

Free Play in Outdoor Playground Learning at Yogyakarta Kindergartens

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Abstract: This research aims to describe the implementation of free play in outdoor playground learning at Yogyakarta Kindergartens, focusing on how this method supports cognitive, social, and emotional development. The study employs a descriptive quantitative design, collecting and analysing data from 89 students aged 5-6 from five state kindergartens. Observation sheets divided into six key indicators: active engagement, social interaction, exploration, creativity, problem solving, and emotional management, were used as the primary data collection instrument. Data analysis was conducted using frequencies and percentages through Microsoft Excel. The findings reveal that 96.63% of students showed significant active engagement, 83.15% engaged in healthy social interactions, and 94.38% demonstrated active exploration. Creativity was evident in 77.53% of students, while 79.78% displayed improved problem-solving skills. Emotional management improved in 71.91% of students. The study concludes that free play in outdoor playgrounds significantly benefits holistic student development, suggesting that educational policies should support such activities to maximise cognitive, social, emotional, and physical growth. The research provides practical recommendations for educators and policymakers to improve free play in outdoor playground learning programs in kindergartens, fostering a more inclusive, creative, and supportive learning environment.

Keywords: *Free Play, Outdoor, Playground, Kindergartens*

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INTRODUCTION

Free play in the context of kindergarten education is defined as activities chosen and directed by the students themselves, without direct intervention or instruction from adults. In free play, students can decide what they will play, how, and with whom. This differs from structured learning methods organised by teachers or other adults, with predetermined activities and learning objectives. Free play allows students to explore their interests, develop creativity, and learn through direct experience. According to Tortella et al., (2019) free play learning in outdoor kindergarten settings is divided into five areas: (1) balance area; (2) mobility area; (3) manuality area; (4) symbolic play area; (5) mixed area. Child development theories, such as constructivism pioneered by Jean Piaget, emphasise

that students learn most effectively through active interaction with their environment. Additionally, Lev Vygotsky's theory of the zone of proximal development supports the importance of free play for students to reach higher levels of development through social interaction and experimentation. Research by Kirk & Jay (2018) shows that free play supports cognitive development and enhances social and emotional skills as students learn to negotiate, cooperate, and resolve conflicts during play.

The success of implementing free play in outdoor playgrounds involves various variables and elements that must be present to ensure its quality and appropriateness for students during the learning process. Key variables often analysed include the level of student engagement, the types of play activities conducted, and the social interactions during play. Students who are actively engaged and show high interest in free play tend to exhibit better cognitive and social development (Parrott & Cohen, 2021). Essential elements of free play include adequate space, sufficient time, and play equipment appropriate for the student's development. A safe and engaging play area encourages students to explore and imagine while sufficient time allows them to immerse themselves in their play without interruption. Varied and age-appropriate play equipment is also essential for stimulating students' creativity and motor skills. Other indicators of the success of free play include improvements in cognitive skills, such as problem solving and creativity; social development, such as the ability to interact and cooperate with peers; and emotional well-being, such as increased self-confidence and emotional regulation Gülay Ogelman et al., (2021). Therefore, the success of free play can be measured through a combination of these variables that reflect the holistic development of students.

Free play in outdoor playgrounds provides numerous significant student development benefits, including improved physical health, sensory stimulation, and nature-based learning. Physically, outdoor playgrounds allow students to move more freely and actively, which helps enhance their fitness, coordination, and motor skills. Activities such as running, climbing, and jumping strengthen muscles and bones and support the development of balance and bodily coordination. Helles (2021) Outdoor playgrounds offer more decadent sensory stimulation compared to indoor play. Students can experience various textures, smells, and sounds from the natural environment, stimulating their sensory development. Nature-based learning during outdoor playgrounds is also crucial, as students can learn directly about ecosystems, life cycles, and natural phenomena. Research by Dankiw et al., (2020) shows that students who play in natural environments have better motor skills and are more creative in problem solving than those who play in restricted environments. Moreover, a study by Russo & Andreucci (2023) found that access to green open spaces can enhance psychological well-being and reduce stress in students. Therefore, the benefits of

free play in outdoor playground learning are not limited to physical aspects but also include broader cognitive, emotional, and social development.

Teachers and the school environment are crucial in supporting the effective implementation of free play. Teachers are responsible for designing engaging and challenging play activities and ensuring that every student has the opportunity to participate. Teachers also act as facilitators, providing appropriate guidance without limiting students' creativity (Richardson & Mishra, 2018). This includes observing and evaluating student interactions during play to ensure that cognitive, social, and emotional development goals are met. Additionally, teachers must create a safe and inclusive atmosphere where students feel comfortable exploring and trying new things.

