International Journal of Islamic Thought and Humanities
Published by Sekolah Tinggi Agama Islam Taruna Surabaya
Vol. 4 No. 1 March 2025, pp. 145-153
DOI: https://doi.org/10.54298/ijith.v4i1.376

Creating Masjid Miniature from Ice Cream Sticks: An Islamic STEAM Learning to Increase Students' Creativity in Pandan Jaya Guidance Studio, Malaysia

Zaifatur Ridha[1], Usmaidar[2], Muamar Alqadri[3], Nurmisdaramayani[4], Maya Viada[5], Nia[6]
[1,2,3,4,5,6] Institut Jam`iyah Mahmudiyah Langkat, Indonesia
Corresponding Email:[1]Zaifatur_Ridha@staijm.ac.id
Received: 01-02-2025 Reviewed: 04-03-2025 Accepted: 01-05-2025

Abstract
Activities at the Pandan Jaya guidance studio show that motor skills can positively influence children's creativity. Good motor skills can improve children's cognitive abilities, which ultimately support the development of students at the Pandan Jaya guidance studio and impact cognitive development and improved learning outcomes. This study examines the effectiveness of the Islamic STEAM (Science, Technology, Engineering, Arts, Mathematics) *Learning approach in improving students' creativity and motor skills by making miniature mosques from ice cream sticks at the Pandan Jaya Guidance Studio, Malaysia. Creativity and motor skills are two important aspects in children's development that are interrelated and support the learning process holistically. This study uses a descriptive qualitative approach with a participatory method. Data collection techniques include observation, interviews, and documentation of students directly involved in practical activities. The study's findings indicate a strong connection between students' involvement in creative activities and the development of their motor skills. Students who actively participated in art and physical activities were observed to have better body coordination and demonstrated more innovative thinking patterns. The observations also revealed that an interactive and spiritually enriched learning environment enhanced the Islamic STEAM approach's effectiveness in supporting cognitive and non-cognitive development. Based on these findings, this study recommends the integration of Islamic value-based STEAM learning into the children's educational curriculum, both in formal and non-formal settings.*

Keywords: *Islamic STEAM Learning, Creativity, Miniature*.

Introduction

Quality education relies on cognitive mastery and includes non-cognitive aspects such as creativity and motor skills. These two aspects are important components in forming students who are not only academically intelligent but also able to think critically, innovate, and have good physical abilities to face life's challenges. Creativity, in education, refers to students' ability to generate new ideas and original solutions to problems. Meanwhile, motor skills refer to students' physical abilities in performing movements that require coordination between the body and the brain (Gabbard, 2021).

Creativity in the context of education refers to the ability of students to generate new and original ideas and develop solutions to various problems faced. Meanwhile, motor skills are related to students' physical ability to perform movements involving coordination between the body and the brain. These motor skills can be divided into two categories: gross motor skills, which involve large body movements, and fine motor skills, which involve hand and

finger movements. Education and culture are two interrelated aspects. Education reflects cultural values. Cultural differences also create differences in the education system.

In general, motor skills are divided into two types: gross motor skills, which involve large movements such as walking, jumping, or running; and fine motor skills, which involve small movements such as writing, painting, and cutting. Previous studies have shown that well-developed motor skills can support improved cognitive function and increase creativity (Haga, 2009). In addition, art-based learning approaches and physical activities such as STEAM (Science, Technology, Engineering, Arts, Mathematics) effectively stimulate both aspects simultaneously (Andriyani & Hidayati, 2022). According to Metafisika et al. (2022), the Islamic STEAM-based learning approach has significantly increased children's creativity, especially if delivered through contextual and engaging media such as activity story books.

Education can be a vehicle for transferring cultural values (D. Wulandari et al., 2023). This study aims to examine the relationship between creativity and motor skills in students under the guidance of the Pandan Jaya Studio, and to explore how these two aspects influence each other in the academic and non-academic development of learners. Education serves not only as a means of acquiring knowledge, but also as a process to develop individual potential, shape character and personality, and foster a learning environment that is active, conducive, and aligned with students' abilities. The interaction process between students, educators, and learning resources involves obtaining knowledge of the material through phenomena. Thus, learning must be linked to students' cultural background or phenomena often encountered to produce meaningful learning. Child development is greatly influenced by various cognitive, social, emotional, and physical aspects.

