

The Influence of Smart Cube Media on Beginning Writing Skills of First Grade Students of MIS Maura El Mumtaz

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This study aims to determine the effect of using Smart Cube media on improving the basic writing skills of first-grade students at MIS Maura El-Mumtaz. This study uses a quantitative approach with a pre-experimental one-group pretest-posttest design. The research sample consisted of 58 students. Data analysis techniques include normality tests, paired samples correlation tests, and t-tests. The results of the paired samples t-test showed a significant difference between the pretest (7.7414) and posttest (9.1724) scores, with a t-value of -5.844 and a p-value of 0.000 < 0.05. This proves that the use of Smart Cube media has a significant effect on improving students' basic writing skills. Although the correlation between pretest and posttest scores is relatively low (0.139), the effectiveness of the media is still statistically proven. Therefore, Smart Cube media can be used as an innovative learning alternative in improving the early literacy skills of elementary school students.

Keywords: Smart Cube, Basic Writing Skills

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1. Introduction

Learning is a process of interaction between educators and students that involves two-way communication. In this interaction, both educators and students are required to communicate effectively so that the material being taught can be understood well. This creates a conducive learning environment, where students feel comfortable asking questions and discussing. Good communication focuses not only on delivering material but also on developing students' social and emotional skills, so they can interact well both inside and outside the classroom (Sabarua, 2019:83).

One of the primary tools for communication in learning is language skills. This ability is crucial, especially in the context of education in Indonesia, where Indonesian is recognized as the language of instruction at various levels. Indonesian, a compulsory subject in elementary schools, plays a crucial role in equipping students with the necessary language skills (Sa'ida, 2018:17).

The Indonesian language subject focuses not only on speaking and writing skills but also includes reading and listening skills, which are essential for students' cognitive development. Good language skills will support students in understanding various concepts in other fields, such as mathematics and science. Therefore, mastery of Indonesian provides an essential foundation for students to undertake broader learning processes. In this context, it is crucial for educators to design engaging and interactive learning activities so that students can optimally develop their language skills.

The Indonesian language (Bahasa Indonesia) subject plays a crucial role in teaching and learning across all subjects. Through Indonesian language learning, students are taught various basic skills, including reading, writing, listening, and speaking (Putri Ningrat et al., 2018:258). These language skills are crucial for students to master because they not only support Indonesian language learning but also influence their

understanding of other subjects. With good language skills, students will more easily understand and digest information from various disciplines, enabling them to actively contribute to the learning process.

Writing skills are a key focus of language learning for students in elementary school. At the elementary level, particularly in the early grades, this skill is known as beginning writing. Mastering these beginning writing skills is crucial, as it lays the foundation for students to develop more complex writing skills later in life. Therefore, educators need to pay special attention by integrating effective writing exercises into the learning process so that students can acquire adequate writing skills from an early age.

Beginning writing is an essential activity in education, where students learn to draw or paint symbols representing language sounds into written form that conforms to the conventions of the sign system prevailing in society (Hilmawan, Darmawan, & Julianti, 2022:243). This skill serves not only as a communication tool but also as a foundation for developing more complex literacy skills. In the context of Indonesian language learning, beginning writing skills serve as a bridge for students to understand and master various other aspects of the language, such as reading and speaking.

Mastering good writing techniques at an early stage will have a significant impact on the development of students' academic abilities in the future. By mastering basic writing skills, students will not only find it easier to express their thoughts and ideas but will also increase their confidence in communicating in writing. This contributes to students' ability to learn other subjects, as writing is an integral part of many disciplines. In this context, it is important for educators to integrate basic writing skills into the learning process so that students have a strong foundation for higher literacy skills (Suastika, 2019:60).

However, despite the importance of early writing skills, many elementary school students have not yet mastered these skills. This problem is often caused by a lack of attention to early writing instruction in the classroom, as well as external factors such as limited support at home and lack of access to adequate learning resources. Therefore, to improve students' early writing skills, a more systematic approach to teaching is needed.