On the other hand schools must provide facilities and resources that support free play. This includes offering large, safe play areas and various play equipment suitable for students' developmental stages. Amicone et al., (2018) Schools can integrate natural environments into playground design to provide richer student experiences. Another strategy schools can adopt is training teachers to enhance their understanding of the benefits of free play and how to integrate it into the curriculum. Research by Smidt & Embacher (2020) indicates that teacher training in supporting free play can improve the quality of student interactions and enrich their play experiences. With active teacher involvement and support from the school environment, free play can be optimized to support students' holistic development.

This study aims to describe the implementation of free play in outdoor playgrounds learning at kindergartens in Yogyakarta, focusing on how this method can support students' cognitive, social, and emotional development. The research aims to provide a deeper understanding of the tangible benefits of free play and identify the factors that influence its success. This study hopes to offer empirical solid evidence on integrating free play into the educational curriculum by evaluating various aspects such as student engagement, social interaction, and developmental achievements. The findings are expected to have practical implications for educators and policymakers in Yogyakarta, aiding them in designing more effective and holistic learning programs. Additionally, this research is anticipated to encourage enhancing facilities and resources that support free play activities in schools and guide teachers in designing and implementing beneficial free play strategies. Overall, the results of this study are intended to contribute to the development of student education in Yogyakarta, creating a more inclusive, creative, and supportive learning environment for comprehensive student development.

METHOD

This study employs a descriptive quantitative research design in education to describe phenomena or events by collecting and analysing quantitative data. This aligns with the viewpoint of Kyngäs (2020) who states that qualitative descriptive research describes the characteristics or state of a phenomenon without measurement or statistical analysis. In the context of free play in outdoor playground learning at kindergartens in Yogyakarta, this type of research can provide a deeper understanding of the implementation of free play activities by students and the environmental factors or teaching methods that contribute to the effectiveness of free play. Through a quantitative approach, data can be systematically collected and statistically analysed to identify specific patterns or trends in free play activities at kindergartens.

The subjects of this study are 89 students aged 5-6 years old from five state kindergartens in Yogyakarta with free play in outdoor playgrounds learning programs. These include 20 students from Pembina State Kindergarten Yogyakarta, 18 students from State Kindergarten 2 Yogyakarta, 16 students from State Kindergarten 3 Yogyakarta, 19 students from State Kindergarten 7 Yogyakarta, and 16 students from State Kindergarten 11 Yogyakarta. Criteria for research subjects were established to ensure that the students were from kindergartens with outdoor free play programs. Establishing specific criteria for research subjects ensures an accurate depiction of the effects of the variables (Desimone & Harms, 2018). This study set these criteria to ensure that the subjects had sufficient experience in free play in outdoor playground learning activities. The research results would accurately reflect the conditions and development relevant to kindergarten students. Thus, this study can accurately depict the effects of free play in outdoor playgrounds on the cognitive, social, and emotional growth of kindergarten students in Yogyakarta.

The instrument used for data collection in this study is the observation sheet, a standard tool in quantitative research. According to Anguera et al., (2018) an observation sheet is designed to systematically and structurally record specific behaviors, events, or characteristics. This study's observation sheet is divided into six key indicators: active engagement, social interaction, exploration, creativity, problem solving, and emotional management. This provides a comprehensive framework for understanding the effectiveness of free play in outdoor playground learning at kindergartens in Yogyakarta. Using the observation sheet as the primary instrument, researchers can systematically and structurally collect data on students' free play experiences and analyse the results to identify significant patterns or trends. This approach allows researchers to understand how free play influences kindergarten students' cognitive, social, and emotional development.

The data analysis technique used in this study is qualitative analysis in the form of frequencies and percentages, conducted using Microsoft Excel software.

Qualitative analysis is a research method that deeply understands complex phenomena (Castleberry & Nolen, 2018). In this study, qualitative analysis is carried out by collecting data on students' free play activities at kindergartens in Yogyakarta, which are classified based on their frequency of occurrence and presented as percentages for each identified category indicator. These indicators include Active Engagement, Social Interaction, Exploration, Creativity, Problem solving, and Emotional Management. This approach aims to provide a more precise and more structured understanding of the extent to which free play influences students' cognitive, social, and emotional development. Researchers can efficiently process and systematically analyse data using tools such as Microsoft Excel, enabling them to produce more accurate and reliable findings.