Creativity and motor skills are often viewed as two separate elements in education. Both have a close relationship, especially in the development of students from early childhood to elementary school age. Existing research shows that developing creativity can improve students' motor skills, and vice versa, good motor skills can improve the creative aspect of learning. However, there is still a lack of research exploring the interaction between the two in Indonesian education, especially at the elementary school level. In addition, the many external factors that influence both, such as education policies, curriculum, and students' physical conditions, also pose challenges in developing these two abilities optimally.

Although creativity and motor skills have been proven to play an important role in children's development, formal education practices still focus solely on cognitive achievement, such as academic grades and standardized tests. In many elementary schools, activities that stimulate fine motor skills, such as fine arts (painting, stringing, shaping), or gross motor skills, such as physical games and sports, have not become a core part of the daily learning curriculum.

In addition, the lack of integration between arts, sports, and science learning in one integrated learning unit (such as the STEAM approach) is an obstacle to optimally developing children's creativity. Activities that are "hands-on" are often considered complementary, not the central part of learning. As a result, children's potential for critical thinking, creative problem solving, and body coordination has not been optimally explored in formal environments. This finding aligns with previous studies (Andriyani & Hidayati, 2022),

revealing that arts-based programs can increase creativity and motor skills. However, many schools still lack the facilities and spaces for such expression. Thus, this fact confirms the importance of developing a comprehensive educational approach, such as that carried out by Pandan Jaya Guidance Studio through the miniature mosque program from ice cream sticks, because it successfully combines motoric elements, art, and creativity in an integrated and applicable manner.

Creativity and motor skills are two important aspects in children's growth and development that support the learning process, exploration, and social interaction. Activities outside of school, such as those at Sanggar Bimbingan Pandan Jaya, are expected to be an effective forum for developing these two abilities. The guidance studio not only functions as a place to develop academic abilities, but also as a means to develop non-academic potential, such as art, sports, and social skills.

Although several studies have highlighted the importance of creativity and motor skills in child development, several gaps in research have not been explored in depth, especially in the context of non-formal learning and an integrated approach based on Islamic STEAM. Little Empirical Evidence on Simple Creative Practice Activities (Such as Miniatures) in Improving Motor and Cognitive Skills. Although art activities are known to be effective in developing fine motor skills, only a few studies have explored applicable and straightforward activities such as making miniatures (from ice cream sticks) as a learning medium that impacts two aspects at once. For example, Susanti's (2024) research examined art activities in a guidance studio, but the focus was only on creativity without explicitly measuring motor skills.

Therefore, this study explores how activities at the Pandan Jaya Guidance Studio contribute to developing students' creativity and motor skills. The number of children participating in the studio continues to grow, indicating its relevance and appeal. The Pandan Jaya Guidance Studio plays a significant role in nurturing students' potential, particularly in art and sports, which are believed to enhance creative expression and physical coordination.

Literature Review

STEAM is an interdisciplinary learning approach that combines Science, Technology, Engineering, Art, and Mathematics as a single critical and creative thinking process. In Islamic education, STEAM can be integrated with Islamic spiritual and ethical values (Islamic STEAM) so that the learning process produces intellectually intelligent students and characterful ones.

The project-based STEAM approach involves students as active subjects who explore ideas, solve problems, and create real works. It is in line with Amabile's (2018) opinion that creativity in education does not only depend on natural talent but is also influenced by an environment that provides space for exploration, social support, and freedom to create.

Several studies have shown that motor skills can positively affect children's creativity. According to Haga's research (2019), good motor skills can improve children's cognitive abilities, which supports the development of creativity in reproduction. Other research by Ross and Kelly (2020) also found that physical activities involving motor skills can improve creative

thinking processes. These activities help increase blood flow to the brain and stimulate cognitive function.

On the other hand, creativity is also influenced by various factors such as a supportive learning environment, freedom to express ideas, and support from teachers and parents (Amabile, 2021). Creativity is related to artistic ability or imagination and the ability to solve problems in new and innovative ways. In education, it is important to integrate these two elements to support students' holistic development.