Writing skills are one of the basic competencies that must be mastered by students at the elementary education level, especially grade 1. However, in practice, many students still experience difficulties in writing correctly, especially in the initial writing stage. This difficulty is often caused by a lack of mastery of the alphabet, both in terms of shape recognition and phonetics. Based on observations conducted at MIS Maura El-Mumtaz, students in grades 1a and 1c experience various errors in basic writing, which indicates that their mastery of the alphabet and writing skills still need to be improved.

One of the most common problems encountered is a lack of mastery of the alphabet. Many students are unable to consistently recognize letter shapes, both uppercase and lowercase. This difficulty makes it difficult for them to distinguish between visually similar letters, such as "b" and "d" or "p" and "q." This directly impacts their writing skills, where errors in distinguishing these letters often result in misspelled and meaningless words. This condition indicates that students need a more intensive and systematic approach to teaching alphabet recognition.

In addition to difficulty recognizing letters, early grade students also frequently make mistakes when writing letters backward. For example, they write the letter "b" as "d" or "p" as "q." These errors are caused by students' immature visual-motor skills in distinguishing letter orientation. As a result, words they should have written correctly are misinterpreted or even meaningless. This problem indicates that more visual and interactive teaching methods can help students better understand letter shapes and reduce these writing errors.

Another difficulty often experienced by first-grade students is combining letters into meaningful syllables. While students may recognize individual letters like "b," "u," "k," and "u," they often struggle to put these letters together to form the word "buku." This error indicates that phonics and simple word pattern recognition have not been optimally taught. As a result, students do not fully understand how these letters form meaningful syllables and words, requiring more structured practice.

In addition to difficulties combining letters, many students also make mistakes in placing letters in the correct positions within a word. For example, some students write the word "buku" as "biku" or "bukuo." These letter placement errors indicate that students still struggle to understand basic orthographic rules, namely the correct arrangement of letters to form words. This situation demonstrates that basic writing instruction needs to be more systematic and must strengthen students' understanding of word structure.

Another common problem is students' reliance on memorizing letters without a deeper understanding. Many students simply memorize the shapes of the letters of the alphabet without truly understanding their sounds and functions within words. When asked to write, they tend to rely solely on visual memory, without considering the phonetic relationships between the letters that make up the word. For example, students who memorize the shapes of the letters "b" and "u" may have difficulty writing the word "buku" correctly because they don't yet understand how to combine the letters to form meaningful words.

These errors in letter recognition and basic writing suggest that current teaching methods may not be fully effective in developing students' early writing skills. Students need a more engaging and interactive approach that focuses not only on memorizing letters but also on deepening their understanding of how those letters function to form words. Using more visual and interactive learning media could be one solution to this problem.

Furthermore, structured and repeated writing practice is essential to help students correct basic writing errors. Students should be given sufficient time to practice writing letters and simple words, with appropriate guidance from the teacher. This intensive practice will help students strengthen their mastery of the alphabet and gradually improve their writing skills. The practice can also focus on combining letters into syllables and words, so students better understand how the letters work together to form meaning.

Furthermore, the issue of independence in writing also needs to be addressed. Many early grade students still rely heavily on teacher guidance when writing. They often lack the confidence to write independently, which ultimately hinders the development of their writing skills. Therefore, writing lessons need to be designed in such a way that they can encourage students to be more independent and confident in writing, by providing exercises appropriate to their ability level.

Overall, these problems indicate that basic writing learning in early grades, especially at MIS Maura El-Mumtaz, still needs to be improved so that students can master writing skills well.

Based on observations conducted by researchers in Grade 1 of MIS Maura El-Mumtaz Elementary School, serious problems were identified related to students' beginning writing skills. The main problem identified was misspelling of letters in words. Some students frequently omitted or misspelled letters, resulting in inaccurate and inaccurate meanings. These errors not only resulted in students' misunderstanding of the meaning of the words they wrote but also made it difficult for teachers to provide effective evaluation. This situation indicates that a more focused and in-depth teaching approach is urgently needed to help students improve their beginning writing skills.

