MATHEMATICS EDUCATION BASED ON LOCAL WISDOM: LEARNING STRATEGIES THROUGH *HOMBO BATU*

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Abstrak

Penelitian ini bertujuan untuk mengeksplorasi penerapan pendidikan matematika berbasis kearifan lokal melalui strategi pembelajaran menggunakan permainan tradisional Hombo Batu. Kearifan lokal dianggap sebagai sumber daya yang berharga dalam memperkaya proses pembelajaran dan meningkatkan pemahaman siswa terhadap konsep-konsep matematika. Melalui pendekatan ini, siswa tidak hanya belajar secara teoritis, tetapi juga dapat mengaitkan materi dengan pengalaman sehari-hari mereka, yang meningkatkan motivasi dan keterlibatan mereka. Hasil studi pustaka menunjukkan bahwa Hombo Batu dapat berfungsi sebagai media pembelajaran yang interaktif, mendukung pengembangan keterampilan sosial, serta memperkuat identitas budaya siswa. Meskipun terdapat tantangan dalam implementasinya, seperti kurangnya pelatihan bagi guru dan keterbatasan sumber daya, rekomendasi untuk integrasi kearifan lokal dalam kurikulum pendidikan matematika dapat membantu menciptakan pengalaman belajar yang lebih bermakna. Penelitian ini diharapkan dapat memberikan wawasan bagi pengembangan metode pembelajaran yang lebih relevan dan efektif dalam konteks pendidikan.

Kata Kunci: Pendidikan Matematika; Kearifan Lokal; Hombo Batu; Strategi Pembelajaran; Permainan Tradisional; Motivasi Siswa.

Abstract

This study aims to explore the application of local wisdom-based mathematics education through learning strategies using the traditional game Hombo Batu. Local wisdom is considered a valuable resource for enriching the learning process and enhancing students' understanding of mathematical concepts. Through this approach, students not only learn theoretically but also connect the material to their daily experiences, which increases their motivation and engagement. The results of the literature review indicate that Hombo Batu can serve as an interactive learning medium, supporting the development of social skills and strengthening students' cultural identity. Although there are challenges in its implementation, such as a lack of training for teachers and limited resources, recommendations for integrating local wisdom into the mathematics education curriculum can help

create more meaningful learning experiences. This study is expected to provide insights for the development of more relevant and effective teaching methods in the educational context.

Keywords: *Mathematics Education; Local Wisdom; Hombo Batu; Learning Strategies; Traditional Games; Student Motivation.*

A. Introduction

Mathematics education is an essential aspect of learning that facilitates the development of students' logical and critical thinking skills. However, mathematics content is often taught theoretically and detached from cultural contexts and daily life. This can lead to students feeling less connected to the material, affecting their interest and understanding. Mathematics education plays a crucial role in forming the foundation of critical and logical thinking for students. In the era of globalization and rapid technological advancement, mathematical skills are not only a requirement in academic fields but also highly sought after in the job market. Despite its importance, mathematics education often faces various challenges, such as less engaging teaching methods and a lack of relevance to students' daily lives (Gee., E, Harefa., 2021).

As a fundamental discipline, mathematics plays a vital role in developing critical and logical thinking skills. However, mathematics learning is often trapped in abstract and theoretical approaches, making it difficult for students to relate concepts to everyday experiences. This results in low interest and understanding of mathematics among students, leading to unsatisfactory learning outcomes. In the Indonesian context, the diversity of culture and rich local wisdom can be utilized to enrich the mathematics learning experience. Local wisdom embodies values, traditions, and knowledge that have existed for a long time and are relevant to community life. By integrating local wisdom into mathematics education, students can more easily understand mathematical concepts through familiar and engaging contexts (Harefa, 2022).

The application of mathematics based on local wisdom not only makes learning more contextual but also strengthens students' cultural identity. For instance, through traditional games, teaching aids, or local community practices, students can explore mathematical concepts directly and applicably. This approach helps students view mathematics as an integral part of daily life, rather than just a subject in school. Furthermore, local wisdom-based mathematics education has the potential to enhance student motivation and engagement in the learning process. By linking mathematical content to experiences and cultures they know, students will feel

more connected and motivated to learn. This also encourages the development of positive attitudes toward mathematics and strengthens their understanding of the concepts being taught (Harefa, 2019).

