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LITERATURE REVIEW : THE IMPORTANCE OF BASIC MATHEMATICS EDUCATION AND ITS APPLICATION IN LIFE

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Abstrak

The purpose of this study is to examine the important of basic mathematics education by reviewing various examples of its application in daily life. This study employed a literature review method. The data were collected from relevant journals on the application of mathematics in everyday life through identification and analysis. The results indicate that mathematical concepts play a significant role in human life, as mathematics is frequently applied in daily activities, both consciously and unconsciously. This finding highlights the importance of continuously studying mathematics in education

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INTRODUCTION

Education is a necessity for every human being on earth. Through education, humans continuously develop themselves, innovate, and create, improving their lives. Therefore, as leaders on earth, humans are constantly striving to seek knowledge. This aligns with the proverb that says "knowledge must be sought even as far as China" (Harahap, 2019). Another proverb emphasizes that knowledge must be sought or learned from birth until death (Iswati, 2020). This demonstrates the role of education in the world, which is both valuable and essential, and must be possessed by every human being. Education can equip each individual to face challenges and problems that may arise. This is stipulated in Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System, which outlines the foundations, functions, and objectives of education.

Chapter II, Article 3, states that: "National education functions to develop abilities and shape the character and civilization of a dignified nation in order to educate the nation. It aims to develop the potential of students to become people who believe in and fear God Almighty, have noble character, are healthy, knowledgeable, capable, creative, independent, and become democratic and responsible citizens."

One subject that is always present, or perhaps even mandatory, in formal education

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is mathematics. Mathematics, as a universal science, plays a vital role in all aspects of life. Therefore, it is difficult to imagine a situation in which individuals lack basic mathematical knowledge. Therefore, mathematical knowledge and understanding are considered crucial. This is also evident in the first and fifth points concerning the objectives of mathematics learning according to the Regulation of the Minister of National Education (Regulation of the Minister of National Education of the Republic of Indonesia No. 22 of 2006 concerning Content Standards for Elementary and Secondary Education Units, 2006).

Given this, it's not surprising that mathematics is studied for a minimum of almost 12 years in formal education. Because mathematics is indeed very important for its application in life. This aligns with Nugroho's statement (2012: 2), which explains that some mathematical materials, while seemingly complex in formulas, are actually often applied in real life, whether consciously or not. Based on the above description, it can be said that mathematics is one of the many important subjects in the education sector due to its application in life.

LITERATURE REVIEW

Basic Mathematics Education

According to Oktavianingtyas (2015), one of the determining factors for the success of national development is education. Education can improve human resources, thus accelerating the process of realizing national development goals for the advancement of the nation and state. Throughout its history, mathematics has been a fundamental skill required in education. From the past to the present, mathematics has been a mandatory basic education for students.

Basic mathematics education plays a crucial role due to its strong connection to other fields of knowledge. Mathematics is often regarded as the "mother of sciences" because it serves as the foundation for many disciplines. Basic mathematics education is the primary foundation for developing logic, numeracy, and problem-solving skills. Therefore, basic mathematics education must be studied for its relevance to the application of problem-solving in the real world.

The Importance of Mathematical Literacy

According to Kuswidi (2015), mathematical literacy is a person's ability to formulate, apply, and interpret mathematics in various contexts, including the ability to reason mathematically and use concepts, procedures, and facts to describe, explain, or predict phenomena/events. This indicates that mathematical literacy is not only focused on mastering concepts but also on applying reasoning, procedures, and mathematical tools to solve real-life problems. This is in line with Doman's opinion (2015), which states that teaching children about mathematical concepts from an early age is very important because in mathematics lessons, logic is used, which is an indicator of a child's intelligence. This shows that mathematical literacy also plays an important role in the growth and development of children's intelligence.

Critical Thinking Skills in Mathematics

The ability to think critically in mathematics is an essential skill that enables students to analyze, assess, and solve problems in a logical and structured manner. According to Gunawan (in Rachmantika et al., 2019), critical thinking is the ability to

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think at complex levels and use analytical and evaluation processes. In mathematics learning, critical thinking is not only about calculations or memorizing formulas, but also includes understanding concepts, recognizing patterns, and evaluating solutions. Students trained in critical thinking are able to ask questions and solve various problems, and draw conclusions that are in accordance with mathematical solutions. Critical thinking skills require an open mind based on facts, so that critical thinking skills can help evaluate problems objectively. Thus, Critical thinking skills in mathematics not only contribute to academic achievement but also prepare students to solve real-world problems effectively.

Application of Mathematics in Everyday Life

Mathematics is an important tool in everyday life because it can help solve various practical problems (Fauzi et al., 2021). In daily activities, the application of mathematics can be seen in managing personal finances, calculating household needs, and making decisions that require logical analysis.

Ethnomathematics as a Contextual Application of Mathematics

Ethnomathematics is a learning approach that links mathematical concepts to the culture and life of the surrounding community. The application of mathematics in everyday life is not limited to numerical calculations but is also evident in the shape and structure of buildings that utilize geometric concepts. For example, Safitri (2023) stated that the architecture of traditional houses, particularly the Joglo traditional house in Dasri Village, Banyuwangi, not only prioritizes aesthetics but also incorporates concepts of plane geometry, spatial geometry, congruence, and reflection.