Furthermore, during further observations, researchers also found that students often experience difficulty in combining syllables into meaningful words. This error is particularly evident in writing simple words, such as the word "buku," which is often written as "budu" or "kuyu." This phenomenon indicates that students

still have difficulty understanding the relationship between letter sounds and their visual forms in writing. This obstacle is an important factor that needs to be considered in teaching writing, as it can affect students' ability to express their ideas accurately through writing. Therefore, it is important to implement more effective and engaging learning methods to facilitate students' understanding of basic writing concepts.

Table 1.1 Student data on writing the word "Book"

Writing the Word "Book"	Number of Students	Presentation
Book (Correct)	13	38.24%
Budu (Wrong)	9	26.47%
Kuyu (Wrong)	5	14.71%
Monk (Wrong)	3	8.82%
Bukuo (Wrong)	2	5.88%
Open (Wrong)	2	5.88%

Source: researcher trial October, 2024.

From the observation of 34 Grade 1 students at MIS Maura El-Mumtaz, only 13 students (38.24%) managed to write the word "buku" correctly. In contrast, as many as 21 students (61.76%) made mistakes in writing the word. The most frequent error was writing "buku" as "budu", which was made by 9 students (26.47%). In addition, there were 5 students (14.71%) who wrote "kuyu", 3 students (8.82%) wrote "biku", and 2 students (5.88%) who wrote "bukuo" and "buka". These errors indicate challenges in mastering writing skills in students in this class.

These observations suggest that writing skill challenges among early grade students require more innovative and systematic educational interventions. Given that writing skills are a crucial foundation for overall literacy development, failures in early writing instruction can have long-term consequences for students' academic development. Traditional teaching methods focused on memorization and repetition may no longer be adequate to address the various challenges students face. Therefore, an approach that integrates the use of more interactive and contextual learning media is needed, which can increase students' interest and motivation to learn to write independently and meaningfully.

To improve students' basic writing skills, one solution that can be implemented is through the use of more innovative learning media, such as the use of smart cubes or other visual aids.

During her role as a first-grade teacher at MIS Maura El-Mumtaz, the researcher observed that several students exhibited significant limitations in basic writing skills. These limitations were particularly evident in their ability to correctly recognize and write the letters of the alphabet. In early childhood, letter recognition and writing skills are essential foundations for building children's literacy skills. However, some students still struggle with letter recognition, which impacts their ability to express ideas through writing.

Furthermore, not only letter recognition is problematic, but also simple sentence construction. Many students still cannot construct sentences with correct structure, even after recognizing some letters. This indicates a challenge in the development of early writing skills, which should have begun to develop in the first grade of elementary school. These limitations suggest that current learning methods may not be effective enough in helping students develop their basic writing skills.

The low learning outcomes of students in early writing in the classroom are also influenced by the minimal use of learning media by teachers. Learning media plays a crucial role in fostering student learning motivation. However, in practice, many teachers neglect the use of media as a learning resource that should be utilized in the learning process. Furthermore, many teachers are unaware of the various learning media available that can help improve students' understanding of the material being taught (Rahim et al., 2019:134).

Furthermore, a lack of training and professional development for teachers also contributes to the low utilization of learning media in the classroom. Teachers who do not receive adequate information and training regarding effective teaching techniques and media tend to find it difficult to apply them in the teaching and learning process. This situation results in low levels of creativity in teaching, which ultimately negatively impacts student learning outcomes. Therefore, it is important to provide adequate support and resources for teachers so they can integrate a variety of useful and engaging learning media, thereby increasing students' motivation in learning to write in the beginning.

Various methods have been implemented by teachers to improve students' early writing skills, one of which is the use of interactive and innovative learning media, which requires teachers to be creative (Sibuea, P., Albina, M., & Nasution, AF 2023:21). One such media that has begun to be used in various schools is the smart cube. This media not only helps students recognize letters but also hones their motor skills through manipulative activities that involve direct contact with the learning media (Sumarni, R., & Hidayat, 2020:112).