The analysed data is then presented in tables and bar charts to facilitate readers' understanding of the research findings visually. According to Peña et al., (2020) presenting data in graphical formats such as tables and bar charts can help convey information more clearly and understandably, allowing readers to identify patterns or trends directly. This method enables readers to quickly identify relevant information regarding the frequency and percentage of student engagement in various free play activities and how indicators such as Active Engagement, Social Interaction, Exploration, Creativity, Problem solving, and Emotional Management are distributed among kindergarten students in Yogyakarta. Using this method, the research findings will contribute significantly to understanding the effectiveness of free play in outdoor playground learning and assist in developing more holistic and effective educational strategies for students in Yogyakarta.

RESULTS

Based on the research conducted over eight weeks at Pembina State Kindergarten Yogyakarta, State Kindergarten 2 Yogyakarta, State Kindergarten 3 Yogyakarta, State Kindergarten 7 Yogyakarta, and State Kindergarten 11 Yogyakarta, several vital insights were obtained regarding the implementation of free play in outdoor playgrounds learning at kindergartens in Yogyakarta. This study clarifies how free play can support students' cognitive, social, and emotional development. One of the initial findings is that free play outdoor playgrounds allow students to engage actively in various activities, enhancing their skills in multiple developmental areas. The free play activities showed active engagement, positive social interactions, environmental exploration, creativity in game creation, problem solving abilities, and better emotional management. Factors such as spacious and safe play areas and support from teachers play a crucial role in the successful implementation of free play. Additionally, Roberts et al., (2020) it was found that students involved in free play showed improved psychological well-being and reduced stress, supporting previous research on the benefits of playing

in natural environments. Thus, the findings of this study underscore the importance of free play in supporting holistic student development and provide recommendations for improving kindergarten programs in Yogyakarta.

Kindergarten students in Yogyakarta who participated in the free play in outdoor playground learning program exhibited various positive developments in active engagement, social interaction, exploration, creativity, problem solving, and emotional management. Observations over four weeks revealed that students actively participated in various play activities, including running, climbing, and using the available play equipment. Warneken (2018) The social interactions during free play included group play collaboration, sharing of play equipment, and the ability to resolve conflicts independently. Students also demonstrated curiosity in exploring their surroundings and creating new games with natural materials around the playground. Their creativity was evident in how they improvised games and play equipment, while their problem solving skills developed through the various challenges they encountered during play. Emotional management also improved, with students showing better self-calming abilities and handling frustration more effectively. The research findings highlight the importance of adequate support from teachers and appropriate facilities to ensure the effective implementation of free play, thereby supporting the holistic development of students. Below is the data presentation on active engagement, social interaction, exploration, creativity, problem solving, and emotional management observed during the study.

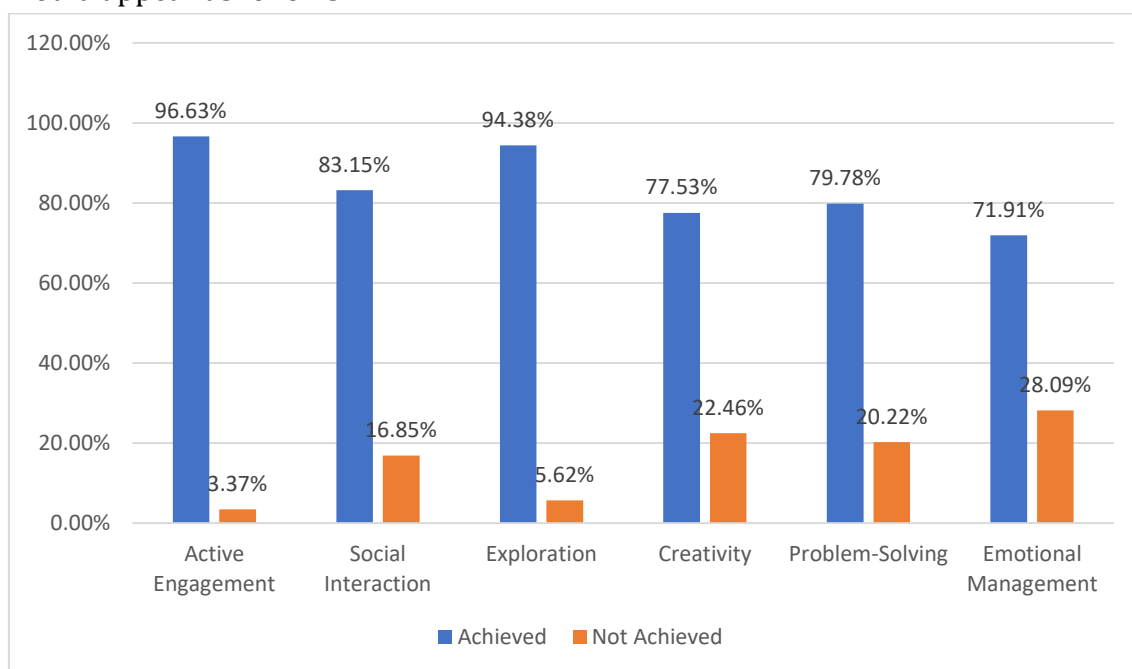
Table 1. Data on the Process of Free Play in Outdoor Playground Learning at Yogyakarta Kindergartens