Most mathematics learning tends to be theoretical, making it difficult for students to relate the concepts being taught to real situations. As a result, many students struggle to understand the material and feel less interested in learning mathematics. Therefore, it is essential to develop more contextual and engaging learning approaches so that students can see the relevance of mathematics in their lives (Harefa, 2020). One approach that can be implemented is local wisdom-based mathematics education. This approach emphasizes the use of local values, traditions, and knowledge as the foundation for the learning process. Local wisdom not only enriches the learning experience but also helps students better understand and appreciate their own culture. By utilizing traditional games, tools, or practices found in their surroundings, mathematics learning becomes more contextual and enjoyable (Harefa et al., 2023).

In an effort to bridge this gap, local wisdom-based education emerges as an approach that uses cultural context as a foundation for the learning process (Artawan, 2023). Local wisdom contains values, traditions, and knowledge that have been passed down through generations, enriching students' learning experiences. One example of a traditional game that embodies these values is Hombo Batu, a game popular among Indonesian communities Depdiknas. (2006).

Hombo Batu not only teaches strategies and skills for playing but also integrates mathematical concepts such as counting, patterns, and logic. Through this game, students can understand and apply mathematical concepts in a more familiar and enjoyable context (Nurmasyitah et al., 2022). Thus, local wisdom-based mathematics learning through Hombo Batu can enhance student interest and help them develop mathematical skills in a more relevant and contextual manner (Laiya, Rebecca E dan Sarumaha, 2018).

The implementation of local wisdom-based mathematics education can not only improve student motivation and understanding but also strengthen their cultural identity. Through this approach, it is hoped that students will not only learn mathematics as a discipline but also integrate that knowledge into their daily lives, making them more skilled and culturally aware individuals (Sarumaha & Gee, 2021). Therefore, it is crucial to explore various methods and strategies in mathematics education that utilize local wisdom to create more effective and enjoyable learning experiences. This research aims to explore and analyze the

application of this approach in the context of mathematics education and to identify its impact on student understanding and motivation (Hidayat et al., 2020).

Mathematics education plays an important role in equipping students with logical, analytical, and problem-solving skills needed in various aspects of life. However, in practice, many students struggle to understand the mathematical concepts taught in class, often due to teaching methods that are less engaging and relevant to everyday life (Ausubel, 2019). To address this issue, innovative and contextual learning approaches are needed. One strategy that can be applied is to utilize traditional games, such as Hombo Batu. This game is not only popular among children but also embodies rich cultural values and can serve as an effective medium for mathematics learning. Through Hombo Batu, students can learn about strategies, counting, patterns, and logic directly while having fun and interacting with their peers.

The application of Hombo Batu in mathematics learning offers a more interactive and enjoyable learning experience. Students are not only taught mathematical concepts theoretically but can also apply them in familiar real-world contexts. This way, students will find it easier to understand and remember these concepts, thus increasing their motivation to learn. Additionally, learning through games can help develop students' social and emotional skills, such as cooperation, communication, and healthy competition. Hombo Batu, which involves interaction among players, creates a supportive and inclusive learning environment. In this context, mathematics is not just seen as a subject, but as an integral part of culture and daily life .

Therefore, it is essential to delve deeper into the application of local wisdom-based mathematics education. This research aims to explore the strategies and practices that can be used to integrate local wisdom into mathematics learning and to analyze its impact on student understanding and interest. It is hoped that mathematics education can become more relevant, effective, and meaningful for students while respecting and preserving local cultural values. The implementation of this learning strategy is expected to contribute positively to improving the quality of mathematics education, strengthening students' cultural identity, and encouraging them to appreciate local values in the learning process. Through this research, a deeper understanding of the effectiveness of local wisdom-based mathematics learning and its impact on the development of student skills is anticipated.

B. Research Methodology

In this study, the method used is library research, which aims to examine and analyze literature relevant to the topic

"Mathematics Education Based on Local Wisdom: Learning Strategies Through Hombo Batu (Sarwono, 2012)." This method will involve the following steps:

1. **Identification of Literature Sources**

   The researcher will identify various relevant literature sources, including books, journal articles, dissertations, and other publications that discuss mathematics education, local wisdom, and traditional games, particularly Hombo Batu. The search for sources will be conducted through academic databases, libraries, and trusted online platforms.

