

Analysis of the Implementation of Numeracy Learning through Games in Islamic Children Aged 5-6 Years Al Fikh Orchard Preschool Kuala Lumpur

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Abstract

Numeracy skills represent a crucial aspect of cognitive development in early childhood, serving as a foundation for building logical thinking and problem-solving abilities. This study aims to analyze the implementation of numeracy instruction through games for children aged 5–6 years within the International Teaching Assistance Program at Islamic Preschool Al Fikh Orchard, Kuala Lumpur. A literature review method was employed, examining various scientific journals, books, and relevant sources regarding early childhood numeracy instruction and linking them to the implementation of learning activities within the teaching assistance program. The findings indicate that using games as a learning medium fosters an active, enjoyable, and meaningful learning environment; it also supports the development of skills such as number recognition, basic counting, classifying, comparing, and logical thinking, all in alignment with the children's developmental stages. Furthermore, the International Teaching Assistance Program facilitates a collaborative learning experience between teachers and university students in devising creative and innovative instructional strategies. Thus, implementing numeracy instruction through games serves as an effective alternative strategy for developing early childhood numeracy skills and promoting child-centered learning.

Keywords: Numeracy, Early Childhood, Educational Games, International Teaching Assistance, Play-based Learning.

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Introduction

Early Childhood Education (ECE) plays a crucial role in optimizing all aspects of a child's development, serving as a foundation for educational success at subsequent stages. One aspect that requires early development is cognitive ability, specifically numeracy skills. Numeracy extends beyond the mere ability to recognize numbers and perform calculations; it encompasses logical thinking, problem-solving, classifying, comparing, and understanding the relationships between objects encountered in daily life. Numeracy instruction for young children must be tailored to their developmental characteristics. An effective approach is through play-based activities. Play offers children opportunities to learn actively, gain firsthand experience, and construct knowledge through interaction with their environment. Therefore, the use of creative, innovative, and engaging game-based materials is essential for successful numeracy learning.

Various studies indicate that the use of educational games can enhance the numeracy skills of early childhood learners. Games involving concrete objects, traditional games, and modern educational games have been shown to help children grasp number concepts and basic arithmetic, as well as develop logical thinking skills appropriate for their developmental stage. However, the implementation of numeracy instruction through play across various educational settings warrants further study, particularly within the context of the International Teaching Assistance Program. The International Teaching Assistance Program at Islamic Preschool Al Fikh Orchard, Kuala Lumpur, offers university students the opportunity to gain experience in an international educational setting while applying innovative teaching strategies tailored to the characteristics of young children. This program exemplifies activity-based learning, emphasizing collaboration between teachers and students to create a learning environment that is active, creative, and enjoyable.

Against this backdrop, this study aims to analyze the implementation of numeracy instruction through play for children aged 5–6 at Islamic Preschool Al Fikh Orchard, Kuala Lumpur. By reviewing relevant literature, the study seeks to contribute to the development of numeracy teaching strategies in early childhood education.

Literature Review

2.1. Numeracy Learning in Early Childhood

Numeracy is an individual's ability to understand, use, and interpret number concepts and apply them to solve various problems in daily life. In early childhood education, numeracy focuses not only on counting skills but also encompasses the ability to recognize number symbols, classify objects, compare quantities, identify patterns, measure, and develop logical thinking skills. Developing numeracy skills from an early age establishes a crucial foundation for a child's readiness to engage in learning at subsequent educational levels. Various studies indicate that numeracy instruction conducted in a contextual and enjoyable manner positively impacts children's cognitive development.

2.2. Game-Based Learning

Play is an activity inseparable from a child's world. Through play, children gain direct learning experiences, foster creativity, enhance social skills, and exercise their thinking abilities. Consequently, it is recommended that early childhood education employ a "learning through play" approach. Teachers act as facilitators who design play activities tailored to the children's characteristics and developmental stages, ensuring the learning process is active, enjoyable, and meaningful. Research findings also demonstrate that the use of educational games can boost learning motivation, child engagement, and understanding of numeracy

concepts. 1.2.3 Permainan sebagai Media Pembelajaran Numerasi Game-based media serves as an effective tool for introducing numeracy concepts to young children. Games utilizing concrete objects, number dice, number cards, traditional games, or modern educational games help children grasp numerical concepts through tangible experiences. The use of game-based media allows children to learn while exploring, observing, classifying, comparing, and solving simple problems. Consequently, numeracy instruction focuses not merely on outcomes but also on a learning process that fosters logical thinking, creativity, and self-confidence in children.

