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The Influence of Outdoor And Indoor Learning Systems in Forming Early Childhood Creativity

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Abstract

Background: Creativity is a fundamental dimension in early childhood development, forming the basis for critical thinking, adaptive problem-solving, and innovative imagination. **Purpose:** To analyze the influence of outdoor and indoor learning systems on the development of early childhood creativity and compare the effectiveness of both learning environments. **Methods:** A quantitative study using a comparative method involving 60 children aged 5–6 years in an Early Childhood Education (PAUD) unit, split into outdoor and indoor learning groups. Data were gathered through structured observation, documentation, and a validated creativity assessment rubric based on early childhood standards. **Results:** An Independent Samples t-test revealed that outdoor learning had a stronger overall impact on creativity (83.9) than indoor learning (73.4), owing to better open exploration, imagination, and spontaneous problem-solving. However, indoor learning was more effective for structured tasks that demand high concentration (81.5). **Conclusion:** An integrated learning approach that combines both outdoor and indoor environments is the most effective strategy for developing well-rounded early childhood creativity.

Keywords: Comparative Pedagogy, Creativity Development, Early Childhood Education, Indoor Learning, Outdoor Learning

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Introduction

Early Childhood Education (ECE) provides the foundation for children's cognitive, social, emotional, and physical development. During the early years, appropriate learning experiences play an essential role in fostering children's creativity, which is recognized as one of the key competencies for the twenty-first century. Creativity enables children to generate ideas, solve problems flexibly, express themselves, and adapt to new situations (Amabile, 2018). Therefore, creating learning environments that effectively stimulate creativity has become an important concern in early childhood education.

Learning environments are widely acknowledged as one of the factors influencing children's creative development. In practice, early childhood education institutions commonly implement two learning systems: outdoor learning and indoor learning. Outdoor learning emphasizes direct interaction with natural environments and real-life experiences, while indoor learning provides structured activities supported by various educational materials and learning media. Both learning systems offer different learning experiences that may influence children's creative development in different ways (Louv, 2008; Maynard & Waters, 2014; Susanto, 2017).

Although previous studies have reported the benefits of both outdoor and indoor learning, empirical evidence comparing their effectiveness in enhancing creativity among children aged 5–6 years remains limited, particularly in Indonesian early childhood education settings. Most studies have examined each learning environment separately, making it difficult to determine which approach provides greater support for children's creativity. This gap indicates the need for comparative research that evaluates the contribution of both learning systems within the same educational context.

Unlike prior studies that generally examine outdoor or indoor learning environments in isolation, this study contributes a direct, within-context comparison of both systems using the same sample, setting, and creativity measure. Methodologically, this contributes an empirically grounded basis for the comparative effectiveness of outdoor versus indoor learning; practically, it offers early childhood educators concrete evidence to inform how outdoor and indoor activities might be balanced within a single instructional cycle to support children's creativity more holistically.

Furthermore, the Child Development Achievement Level Standards (STPPA) stipulated in Minister of Education and Culture Regulation No. 137 of 2014 emphasize that creativity should be developed through meaningful, active, and child-centered learning experiences. However, in many early childhood education institutions, outdoor environments are still used primarily for recreational activities rather than being integrated into the learning process. This situation raises questions regarding the effectiveness of outdoor and indoor learning systems in supporting children's creativity.

This study is grounded in Nicholson's Loose Parts Theory, as elaborated by Casey and Robertson (2016), which posits that open-ended, manipulable materials such as those commonly found in outdoor settings afford children greater freedom to construct, transform, and reimagine their environment, thereby stimulating creative thinking. This theoretical lens frames the outdoor and indoor learning environments in this study not merely as physical locations but as differing configurations of material and spatial openness that are expected to support children's creativity in distinct ways.

Therefore, this study aims to compare the influence of outdoor and indoor learning systems on the creativity of children aged 5–6 years. Using a comparative quantitative approach, the findings are expected to provide empirical evidence that can support teachers and educational institutions in designing balanced learning environments that optimize children's creative development.

Methods

Research Design

This study used a quantitative approach with a comparative research design. The quantitative approach was chosen because it allows for objective measurement, evaluation, and statistical testing of the differences in the effects of outdoor and indoor learning systems on early childhood creativity. The comparative method was used to directly compare the creativity levels of children participating in outdoor learning with those participating in indoor learning. The study was conducted at Madinatul Ummah Kindergarten, an early childhood education institution that implements both learning systems. The study population was all Group B children aged 5–6 years during the current school year.