2. **Categorization of Sources**

   After gathering the relevant sources, the researcher will categorize them based on specific themes, such as:

   a. Fundamental concepts of local wisdom-based mathematics education.
   b. Effective mathematics learning methods.
   c. The impact of traditional games in education.
   d. Case studies on the use of Hombo Batu in educational contexts.

3. **Content Analysis**

   Next, the researcher will analyze the content of each categorized source. This analysis will include an understanding of educational theories, best practices in learning, and empirical findings that support the use of Hombo Batu as a mathematics learning tool. The researcher will also look for connections between local wisdom values and the proposed learning approach.

4. **Synthesis and Discussion**

   After the content analysis, the researcher will synthesize the information obtained to build a comprehensive understanding of how local wisdom-based mathematics education can be implemented through learning strategies using Hombo Batu. The discussion will include the advantages and challenges that may be faced in implementing this approach.

5. **Conclusion and Recommendations**

   At the end of the study, the researcher will formulate conclusions based on the findings from the literature analysis and provide recommendations for educational practice, further research, and curriculum development that leverages local wisdom in mathematics learning.

This library research methodology is expected to provide in-depth and comprehensive insights into effective mathematics learning strategies while highlighting the importance of integrating local wisdom into education.

C. Research Findings and Discussion

Research Findings

The library research on "Mathematics Education Based on Local Wisdom: Learning Strategies Through Hombo Batu"

yielded several key findings that illustrate the potential and effectiveness of this approach in the educational context. The main results obtained from the literature review are as follows:

1. **Relevance of Local Wisdom in Mathematics Education**

   Local wisdom, which encompasses cultural values, traditions, and community knowledge, proves to be a rich resource for enriching mathematics learning. Integrating local wisdom can help students better understand mathematical concepts, as the learning material becomes more relevant to their daily experiences.

2. **Use of Hombo Batu as a Learning Medium**

   Hombo Batu, as a traditional game, offers an interactive and enjoyable way to teach mathematical concepts such as counting, patterns, and logic. Through this game, students can learn while interacting and socializing, which can enhance their motivation and engagement in learning.

3. **Improvement in Mathematics Understanding**

   Various studies indicate that mathematics learning conducted through local wisdom-based approaches, such as Hombo Batu, can improve students' understanding of mathematical concepts. Students tend to remember and apply the material taught more easily when they can relate it to familiar contexts.

4. **Positive Impact on Social Skills**

   In addition to enhancing mathematics understanding, traditional games also contribute to the development of students' social skills, such as cooperation, communication, and leadership. Through Hombo Batu, students learn to work in teams and appreciate each member's role.

5. **Challenges in Implementation**

   Despite the promising nature of this approach, there are challenges to be faced in its implementation. Some of these challenges include a lack of training for teachers in applying this method, resource limitations, and the need for support from parents and the community to create a conducive learning environment.

6. **Recommendations for Curriculum Development**

   The research findings suggest that the mathematics education curriculum in schools should incorporate elements of local wisdom, including traditional games like Hombo Batu. This can be achieved through teacher training, the preparation of relevant teaching materials, and collaboration with the community to integrate local culture into the learning process.

Overall, this research demonstrates that local wisdom-based mathematics education,

particularly through learning strategies using Hombo Batu, has great potential to enhance students' understanding and make learning more engaging and meaningful. Collaborative efforts are needed to address the existing challenges to ensure effective implementation of this approach in the classroom.

Discussion

The discussion regarding "Mathematics Education Based on Local Wisdom: Learning Strategies Through Hombo Batu" covers several important aspects that highlight the relationship between local wisdom, mathematics education, and the effectiveness of learning methods. The main points derived from the literature review are as follows:

1. **Significance of Local Wisdom in Learning**

   Local wisdom serves not only as a cultural context but can also be a powerful pedagogical tool in education. Integrating local wisdom into mathematics learning can help students feel more connected to the material being taught, encouraging them to view mathematics as an integral part of everyday life rather than an isolated discipline.

