking skills in early childhood.

Research findings indicate that improving teacher competence has a direct impact on the development of children's creative thinking skills. This is evident in the children's increasing ability to generate diverse ideas, express opinions independently, and create works that differ from one another. Children no longer simply follow the teacher's example but begin to demonstrate the ability to develop ideas based on their own experiences and imagination. This development indicates an increase in the aspects of fluency, flexibility, and originality of ideas as key indicators of creativity. These findings support Aliyah's (2025) view that children's creativity develops optimally when they are given the opportunity to explore their environment, try various alternative solutions, and express ideas freely without excessive pressure or restrictions from adults.

In addition to influencing creativity, innovation-based activities designed by teachers also have a positive impact on the development of children's social and communication skills. During the learning process, children appear to be more active in interacting with their peers, discussing assigned tasks, and conveying their observations and thoughts to the teacher and study group. This situation indicates that innovative learning not only develops cognitive aspects but also supports children's overall social and emotional development. Activities involving collaboration, discussion, and simple problem-solving provide experiences that can strengthen children's communication skills. These findings align with the opinion of Ulfiati et al. (2025) who stated that innovative learning can create a learning environment that supports the integrated development of various aspects of children's abilities, including creativity, communication, collaboration, and self-confidence.

Overall, the results of this study confirm that improving the competence of early childhood education teachers in designing innovation-based activities is a strategic step in developing children's creative thinking skills. Good teacher competence enables the creation of learning that is more engaging, active, and in line with the developmental characteristics of early childhood. Through innovatively designed activities, children have broader opportunities to explore their environment, develop ideas, and discover meaningful learning experiences. Therefore, efforts to improve teacher competence need to be carried out continuously through training, workshops, and professional mentoring so that teachers can continuously adapt to educational developments and student needs. Thus, the quality of early childhood education can be continuously improved, thereby optimally achieving the goal of developing creativity and potential in early childhood.

CONCLUSION

Based on the research results and discussions, it can be concluded that improving the competence of early childhood education (PAUD) teachers in designing innovation-based activities has a positive impact on the quality of the learning process. Teachers demonstrated improved abilities in designing more creative activities, utilizing various learning resources, developing innovative learning media, and implementing child-centered learning. This increased competence enables teachers to create a more active, engaging learning environment that is appropriate to the developmental characteristics of early childhood. Furthermore, innovatively designed learning activities can increase children's participation in the learning process and provide more meaningful learning experiences.

The research also shows that improving teacher competency contributes to the development of children's creative thinking skills. This is evident in children's increased ability to generate diverse ideas, express opinions independently, demonstrate a strong sense of curiosity, and create more creative and varied works. Innovation-based activities provide opportunities for children to explore, experiment, and discover new experiences

that support their creative development. Therefore, teacher competency in designing innovation-based activities is a crucial factor that needs to be continuously developed to improve the quality of learning and optimize the development of creative thinking skills in early childhood.

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