RESEARCH METHODS

This study is qualitative in nature and employs a literature review method. Literature study is a data collection technique used to analyze various research findings and studies related to the current research (Yusuf et al., 2022). Therefore, the data were collected from relevant journals on the application of mathematics in daily life through analysis and review.

RESULTS AND DISCUSSION

The results of the research on "The Importance of Basic Mathematics Education and Its Application in Life" can be analyzed in terms of the role of mathematics and its applications in life. Therefore, using a literature review, several results from the search and conclusions from related articles are presented in the following table.

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Table 1: Analysis Results
Mathematical Applications

Researcher	Research Title	Research Results
(Janah, Suyitno & Rosyida, 2019)	The Importance of Mathematical Literacy and Critical Mathematical Thinking in Facing the 21st Century	This research was conducted to determine the importance of mathematical literacy in facing the 21st century. The results of this study indicate that in facing a society that is constantly changing (disruptive), mathematical literacy is indeed crucial in everyday life.
(Diputra, Sudiarta, & Wati, 2022)	Ethnomathematics: Application Of Mathematics In The Calculation Of Holy Days In Hindu And Banten	This research links mathematical concepts to culture. The research also applies the concept of the Least Common Multiple (LCM). Calculating holy days or holidays in Hinduism is very commonly done using the "wewaran" (instructions) or "pawukon" (instructions). These "wewaran" and "pawukon" (instructions) apply the concept of the LCM.
(Rohmah, 2018)	Application of Mathematics in Hajj	In his research, he linked the concept of the circle to the Hajj. Applications of mathematics in the Hajj include calculating the distance traveled during the tawaf (circumambulation) using the circumference formula and counting the total number of steps required to complete the sa'i (circumambulation).
(Side, Sukarna, & Jusriadi, 2020)	Mathematical Analysis of Toraja Stilt House Construction	This research uses basic geometric concepts as a reference. The equation $y = x^2$ is a quadratic equation used in the construction of Torajan stilt houses. Where y and x represent the distances between the midpoint and the other points, and x is the height of the beams forming the arch.

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(Isnaeni, Ansori, Akbar, & Bernard, 2019)	Analysis Of Junior High School Students' Mathematical Connection Abilities On Linear Equations And Inequalities With One Variable	This study used the concept of inequality systems and linear equations in one variable. The results showed that 71% of students applied relationships between mathematics subjects, 92% applied mathematics in other subjects, 80% - 85% applied mathematics in real life, and 58% were fluent in equivalent representations of the same concept. This resulted in an overall average score of 77%.
(Aini, 2018)	ETHNOMATHEMATICS: Mathematics in the Lives of Farmers in Karawang Regency	The research employed the concept of ethnomathematics, a mathematical concept linked to culture and even unconsciously applied in everyday life. The results showed that several farmers in Karawang apply mathematical concepts to their rice field management, such as determining the spacing between rice seeds and the length, area, and width of the fields.

Mathematics is not only an abstract discipline but also plays a vital role in everyday life, culture, and religious practices. Research by Janah, Suyitno, and Rosyida (2019) reveals that mathematical literacy is a crucial skill for facing the challenges of the 21st century, especially in a constantly changing society. This ability helps individuals understand and solve problems logically, both in academic and real-life contexts.

Furthermore, Diputra, Sudiarta, and Wati (2022) demonstrate how mathematics is integrated into culture, particularly in the calculation of Hindu holy days. They found that the concept of Least Common Multiple (LCM) is used in the wewaran and pawukon-based calendar system, which forms the basis for determining holidays. This demonstrates that mathematics is not merely a tool for calculation but also an integral part of tradition and belief. In the context of Islam, Rohmah (2018) examined the application of mathematics in the Hajj pilgrimage, particularly during the tawaf and sa'i (circumambulation). Using the formula for the circumference of a circle, pilgrims can calculate the distance traveled around the Kaaba, while arithmetic principles help determine the number of steps during the sa'i. These findings demonstrate how simple mathematical concepts can support ritual practices in a more measurable way.

In the field of traditional architecture, Side, Sukarna, and Jusriadi (2020) analyzed the construction of Torajan stilt houses using the quadratic equation $y = x^2$. This study revealed that the curved roofs of these traditional houses are designed based on geometric principles, demonstrating how mathematics plays a role in preserving cultural heritage.

Meanwhile, Isnaeni et al. (2019) evaluated junior high school students'

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mathematical connection skills in linear equations and inequalities. The results showed that most students were able to connect mathematics to real life (80-85%) and other subjects (92%), although their understanding of conceptual representation still needed improvement (58%). These findings emphasize the importance of contextual learning so that students see the relevance of mathematics in their world.

Finally, Aini (2018) explored the application of mathematics in traditional agriculture in Karawang Regency, where the results showed that several farmers in Karawang applied mathematical concepts in managing their rice fields.

CONCLUSION

The discussion of these various studies demonstrates that mathematics is not limited to theory but serves as a foundation for various aspects of life, from education and religion to culture and technology. Integrating mathematics into real-world contexts not only enriches academic understanding but also preserves local wisdom and facilitates human activities. Examples include mathematical calculations in the construction of Toraja stilt houses, the application of mathematics in the Hajj pilgrimage, which is used to calculate the distance traveled by someone performing the tawaf (circumambulation), and many other applications of mathematics in everyday life. Therefore, strengthening mathematical literacy must be continuously encouraged so that society can utilize it optimally. Mathematics is essentially an integral part of human activities in daily life.

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