No	Variable	Number of Students	Achieved	Not Achieved
1	Active Engagement	86	96,63%	3,37%
2	Social Interaction	74	83,15%	16,85%
3	Exploration	84	94,38%	5,62%
4	Creativity	69	77,53%	22,47%
5	Problem solving	71	79,78%	20,22%
6	Emotional Management	64	71,91%	28,09%

Based on the table above, it can be explained that most kindergarten students in Yogyakarta engaged in free play have shown significant achievements in various aspects of development. The data indicates that active engagement is exceptionally high, with 96.63% of students demonstrating substantial involvement. Social interaction is also notably positive, with 83.15% of students participating in healthy and productive interactions. Exploration activities were embraced by 94.38% of the students, showcasing their curiosity and active involvement in discovering their surroundings. Creativity was evident in 77.53%

of the students, who demonstrated improvisation in creating new games using natural materials around the playground. Moreover, problem solving skills were developed in 79.78% of the students, showing their ability to tackle challenges independently or collaboratively during play. Emotional management was improved in 71.91% of the students, indicating their capacity to calm themselves and handle frustration more effectively.

The bar chart would visually represent these percentages, highlighting the students' high levels of engagement, social interaction, exploration, creativity, problem solving, and emotional management. This visual representation further emphasises the significant positive impact of free play on the holistic development of kindergarten students in Yogyakarta. This data underscores the importance of a safe and stimulating play environment and consistent support from teachers in enhancing various developmental aspects of children. The findings suggest that free play promotes physical activity and supports cognitive, social, and emotional growth. If the data in the table above were presented in the form of a bar chart, it would appear as follows:



Picture 1. Bar Chart Data on the Process of Free Play in Outdoor Playground Learning at Yogyakarta Kindergartens

DISCUSSION

Data in this study shows that the level of active engagement among students in free play in outdoor playgrounds learning is very high, with 96.63% of the total research subjects exhibiting significant involvement. These findings highlight the importance of a safe and engaging play environment and consistent support from teachers in enhancing student participation. This aligns with research conducted by Lee et al., (2020) which indicates that students involved in

unstructured play demonstrate better language and social skills than those participating in highly structured activities. Colliver et al., (2022) also assert that active engagement in free play helps students develop self-regulation skills, such as focusing, controlling impulses, and setting goals, which are essential for future academic and social success. Furthermore, research by Ernst & Burcak (2019) shows that playing in natural environments strengthens motor skills and enhances students' creativity. Therefore, educational policies and teaching practices must support and facilitate free play in outdoor playground learning activities, as they provide significant holistic benefits for students' cognitive, social, emotional, and physical development.

The social interaction during free play shows very positive results, with 83.15% of students engaged in healthy and productive social interaction. This interaction includes various forms of collaboration, sharing, and conflict resolution, crucial in developing students' social and emotional skills. Studies by Garaigordobil et al., (2022) indicate that students actively involved in social games improve empathy and conflict resolution skills, which are essential for building healthy relationships and supporting sustainable social development. Furthermore, research by Romero-Ayuso et al., (2022) emphasises that social play helps students develop self-regulation skills, including emotional control and frustration management, which are crucial in social interactions. Overall, the findings of this study indicate that social interaction during free play significantly contributes to the development of students' communication and empathy skills, reinforcing the argument that a safe and supportive play environment, facilitated by the active role of teachers, is crucial in ensuring students can fully benefit from free play.

Students' level of environmental exploration is very high, with 94.38% showing active curiosity in exploring their surroundings. At the same time, creativity is also recorded high, with 77.53% of students demonstrating improvisation in creating new games using natural materials they find. Research by Ernst & Burcak (2019) indicates that students playing in natural environments show improved motor skills and better creativity than those in more structured environments. Additionally, studies by Tang et al., (2020) emphasize that free play allows students to experiment with new ideas and develop problem solving skills through trial and error, which are crucial for cognitive development and creativity. Pyle et al., (2022) also found that free play supports the development of self-regulation and mental flexibility, which are essential for creativity. Overall, the findings of this research reinforce the argument that a play environment that supports exploration and creativity is crucial for holistic student development and that education policies should encourage more opportunities for free play in outdoor playgrounds to maximise the potential for students' cognitive, social, and emotional growth.