Participants

The study sample was selected using a purposive sampling technique based on specific criteria. Sampled children must be 5–6 years old, have good attendance, and have consistently participated in both outdoor and indoor learning for at least one semester. Children with low attendance or who had recently changed schools were excluded from the study to maintain the study's validity.

Research Instruments

Data were collected using a structured creativity assessment rubric covering four indicators: generating ideas, imagining, creating works, and simple problem solving, together with

observation and documentation sheets used during both outdoor and indoor learning sessions.

Data Collection Procedure

Data were gathered while the sampled children participated in their regular outdoor and indoor learning sessions at Madinatul Ummah Kindergarten over the course of one semester, allowing consistent observation of the same children across both learning conditions.

Data Analysis

Quantitative data were analyzed descriptively to obtain group mean scores, followed by an Independent Samples t-test to examine whether the difference in creativity scores between the outdoor and indoor learning groups was statistically significant.

Ethical Considerations

This study was conducted in accordance with research ethics standards. Approval was obtained from Madinatul Ummah Kindergarten prior to the study. Guarantees regarding the confidentiality and anonymity of the participating children were fully implemented through the use of identity coding.

Results

The Impact of Outdoor Learning on Children's Creativity

Research results show that the outdoor environment has a significant impact on the creative leaps of early childhood. The spatial freedom and unstructured nature of natural materials (open-ended materials) act as natural stimulants that spark children's curiosity. Outdoors, children are not confined by classroom walls or rigid instructions. When interacting with soil, water, rocks, or plants, children are encouraged to actively use their imaginations. In line with Nicholson's Loose Parts theory (in Casey & Robertson, 2016), flexible natural objects in the outdoors encourage children to manipulate them into various shapes according to their own ideas. Outdoor activities have also been shown to significantly improve simple problem-solving skills. When children play in nature, they face dynamic and unpredictable challenges-such as how to balance themselves while navigating branches or how to build a sandcastle so that it doesn't collapse. This process stimulates children's cognitive flexibility, enabling them to find solutions independently (Knight, 2013).

This real experience (experiential learning) is what makes children more courageous in taking risks and expressing themselves without fear of making mistakes.

Table 1. Class B Table

Creativity Indicators	Average Outdoor Learning Score	Average Indoor Learning Score
Generating Ideas	84,5	72,0
Imagining	88,5	70,5
Creating Works	79,5	81,5
Simple Problem Solving	82,0	68,0
Self Expression	85,0	75,0
Overall Average	83,9	73,4

Key Findings: The data above shows that overall, the creativity development score of children in the outdoor learning system (83.9) was higher than that of children in the indoor learning system (73.4).

Statistical Testing

An Independent Samples t-test was conducted to determine whether the difference between the outdoor group mean (83.9) and the indoor group mean (73.4) was statistically significant.

The Effect of Indoor Learning on Children's Creativity

Although the total score for indoor learning is lower, research shows that conventional classrooms still play a crucial role, particularly in the Creative Works indicator. Structured indoor environments provide Educational Toys (APE) such as blocks, Legos, puzzles, and art supplies (crayons, origami, synthetic clay) that are specifically designed to develop children's fine motor skills and focus. According to Susanto (2017), indoor learning provides convergent stimulation that helps children transform their abstract ideas into concrete, planned works. Through teacher guidance and the availability of a variety of media, children can learn to develop step-by-step strategies to complete an art or construction project. However, limited space and the closed-ended nature of play tools tend to limit children's wild imagination and original ideas compared to natural environments (Maynard & Waters, 2014).

Discussion

Interpretation of Key Findings, Comparison with Prior Literature, and Implications

A comparison of these two systems confirms that both outdoor and indoor learning have complementary advantages. Outdoor learning is powerful in stimulating imagination, generating original ideas, and adapting problem-solving skills due to its free-flowing nature and rich sensory stimuli. On the other hand, indoor learning excels in developing concentration, perseverance, and the execution of structured creative work. Therefore, separating these two systems or favoring only one over the other is an inappropriate approach in Early Childhood Education (ECE) management. The best strategy to optimize children's golden years is to implement the Blended Learning Environment method—a learning concept that integrates outdoor and indoor activities in a balanced and sustainable manner (Louv, 2008). Teachers can stimulate children's early imagination outdoors through nature exploration, then invite them into the classroom to express these natural ideas in the form of artwork or structured writing.