2. **Interactivity Through Games**

   Hombo Batu as a traditional game creates an interactive learning environment. In this game, students not only learn mathematical concepts but also experience an active learning process. Interaction with peers enhances student engagement and encourages strategic thinking. Through the game, concepts such as counting, patterns, and logic are taught naturally and enjoyably.

3. **Impact on Student Motivation and Engagement**

   Research shows that using game-based methods, such as Hombo Batu, can enhance students' motivation to learn. When students engage in activities they enjoy, their interest in mathematics increases. This engagement is crucial for creating a positive and productive learning atmosphere.

4. **Development of Social Skills**

   In addition to academic aspects, learning through Hombo Batu also contributes to the development of students' social skills. This game involves cooperation, communication, and healthy competition, all of which are essential skills for everyday life. By learning to interact in groups, students can build confidence and the ability to work in teams.

5. **Challenges in Implementation**

   Despite the promise of this approach, there are challenges that need to be addressed for successful implementation. A primary challenge is the lack of training and understanding among teachers regarding local wisdom-based learning methods. Additionally,

there are challenges related to the availability of resources, such as appropriate teaching aids and materials. Support from various parties, including government, schools, and the community, is required to overcome these obstacles.

6. **Recommendations for Educational Practice**

   Based on the research findings, it is recommended that the mathematics education curriculum be integrated with elements of local wisdom, including traditional games. Teachers need to be trained to effectively use this approach, and collaboration with local communities can help strengthen the connection between education and culture.

This discussion highlights that local wisdom-based mathematics education through learning strategies like Hombo Batu can have significant positive impacts on student understanding and motivation. Although there are challenges in its implementation, collaborative efforts and appropriate support can make this approach an effective alternative in mathematics learning. Integrating local values into education not only enriches the learning experience but also strengthens students' cultural identity.

D. **Conclusion**

Summary

This research demonstrates that local wisdom-based mathematics education, particularly through learning strategies that utilize traditional games like Hombo Batu, has significant potential to enhance students' understanding and motivation. The integration of local wisdom into mathematics learning makes the material more relevant and contextual, allowing students to more easily relate mathematical concepts to their everyday experiences.

Hombo Batu, as a learning medium, not only provides an interactive and enjoyable learning experience but also encourages the development of social skills, such as cooperation and communication. Although there are challenges in implementing this method, such as a lack of training for teachers and resource limitations, support from various parties—including schools, government, and the community—can help overcome these barriers.

Overall, the approach of local wisdom-based mathematics education through Hombo Batu not only contributes to improving the quality of education but also strengthens students' connection to their local culture. Therefore, it is essential to recommend the integration of local wisdom elements into the mathematics education curriculum to create a more effective and meaningful learning environment.

Suggestions

Based on the findings and discussions in this research, several suggestions can be made to optimize the application of local wisdom-based mathematics education through learning strategies using Hombo Batu:

1. **Teacher Training**

   Conduct focused training for teachers to help them understand and effectively implement local wisdom-based learning methods. This training could cover teaching techniques, curriculum development, and ways to utilize traditional games in the teaching process.

2. **Curriculum Development**

   Encourage the development of a curriculum that integrates elements of local wisdom and traditional games. This curriculum should be designed to create a balance between theory and practice, enabling students to learn mathematical concepts within their cultural context.

3. **Resource Provision**

   Provide teaching aids and materials that support game-based learning. Schools and the government need to invest in resources that can assist teachers and students in applying this method.

4. **Collaboration with the Community**

   Promote collaboration between schools and the community to introduce and popularize traditional games among students. This activity can involve parents and other community members, thereby creating a more supportive learning environment.

5. **Ongoing Evaluation and Research**

   Conduct regular evaluations of the effectiveness of the applied learning methods. Further research is also needed to explore the long-term impacts of this approach on students' understanding of mathematics and their attitudes towards the subject.

6. **Promotion of Cultural Values**

   Educate students about the importance of local wisdom and cultural values in learning. This not only enriches their learning experience but also strengthens their cultural identity and pride in their local heritage.

By implementing the above suggestions, it is hoped that local wisdom-based mathematics education through Hombo Batu can become an effective and sustainable method, providing significant benefits for students and the community.

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