Students' problem solving abilities also improved during the research period, with 79.78% demonstrating their ability to solve various challenges while playing. Free play activities provide opportunities for students to confront and overcome problems independently or collaboratively, which is crucial for their cognitive development. Research by Cho & Kim (2018) shows that when confronted with challenges requiring innovative solutions. Studies by Coates & Pimlott-Wilson (2019) found that engagement in free play enables students to develop essential self-regulation skills, such as planning, goal setting, and self-reflection, all contributing to solving abilities. Furthermore, research by Taylor & Boyer (2020) emphasizes that free play provides a natural context for students to experiment with new ideas and solutions, strengthening their ability to tackle challenges flexibly and adaptively. Overall, the findings of this research indicate that free play is a crucial tool in supporting students' cognitive development, especially in honing their problem solving skills, and that education policies should encourage more opportunities for free play in safe and supportive environments.

Students' emotional management also showed a significant improvement, with 71.91% able to calm themselves and cope with frustration better. Free play in natural outdoor playground environments helps reduce stress and enhance students' psychological well-being. Free play allows students to face challenging situations in a safe and supportive context, allowing them to develop effective emotional management strategies. Research by Shiu et al., (2020) indicates that free play helps students develop self-regulation skills, such as impulse control and planning, which are essential for their mental health. Additionally, Lee et al., (2020) found that students engaged in unstructured play demonstrate better stress management abilities and adaptation to change. The natural outdoor playground environment also plays a crucial role in this process, as exposure to nature has been proven to have calming and restorative effects on students, reducing stress levels and enhancing their mood. Overall, the results of this research affirm that free play in outdoor playgrounds learning is vital for students' physical and cognitive development and essential for their emotional management and psychological well-being, supporting education policies that advocate for more time spent playing in nature.

Based on the above description, it can be concluded that free play in outdoor playgrounds on the overall development of students, shedding light on various aspects such as active engagement levels, positive social interaction, environmental exploration, creativity, problem-solving abilities, and improved emotional management. The research reveals a high level of active engagement among students during free play in outdoor playgrounds, highlighting the significance of creating safe and stimulating play environments that encourage exploration and participation. It also emphasises the crucial role of consistent support from teachers in fostering student engagement and enriching their

learning experiences. These social interactions are fundamental in shaping students' social and emotional competencies, contributing significantly to their communication, empathy, and self-regulation skills. The findings align with existing research indicating that social play plays a pivotal role in enhancing students' emotional control, frustration management, and overall social adaptability.

CONCLUSION

This study demonstrates that free play in outdoor playgrounds greatly benefits students' development, including active engagement, social interaction, exploration, creativity, problem solving, and emotional management. The high level of active engagement (96.63%) and healthy social interaction (83.15%) highlights the importance of a safe play environment and teacher support. Exploration of the environment and creativity are also high, at 94.38% and 77.53% respectively. Problem solving abilities have improved (79.78%), and emotional management significantly increased (71.91%). These findings support previous theories and research on the benefits of free play in promoting holistic student development. Therefore, education policies should support free play in outdoor playground learning activities to maximize students' cognitive, social, emotional, and physical development.

Based on the findings of this research, it can also be concluded that free play in outdoor playground learning in kindergartens in Yogyakarta positively impacts students' cognitive, social, and emotional development. The high level of active engagement, social interaction, exploration, creativity, problem solving, and emotional management indicates that free play is an effective and holistic learning method. These findings underscore the importance of providing adequate facilities and teacher support to ensure the successful implementation of free play. This research also provides practical recommendations for educators and policymakers to enhance free play learning programs in kindergartens. This can help create a more inclusive, creative, and supportive learning environment that promotes student development.

Conflict of Interest

The authors of the submitted manuscript declare that there is no conflict of interest regarding the publication of this paper. All aspects of the research, including data collection, analysis, and interpretation, were conducted independently and impartially. The results presented in this study are unbiased and solely reflect the findings from the research conducted. No financial, professional, or personal interests influenced the outcomes or interpretations reported in this study.

Acknowledgment

Thank you to Pembina State Kindergarten Yogyakarta, State Kindergarten 2 Yogyakarta, State Kindergarten 3 Yogyakarta, State Kindergarten 7 Yogyakarta, State Kindergarten 11 Yogyakarta, Musamus University, and all relevant parties for the support provided to the researchers. We hope this research can improve free play in outdoor playground learning for kindergarten children in Yogyakarta.

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