2.3. International Teaching Assistance Program

The International Teaching Assistance Program is an educational initiative that provides university students with the opportunity to gain teaching experience at educational institutions abroad. This program not only enhances students' pedagogical competence but also broadens their understanding of how teaching strategies are applied within multicultural environments. At the Islamic Preschool Al Fikh Orchard in Kuala Lumpur, students assist teachers in designing and implementing game-based learning activities tailored to the characteristics of young children. This collaboration aims to create an innovative, interactive, and child-centered learning process, thereby ensuring that numeracy learning objectives are optimally achieved.

Research Methodology

This article was prepared using a literature study method (library research) with a qualitative descriptive approach. The method aims to gain a comprehensive understanding of the implementation of numeracy learning through play for children aged 5–6 years within the International Teaching Assistance Program at Islamic Preschool Al Fikh Orchard, Kuala Lumpur. Data were obtained from various relevant sources, including national and international scholarly journals, books, conference proceedings, and prior research findings addressing early childhood numeracy, play-based learning, and early childhood education. Sources were selected based on their relevance to the study's focus and the credibility of the references used.

Data collection was conducted through a documentation study involving the examination, identification, and review of literature related to the research topic. The collected data were then analyzed using content analysis techniques, comprising data reduction, data presentation, and conclusion drawing. The analysis results were subsequently used to explain the implementation of numeracy learning through play—drawing on relevant research findings—and to relate these insights to the execution of the International Teaching Assistance Program at Islamic Preschool Al Fikh Orchard, Kuala Lumpur.

Results

In the International Teaching Assistance Program at Al Fikh Orchard Islamic Preschool in Kuala Lumpur, numeracy learning through play was one of the approaches implemented to support the children's learning process. Based on an analysis of the program's implementation and relevant literature, learning activities were conducted using educational games that incorporated concrete media, such as number dice and other educational play tools. These activities provided opportunities for children to learn actively through exploration, observation, and interaction with their learning environment.

Beyond benefiting the children's numeracy development, the implementation of game-based learning strengthened collaboration between teachers and university students in designing creative and innovative learning activities. The students acted as learning facilitators, assisting teachers in managing "play-while-learning" activities to create a classroom atmosphere that was more interactive, enjoyable, and child-centered.

The results of the teaching assistance program align with findings from various journals and previous studies. Thus, the results support earlier research indicating that teaching assistance programs—specifically those incorporating numeracy learning through play—serve as effective strategies for developing the cognitive abilities of early childhood learners, particularly those aged 5–6 years. Various studies explain that play-based activities create an enjoyable learning atmosphere, making it easier for children to grasp number concepts, recognize numerals, perform simple calculations, classify objects, compare quantities, and develop logical thinking skills. Learning packaged as play also boosts children's learning motivation, curiosity, and active participation during the learning process. In early childhood education, the use of concrete play media plays a crucial role in helping children understand numeracy concepts. Media such as number dice, number cards, puzzles, objects from the surrounding environment, and traditional games provide tangible learning experiences, allowing children to connect abstract concepts with their daily lives. This approach aligns with cognitive development theories stating that children learn more effectively through direct experience and activities appropriate for their developmental stage.

Based on a review of various research findings, educational games not only enhance number recognition skills but also foster children's abilities to solve simple problems, categorize objects, compare sizes and quantities, and develop critical thinking skills from an early age. Consequently, selecting game-based materials that align with the learners' characteristics is a crucial factor in the success of numeracy instruction. Successful implementation depends on the educator's creativity in selecting learning materials, the alignment of activities with children's developmental stages, and the creation of a learning environment that encourages exploration and active learner participation. Therefore, game-based learning serves as a viable alternative strategy for improving the quality of early childhood education, including within the framework of the International Teaching Assistance Program.

Conclusion

Based on the literature review conducted, it can be concluded that numeracy instruction through play is an effective strategy for developing the numeracy skills of children aged 5–6 years. The use of various educational game-based media helps children recognize number symbols, perform simple counting, classify, compare, and develop logical thinking skills appropriate for their developmental stage. Instruction delivered through play activities also fosters an active, enjoyable, and child-centered learning environment, thereby enhancing children's engagement in the learning process.

In the context of the International Teaching Assistance Program at Islamic Preschool Al Fikh Orchard Kuala Lumpur, game-based numeracy instruction serves as an approach that supports an innovative and collaborative learning process between teachers and university students. The study results indicate that implementing this strategy contributes positively to the development of children's numeracy skills and fosters more meaningful learning experiences.

Therefore, game-based numeracy instruction can serve as an alternative teaching strategy in early childhood education. Future research is encouraged to employ field research methods to gather empirical data regarding the effectiveness of implementing game-based numeracy instruction across various early childhood education settings.

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