However, although various studies have shown that interactive media has the potential to improve early literacy skills, there are not many studies that specifically examine the effectiveness of smart cube media in the context of early writing skills at the elementary school level (Syahrul, 2023: 145). Therefore, this study aims to examine the effect of using smart cube media on the early writing skills of first-grade students at MIS Maura El-Mumtaz.

Furthermore, challenges in educational infrastructure, particularly in remote areas, also impact students' writing skills. The Central Statistics Agency (BPS) reported in 2022 that approximately 30% of elementary schools in remote areas lack facilities such as books and writing instructional materials. Another factor complicating this problem is the difference between the mother tongue and the language of instruction used in schools. UNESCO found in 2018 that 40% of students struggle with writing because the language of instruction is different from their mother tongue.

Student motivation in learning to write is also low. According to a survey by the Ministry of Education, Culture, Research, and Technology (2021), only 30% of first-grade students showed interest in writing. This is related to less engaging learning approaches, resulting in students lacking motivation. The combination of limited facilities, ineffective teaching methods, and low learning motivation make improving basic writing skills a serious challenge in basic education in Indonesia.

To create good interaction and communication, education is one form of interaction and communication development carried out by humans in everyday life. Through good material, teachers convey it with good forms of interaction to students, then students will model how to interact and communicate well (Nasution, Z. 2017:39). According to research by Mayer (2005:76), learning media such as images, videos, or interactive tools can facilitate students' understanding of the concept of writing, because children more easily understand and remember material presented visually or through direct activities.

In addition, interactive media can also increase student engagement in learning, which in turn can increase their motivation to learn to write. Research conducted by Kearney & Schuck (2006:52) shows that the use of interactive media in learning can increase student active participation, which is important in helping them develop writing skills. Hwang and Wu (2012:83) also found that children at elementary school age tend to be more interested and involved in learning presented visually and interactively, which ultimately helps them to be more focused and motivated in writing.

In Indonesia, research by Wulandari & Santoso (2020:12) shows that the introduction of engaging learning media in early childhood education institutions, such as the use of visual and manipulative media, has helped

children more easily master basic writing skills. Children can speak from an early age thanks to the influence of their mother tongue, which they hear and use in everyday interactions. However, they often have difficulty writing down what they say, indicating a gap between their oral and written abilities. This gap indicates the importance of developing effective learning media, such as smart cubes, to help improve basic writing skills and bridge the gap between children's speaking and writing abilities.

To address this issue, innovations in learning media are needed that can engage students and simultaneously improve their writing skills. One such learning medium is the Smart Cube. The Smart Cube is an interactive medium designed to help students develop their writing skills gradually through a fun and stimulating approach (Niswah & Purwanto, 2022:9). This medium allows students to interact directly with the learning material, thereby improving their understanding and writing skills.

The use of innovative learning media, such as smart cubes, has been proven effective in improving elementary school students' writing skills. Smart Cubes, as a manipulative tool that actively engages students, helps them recognize letters, words, and construct sentences in an engaging and interactive way. Research by Niswah & Purwanto (2021:14) shows that students who learn using Smart Cubes experience significant improvements in writing skills compared to conventional methods.

Smart Cubes provide effective visual and physical stimuli to increase student engagement in learning to write. The use of this media not only hones students' writing skills but also increases their motivation and participation in the learning process. This is due to students' interest in learning methods that allow them to carry out direct activities, such as arranging letters and words by moving the cubes. Similar to research that uses the index card match strategy is effective in improving student learning outcomes in the Indonesian language subject on the material of events in grade V of SD IT Al-Hijrah Laut Dendang (Rambe, RNK 2018:123).

Furthermore, using Smart Cubes can help students understand sentence structure and expand their basic vocabulary. Students who utilize this tool in their learning show improvements in writing simple sentences and understanding grammar. Therefore, Smart Cubes can be considered an effective tool for developing basic writing skills in elementary school students.