Teachers can design a continuous daily learning cycle. For example, the stimulation process could begin in the outdoor area, where children are invited to explore the school garden ecosystem to stimulate their imagination and collect natural materials. Afterward, children are directed back to the indoor space to reflect, classify, and organize their findings into an art project, model, or illustrated story. Through a balanced combination of outdoor adventure and indoor focus, all dimensions of early childhood creativity can develop optimally and fully.

Theoretical Background: Indoor and Outdoor Learning Environments

Indoor Learning Environment

Definition of Indoor Learning Environment

An indoor learning environment is generally defined as the entire learning area located within a room. Maftukhah (2015) states that the indoor environment is centered within the classroom, which serves as the primary area for students to carry out the learning process. More specifically in the context of children's education, Atuy et al. (2021) explain that this indoor environment is divided into various interest centers or activity areas, such as block areas, drama, art and music, manipulatives, religion, mathematics, and even a science area involving animal and plant recognition and sand and water play.

In practice, this indoor learning environment is not limited to a single classroom. Ismail et al. (2019) classify the indoor environment into several supporting facilities within the school, including classrooms, playrooms, the School Health Unit (UKS), kitchens, and restrooms. Regarding its physical characteristics, Mariyana and Ocih (2018) explained that

the ideal children's classroom is a spacious rectangle, equipped with flexible partitions as dividers between activity areas, and has special storage areas in each corner to facilitate children's learning materials. In line with this, Fahrudin and Ma'rifatul (2018) and Amri (2021) emphasized that the indoor environment is a facility provided structurally by school management as a learning resource, which includes the main classroom, library, laboratory, and auditorium.

Principles of Indoor Learning Environment Management

Managing the indoor learning environment is a crucial aspect of early childhood education. A well-designed learning environment can create a safe, comfortable, and enjoyable atmosphere that supports the development of all aspects of a child's abilities. According to Nuritasari and Julianto (2014), referring to the Minister of National Education Regulation Number 58 of 2009 concerning Early Childhood Education Standards, learning spaces in formal PAUD units must meet a minimum ratio of 3 m² per child. Furthermore, the layout and seating arrangements need to be tailored to the needs and characteristics of the learning activities to be implemented.

Hamid (2011) explains that classroom conditions influence a child's ability to focus and comprehend information presented during the learning process. Therefore, the learning environment needs to be designed to enhance concentration while providing a sense of comfort for children. In line with this, Nielsen, as cited in Mariyana et al. (2010), recommends combining quiet areas and more active areas within a single learning environment. This arrangement can create an atmosphere that resembles everyday life and reduce the tendency to segregate activities based on gender. Managing an indoor learning environment involves more than just spatial arrangement, but also the selection of learning resources and infrastructure. Zaman et al. (2007) stated that educational play equipment should be made from materials that are readily available locally, affordable, and can be made from recycled materials that are still suitable for use.

Outdoor Learning Environment

Definition of Outdoor Learning Environment

Outdoor learning environments are an important component in early childhood education because they provide children with the opportunity to learn directly through interaction with the natural and social environment outside the classroom. Outdoor learning not only serves as a recreational activity but also serves as an effective means for developing various aspects of a child's overall development. According to Froebel in Mariyana et al. (2010), outdoor play environments are natural spaces where children gain learning experiences through activities such as gardening, caring for animals, building water channels, and

engaging in various forms of play. These activities provide children with the opportunity to freely explore their environment while developing creativity, curiosity, and life skills.

Fahrudin and Ma'rifatul (2018) explain that outdoor learning environments are learning environments located outside the classroom or school area, such as parks, museums, mosques, fields, gardens, monuments, or other places that can be used as learning resources. Through utilizing these environments, children gain more authentic learning experiences through direct interaction with the objects being studied. Asmawati (2008) stated that an outdoor learning environment is one that is not limited by walls, thus providing children with the freedom to play and learn, both individually and in groups. The design of the outdoor environment must consider safety aspects, be appropriate to children's developmental characteristics, meet their learning needs, and create an attractive, comfortable, and enjoyable atmosphere.