Arts and engineering-based activities in STEAM learning directly stimulate imagination, divergent thinking, and problem solving, key indicators of creativity. In this journal, creating a miniature mosque from ice cream sticks reflects a form of STEAM implementation that stimulates students' creativity.

According to Smith et al. (2020), students who engage in arts-based learning and experimentation tend to demonstrate original ideas and flexibility of thinking because they are accustomed to combining visual, spatial, logical, and aesthetic elements. In addition, Ross & Kelly (2020) found that engaging in physical creative activities such as building models or playing music can strengthen connections between neurons that play a role in creativity.

STEAM is also very relevant in developing motor skills, excellent motor skills, and visual-motor coordination. Activities such as cutting, pasting, arranging, and painting in miniature projects require precision of hand movements, concentration, and sensory-motor integration. Haga (2019) states that well-developed motor skills will improve cognitive abilities, supporting creativity. It is reinforced by Gabbard (2020) in his theory of motor learning that physical processes involving the hands and body can stimulate the brain's frontal area, which is responsible for logical and creative thinking.

Various studies have assessed the relationship between creativity and motor skills in students. Research conducted by Smith et al. (2020) found that children with higher levels of creativity tend to have better motor skills because they are often involved in activities involving physical movement and using creative tools (Smith, 2020). In contrast, research by Jones and Wilson (2021) shows that good motor skills can increase children's self-confidence, which in turn can support the development of their creativity in various aspects of life. In addition, research by Andriani et al. (2022) revealed that integrated educational programs, which combine the development of creativity and motor skills, can positively impact children's abilities in various fields.

Various theories related to developing creativity and motor skills in children also form the basis of understanding in this study. Piaget (1952) in his theory of cognitive development states that creativity is part of a child's intellectual development, which is closely related to the ability to adapt to the environment. Meanwhile, according to Newell (1986), motor theory emphasizes the importance of motor skills in facilitating the physical development and coordination of the child's body, which is very important in their daily lives.

Creativity is an important aspect influencing life to produce innovation and new developments. In the environment of life, we will need a creative individual who can meet the needs of the surrounding environment that is constantly changing. Every child has creative

potential, one of which is the characteristics of a creative individual, namely, high imagination. Factors influencing children's creativity are: 1) Personality, 2). Intrinsic Motivation, and 3). Environment. Imagination is a power of thought that produces an image of an object that can be thought possible or logical, and is only obtained from reality or a person's direct experience.

Imagination plays a significant role in developing children's creativity because a person's ability to think is carried out without any limitations, as widely as possible, and with multiple perspectives in responding to a simulation. With imagination, children can develop their thinking and creativity without being limited by reality, and for example, imagine or create images (paintings, compositions, etc.) of events based on reality or someone's experience.

Creativity can be developed in various ways; for example, we can transform bottles or cans into piggy banks. However, in educating and nurturing children so that creativity continues to be honed, we must also pay attention to the steps. According to Tika Bisono M.Psi, four steps can be taken to hone children's creativity. The first is Capturing. Capturing means not letting go of any ideas expressed by the child. Every time the child expresses an idea, we ask what the idea is. We can divert his attention if it is inappropriate, but do not protest.

The second is surrounding. In this step, we can allow children to expand their social circle. The goal is none other than for children to be able to interact and get to know friends of the same age. Gradually, children can create creative ideas based on their experiences interacting with the environment. The next is Challenging, where parents are asked to challenge children to solve problems. Simple problems, for example, solving a game together with their parents. Invite and bombard children so that they can think, and do not let children have difficulties on their own. Moreover, the last is broadening, which is learning new things (Utami, 2017).

Research method

This study uses the Participatory Action Research (PAR) approach, a participatory, collaborative, and action-oriented research method that produces positive changes in a particular social environment. PAR is very relevant in education, especially in implementing Islamic STEAM Learning, because it allows researchers, teachers, and students to participate actively in the entire research and learning process.

This study's subjects were students at the Pandan Jaya Guidance Studio, Malaysia, who participated in a creative learning project involving the construction of miniature mosques using ice cream sticks as part of Islamic STEAM-based learning. The participants included 15 students aged 7 to 12. In addition to the students, teachers, facilitators, and parents were actively involved in the observation and reflection stages of the learning process.