The use of media in elementary school learning is crucial because it can enhance student understanding, motivation, and engagement, particularly in honing writing skills. Interactive and engaging learning media can foster student interest and motivation to learn to write with greater enthusiasm. Elementary school-aged children tend to be more drawn to learning that is presented visually and involves interactive activities. This approach helps them stay focused and motivated to write, allowing their basic writing skills to develop more naturally.

Based on the problems faced by students regarding initial writing skills and the limitations of available learning media, researchers took the initiative to use innovative learning media in the form of cubes, known as smart cube media. This media is specifically designed to improve initial writing skills in first-grade students in the first semester. By using this media, it is hoped that students can gain a more interesting and interactive learning experience, thereby helping them in achieving the set learning outcomes.

The learning outcome intended to be achieved through the use of the Smart Letter Writing Cube is for students to demonstrate effective beginning writing skills. This includes the ability to hold a writing tool correctly, maintain the proper distance between the eyes and the book, and thicken lines or letters according to the provided guidelines. With this tool, students not only learn how to write but also gain a better understanding of basic writing techniques essential for learning Indonesian.

The use of this cube-shaped learning media is in line with the needs of students who are at the concrete development stage, where they are better able to understand material presented visually and practically. With the smart cube media, it is hoped that the process of learning to write beginning becomes more effective and enjoyable, which in turn will have a positive impact on student learning outcomes. Through this study, researchers aim to make a significant contribution to improving the beginning writing skills among first-grade students at MIS Maura El-Mumtaz.

The smart cube media has several significant advantages in this study, particularly related to improving the basic writing skills of first-grade students at MIS Maura El-Mumtaz. One of its main advantages is its ability to facilitate students in recognizing and understanding the alphabet visually. By using cubes that display letters, students can more easily remember the letter shapes and arrange them into meaningful words. This visual method is very helpful for students in the early stages of literacy development, as it allows them to associate letter shapes with the sounds and meanings of words more effectively.

In addition, the Smart Cube media also helps students learn correct writing rules, such as the use of capital letters. For example, when students are asked to write the word "Vegetables," they are taught that the letter "S" must be capitalized because it is at the beginning of the word. The use of this media provides students with direct experience in distinguishing between uppercase and lowercase letters, which is an important aspect of language learning. Thus, the Smart Cube media not only helps students understand the basics of writing but also instills an understanding of appropriate grammar rules.

Another advantage of this media is its ability to make the learning process more interactive and engaging. Physical interaction with the cubes provides a variation on conventional learning methods, thus motivating students to practice writing. This engaging and interactive learning allows students to be more engaged in the learning process, which in turn can improve their learning outcomes. In other words, Smart Cube Media plays a role in creating a fun and effective learning environment, where students can learn in a more dynamic and less monotonous way.

However, although Smart Cube Media has many advantages, there are several limitations that need to be considered. This media tends to be more effective in learning simple words, and is less adequate for teaching writing more complex words. For more advanced learning stages, the use of this method needs to be supported by other, more comprehensive media or methods so that students can understand and write more complex words effectively. Therefore, the development of more holistic learning media is needed to overcome these limitations and support a more in-depth writing learning process. Based on the background of the problem that has been stated by the author above, the author conducted a study with the title "The Effect of Smart Cube Media on the Beginning Writing Skills of Grade I Students at Mis Maura El Mumtaz" to complement the findings of previous studies."

2. Literature Review and Problem Statement

Literature Review

Early writing skills are a language skill that forms the foundation for elementary school students in developing literacy skills. In first grade, students are expected to recognize letters, write simple words and sentences, and correctly connect sounds with written symbols. However, the process of learning early writing often faces various obstacles, such as students' poor ability to recognize letters, difficulty forming letters correctly, and a lack of learning motivation due to the use of conventional learning media. Therefore, learning media are needed that can create an engaging, interactive learning environment that is appropriate to the developmental characteristics of early childhood students.