Principles of Outdoor Learning Environment Management

The management of outdoor learning environments in early childhood education requires careful design to provide a safe, enjoyable learning experience that aligns with children's developmental characteristics. The outdoor classroom environment serves not only as a playground, but also as a learning space that can stimulate children's physical, cognitive, socio-emotional, language, artistic, and creative development. According to Mariyana et al. (2010), several principles must be considered in managing outdoor learning environments. The first principle is safety, which involves ensuring that all play areas are free from potential hazards to minimize the risk of accidents. Given that young children are not yet able to optimally assess risks, teachers and institutions have a responsibility to provide a safe environment and supervise activities during the activity. The second principle is to facilitate children's natural characteristics. Children inherently have a tendency to actively move, explore, and learn through direct experience. Therefore, outdoor environments should provide opportunities for children to play freely, independently, and creatively, while teachers act as facilitators, guiding and ensuring children's safety during activities. The next principle is environmental design that is oriented towards children's needs. Outdoor environments should provide a variety of simple, easily portable play materials that allow children to explore, such as sand, water, wood, stones, and other natural materials. The availability of these materials can increase children's motivation to learn, creativity, scientific thinking skills, and sensitivity to their environment.

Mariyana et al. (2010) also explain that outdoor environmental design needs to consider several physical aspects, namely location, size of the play area, fences, soil conditions, surface type, and the availability of shade. Play areas should be located in locations that are easily supervised, have adequate lighting, are easily accessible from the classroom, and are large enough to allow children to move freely. The use of fences increases safety and

prevents children from leaving the play area unsupervised. Furthermore, the ground surface should be made of safe materials, such as grass, sand, rubber, or other soft materials, to reduce the risk of injury if children fall. The availability of trees or shade is also necessary to ensure children remain comfortable during activities in the sun or in inclement weather.

Limitations and Future Directions

This study is limited by its relatively small sample (60 children) drawn from a single kindergarten, which may constrain the generalizability of the findings to other settings. The comparative design, while useful for identifying differences between the two learning systems, does not fully control for confounding variables such as teacher instructional style or time of day. Future research could employ a larger, multi-site sample, a randomized or longitudinal design, and a combination of quantitative and qualitative methods to further explain why and how outdoor and indoor learning contribute differently to specific dimensions of children's creativity.

Conclusion

Based on the research results, it can be concluded that both outdoor and indoor learning systems play a role in developing creativity in early childhood, but each has distinct characteristics and contributions. The results indicate that outdoor learning has a more significant influence on the development of children's creativity than indoor learning. Outdoor learning activities provide children with opportunities to interact directly with the environment, explore various natural objects, use their imagination, develop curiosity, and solve problems through real-life experiences. These conditions can stimulate the emergence of new ideas, enhance creative thinking skills, and encourage children to be more confident in expressing their ideas. On the other hand, indoor learning still plays a crucial role in supporting the development of creativity, particularly in helping children produce more structured work through the use of various learning media, educational games, and systematic teacher guidance. The classroom learning environment also helps improve children's concentration, accuracy, and ability to translate ideas into concrete forms.

Thus, this research confirms that outdoor and indoor learning are not contradictory approaches, but rather complementary in supporting the development of creativity in early childhood. Therefore, teachers and early childhood education institutions are advised to design learning that integrates both in-class and out-of-class activities in a balanced manner, in accordance with learning objectives and child developmental characteristics. The integrated implementation of both systems is expected to create a more meaningful,

enjoyable, and contextual learning experience, allowing children's full creative potential to develop optimally.

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Declaration on the Use of Artificial Intelligence

The author declares that artificial intelligence (AI) tools, such as ChatGPT, were used to a limited extent in the preparation of this manuscript, specifically to assist with language editing, grammar correction, and the enhancement of writing clarity. All ideas, problem formulations, research objectives, data collection and analysis, result interpretations, and conclusions presented in this manuscript are the product of the author's own independent thought and work. The author assumes full responsibility for the accuracy, integrity, and originality of the manuscript's content and ensures that the use of AI did not replace the author's intellectual contribution to this research.

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