The research began with a discussion between researchers and facilitators to identify the lack of creative and integrative learning methods grounded in Islamic values. As a response, the "Miniature Mosque from Ice Cream Sticks" project was developed as a learning medium. Together with teachers and students, a learning plan was designed to integrate STEAM principles and Islamic teachings. It included exploring mosque architecture, understanding its spiritual significance, and planning the technical steps to build the models.

During the implementation phase, students were divided into small groups and began constructing their miniatures under the guidance of facilitators. Throughout the activity, discussions were held to connect Islamic values such as the role of the mosque in Muslim communities, historical aspects of Islamic architecture, and work ethics based on Islamic teachings. The process was observed and documented through photographs, video recordings, and detailed field notes.

At the end of the activity, students, teachers, and facilitators conducted a reflection session to evaluate the learning experience, challenges encountered, and the observed growth in creativity and motor coordination. The insights gained from this reflection were used to refine future learning strategies at the studio.

Result\Findings

This study shows that the project-based Islamic STEAM approach implemented through the creation of miniature mosques from ice cream sticks has a positive impact on increasing student creativity, as well as the development of fine motor skills and understanding of Islamic values. The findings were analyzed through five PAR stages: (1) Problem Identification. Initial discussions with teachers and students found that most students experienced boredom in conventional learning and a lack of involvement in creative activities. No learning approach directly links science, technology, and art with the Islamic context. It is the basis for formulating actions to create contextual and religious learning methods. (2)

Action Planning. Planning is carried out collaboratively with teachers and students, including: Designing STEAM-based activities (Science, Technology, Engineering, Arts, Mathematics), Determining the design of miniature mosques based on Islamic architectural elements, Arranging the integration of Islamic values, such as beauty, the social function of mosques, and the importance of cooperation in Islam. (3) Action Implementation. The project lasted for two weeks and was divided into several sessions: Sessions 1-2: Introduction to the concept of mosques and Islamic values related to places of worship. Session 3-4: Introduction of STEAM elements in the project (building structure, balance, creativity of form).

Session 5-6: Students build a miniature mosque in groups, using motor skills and teamwork. (4) Tangible results: Students demonstrate perseverance and accuracy in cutting, arranging, and gluing sticks. They begin to understand the concept of geometry, building structure, and design principles through direct practice. Islamic values such as cooperation (ta'awun), beauty (jamal), and responsibility are reinforced through activities. (5)

Observation and Documentation During the implementation, the researcher noted that students showed high enthusiasm for the tasks. Creativity emerged in variations in the shape of domes, towers, and mosque decorations. Additionally, there was an increase in fine motor coordination and the ability to complete tasks collaboratively. Visual documentation showed the transformation from design to aesthetic and functional final products.

Reflection was conducted with teachers and students. Students said they felt they "understood the function of the mosque better" and "enjoyed learning by making." Teachers

assessed that this method was effective in simultaneously teaching scientific concepts and Islamic values. However, challenges arose in the limitations of materials and time, but these could be overcome with adaptation and improvisation.

The results of this study align with the theory of constructivism, where students build knowledge through direct experience (Piaget, 1976). The Islamic STEAM approach increases creativity because it involves open-ended problem-solving and free design, develops fine motor skills through handicraft activities (fine motor coordination), and fosters religious values and character by linking science and art in an Islamic context (Alleyne & Foutz, 2020). This finding also supports previous studies stating that contextual STEAM learning can simultaneously develop various domains of student intelligence, including spirituality (Beers, 2020).

Conclusion

This study concludes that the project-based Islamic STEAM approach through the activity of making miniature mosques from ice cream sticks has proven effective in: Increasing students' creativity, which is reflected in their ability to design and realize various forms of miniature mosques innovatively and aesthetically, developing fine motor skills, especially hand-eye coordination, accuracy, and perseverance in assembling and decorating miniatures, instilling Islamic values such as cooperation, beauty in Islam (al-jamal), responsibility, and the social function of the mosque as the center of people's lives and increasing engagement and motivation to learn, because students feel that learning is more enjoyable, meaningful, and by the reality of their lives and faith.

The Participatory Action Research (PAR) method has succeeded in creating a reflective space for students and teachers to continue to develop a collaborative, contextual, and sustainable learning process.