One medium that can be used to improve early writing skills is the Smart Cube. This cube-shaped learning tool contains letters, syllables, pictures, and simple words, enabling students to learn through play-based activities. Using the Smart Cube provides students with the opportunity to concretely recognize letters, arrange syllables into words, and practice fine motor coordination, which is essential for writing. Based on constructivist learning theory, the use of concrete media helps students build understanding through direct experience, making the learning process more meaningful.

Several previous studies have shown that the use of game-based learning media and manipulative media can improve the early literacy skills of elementary school students. Media that involve visual, kinesthetic, and active participation activities have been proven to increase student interest in learning, concentration, and learning outcomes compared to learning that only uses lecture methods or textbooks. However, research on the effectiveness of Smart Cube media on early writing skills, especially in grade I students of Islamic elementary schools, is still relatively limited. Therefore, this study is important to conduct to provide empirical evidence regarding the effect of Smart Cube media on improving students' early writing skills.

Problem Statement

Beginning writing skills are a fundamental skill that first-grade students must master as a foundation for learning Indonesian and developing literacy skills at subsequent levels. However, many students still struggle with letter recognition, spelling words correctly, and composing simple text. This is influenced by various factors, including the use of insufficiently varied learning media, which makes learning less engaging and unable to accommodate the learning characteristics of early childhood students.

Smart Cube media offers a more interactive learning approach through play-while-learning activities, which is expected to improve students' early writing skills. However, the effectiveness of this media in improving early writing skills in first-grade students of MIS Maura El Mumtaz is not yet scientifically known. Therefore, research is needed to analyze whether the use of Smart Cube media has a significant effect on the early writing skills of first-grade students of MIS Maura El Mumtaz. The results of this study are expected to be the basis for selecting effective learning media to improve early literacy skills in elementary schools.

3. Method

This study uses a quantitative approach with an experimental method that aims to determine the effect of the use of Smart Cube media on the initial writing skills of first-grade students at MIS Maura El Mumtaz. The quantitative approach was chosen because this study measures the effect of the treatment objectively through data in the form of numbers analyzed using statistical techniques. The experimental method is used to test the cause-and-effect relationship between the independent variable, namely the Smart Cube media, and the dependent variable, namely the initial writing skills of students. Thus, this study is expected to be able to provide empirical evidence regarding the effectiveness of the use of Smart Cube media in the learning process.

The research design used was a pre-experimental one-group pretest-posttest design. In this design, research subjects were given an initial test (pretest) before receiving treatment, then given treatment in the form of learning using the Smart Cube media, and concluded with a final test (posttest). The pretest and posttest results were then compared to determine changes in students' initial writing skills after being given the treatment. This design allows researchers to measure student improvement directly based on the difference in scores before and after using the Smart Cube media.

The research began with a pretest administered to the entire sample to determine students' initial writing skills. At this stage, students were asked to write several words, namely Elephant, Door, Vegetable, and

House, according to their abilities. Next, the researcher provided treatment through learning using the Smart Cube media. During the learning process, students were introduced to how to use the media to recognize letters, construct words, and practice writing gradually. After the entire learning series was completed, students were given another posttest using the same material to determine changes in their initial writing skills after receiving the treatment.

The data obtained from the pretest and posttest results were then analyzed using quantitative statistical techniques to determine whether or not the use of the Smart Cube media had an effect on students' initial writing skills. The analysis was carried out by comparing the scores before and after the treatment to determine the extent of the increase in students' abilities. If the posttest results show a significantly higher score than the pretest, it can be concluded that the use of the Smart Cube media has a positive effect on improving the initial writing skills of first-grade students at MIS Maura El Mumtaz.

4. Results and Discussion

This research was conducted at MIS Maura El-Mumtaz located at Jalan Sei Batanghari No. 6, Tanah Seribu Village, South Binjai District, Binjai City, North Sumatra Province. This school is an elementary madrasah under the auspices of the Ministry of Religious Affairs and has obtained B accreditation based on Decree Number 490 / BAN-SM / SK / 2019. The study aims to determine the effect of the use of Smart Cube media on the initial writing skills of grade I students. The research was carried out from the first week to the third week of February 2025, while the process of designing and making Smart Cube media has been carried out from the second week to the third week of November 2024 so that the media used is in accordance with the characteristics and learning needs of early grade students.