Declaration of Conflicting Interest

As researchers, we affirm that during the writing of this article, we have no professional, personal, or financial interests that may affect the credibility of the research results. The research was conducted independently, focusing on academic honesty and scientific integrity. The main objective of this research is to make a significant contribution to the development of the field of education, especially by expanding understanding and opening new doors for educators, academics, and related stakeholders. We hope that the results of this research will not only serve as a scientific reference and encourage good educational practices in various environments.

Acknowledgements

The authors would like to express their deepest gratitude to Mr. H. Muhizar Muchtar, MS, Head of the Jam'iyah Mahmudiyah Langkat Foundation, and Dr. Muhammad Saleh, S.H.I., M.A., Rector of the Jam'iyah Mahmudiyah Langkat Institute, for their invaluable institutional support. Special thanks to Dr. Ahmad Fuadi, M.Pd.I., Vice Rector I and supervising lecturer, for his continuous academic guidance throughout the project.

The authors also thank Ustadz Fauzi Al-Faizin for his mentorship during the Pandan Jaya, Kuala Lumpur program. They also thank all participants for their excellent collaboration

and the Pandan Jaya community for their warm reception and cooperation. Finally, they give heartfelt thanks to the authors' families for their unwavering support and encouragement. All errors and omissions in this research remain the responsibility of the authors.

References

Amabile, T. M. (2018). *Creativity in context: Update to the social psychology of creativity*. Routledge.

Anggraeni, A. D. (2019). Studi Fenomenologi: Pola Asuh Orangtua Pada Pembelajaran Motorik Halus Anak Attention Deficit Hyperactivity Disorder (Adhd) Usia Pra Sekolah. Jurnal Ilmu Kesehatan Bhakti Husada: Health Sciences Journal. https://doi.org/10.34305/jikbh.v10i2.89

Astina, D. I. S. D. N., Pendidikan, J. T.,& Pendidikan, F. I. (2017). Pengembangan Game Edukatif Dalam Muatan Pelajaran Matematika Pada Siswa Kelas Iii. E- Journal Edutech, 2

Andriyani, S., & Hidayati, A. (2022). Pengaruh program pendidikan berbasis seni terhadap kreativitas dan keterampilan motorik pada anak usia sekolah. *Jurnal Pendidikan Anak Usia Dini, 2*(12), 87–95.

Chandra, S., & Taufiq, D. (2022). The influence of creative activities on motor skill development in primary school students. *International Journal of Early Childhood Education*, 8(3), 75-85.

Gabbard, C. (2021). *Lifelong motor development*. Lippincott Williams & Wilkins.

Haga, M. (2009). Physical fitness in children with high motor competence differs from that in children with low motor competence. *Physical Therapy*, *89*(10), 1089–1097.

Metafisika, K., Azizah, R. N., & Fitriyah, F. K. (2022). The development process of Islamic STEAM activity storybooks for early childhood. *Child Education Journal*, *4*(1), 1–12.

Bastian, A. J., & Watkins, M. L. (2021). The relationship between motor skills and creativity in school-aged children: A longitudinal study. *Journal of Educational Psychology*, 113(4), 592–607.

Gonzalez, R., Lopez, M., & Hernandez, J. (2019). The role of motor skills in children's creativity development: A longitudinal study. *Child Development Research*, 8(3), 134-142.

Sugiharto, T., & Mulyadi, A. (2023). Pengaruh Program Pembelajaran Terpadu terhadap Kreativitas dan Keterampilan Motorik Siswa Sekolah Dasar. *Jurnal Pendidikan Anak Usia Dini*, 7(1), 55-67.

Susanti, E. (2024). Pengembangan kreativitas melalui seni di sanggar bimbingan: Studi kasus pada siswa sekolah dasar. *Jurnal Pengabdian Masyarakat*, 52(1), 45-58

Supriyono , H. (2018). Penerapan GameEdukatif Untuk MeningkatkanMotivasi Belajar Siswa Setingkat Madrasah Ibtidaiyah. Warta LPM, 21(2), 30–39. Https://Doi.Org/10.23917/Warta.V21i2.4939

Utami, Nur Elni. 2017. Jurnal Upaya Meningkatkan Kemampuan Kognitif Melalui Kegiatan Meronce, Vol.1, No.1.