The research subjects consisted of 58 first-grade students of MIS Maura El-Mumtaz who served as research respondents. Before being given treatment, all students took a pretest to measure their initial abilities in beginning writing skills. The assessment was conducted using an instrument that had been prepared based on several indicators, such as letter writing accuracy, neatness of writing, appropriateness of letter shape, and placement of writing. The maximum score that students could obtain was 12 points. After the pretest, students took part in a learning process using Smart Cube media as an interactive learning medium designed to help students recognize letters, compose words, and practice writing skills through interesting and fun activities. After the entire learning series was completed, students were given another posttest with the same question format and assessment rubric so that the results before and after the treatment could be compared objectively.

Based on the results of descriptive statistical analysis, the average pretest score was 7.74 with a standard deviation of 1.56, while the average posttest score increased to 9.17 with a standard deviation of 1.26. The average increase of 1.43 points indicates that students' initial writing skills developed after participating in learning using the Smart Cube media. In addition, the decrease in the standard deviation value in the posttest indicates that students' abilities became more evenly distributed compared to before the treatment. The results of the normality test using the Kolmogorov-Smirnov method also showed a significance value of 0.200 for the pretest and 0.163 for the posttest, both of which were greater than 0.05. Thus, the research data were normally distributed and therefore met the requirements for analysis using parametric statistical tests.

Hypothesis testing was conducted using Paired Samples t-test to determine whether there was a difference in initial writing skills before and after using the Smart Cube media. The results of the analysis showed a t value = -5.844 with a significance value of 0.000 ($p < 0.05$), so the null hypothesis (H_0) was rejected and the alternative hypothesis (H_1) was accepted. These results prove that there is a significant

difference between the pretest and posttest scores, which indicates that the use of the Smart Cube media has a positive effect on improving the initial writing skills of grade I students of MIS Maura El-Mumtaz. Therefore, the Smart Cube media can be used as an alternative effective learning media in supporting early literacy learning in elementary school students.

Previous research on the use of learning media, particularly concrete media such as Smart Cubes, has provided a strong theoretical and practical foundation for evaluating their effectiveness in improving students' basic writing skills. Concrete media is believed to be more easily understood by young children because it is oriented towards real-life experiences, in accordance with the principles of cognitive development-based learning proposed by Jean Piaget. One relevant study in this context is that conducted by Desi Nur Amalia and Nugraheti Sismulyasih (2023), who developed the Smart Letter Writing Cubes media to improve early writing skills in elementary school students. In their study, media specifically designed with students' developmental characteristics in mind was proven to significantly improve writing skills. These results reinforce the idea that learning success depends heavily on the match between learning strategies and student characteristics.

In line with this, this study also shows that the use of Smart Cube media can significantly improve the basic writing skills of first-grade elementary school students. This media is designed as a learning tool that is not only fun and interactive, but also able to facilitate cognitive and psychomotor strengthening of students in recognizing and writing letters and words. The improvement in students' basic writing skills in this study is supported by the results of the Paired Samples t-test, which shows a significant difference between the pretest and posttest scores. The calculated t value obtained is -5.844 with a significance value (Sig. 2-tailed) of 0.000, which is much smaller than the alpha value ($\alpha = 0.05$). This statistically indicates that the Smart Cube media has a real influence on improving students' basic writing skills.

This finding aligns with research by Rachmadtullah, MS, and Sumantri (2018) which developed computer-based learning media for elementary schools. Although their approaches differ—based on digital technology—both studies share a similarity in demonstrating that learning media specifically designed and structured according to student needs can have a positive impact on learning outcomes. Thus, both computer-based media and concrete media such as Smart Cubes have significant potential to improve students' academic skills when applied effectively.

Furthermore, Simatupang, Daulay, Simarmata, and Situmorang (2023) in their literature review on interactive learning media emphasized that interactive media can increase student motivation and active engagement in the learning process. Although their approach was more conceptual, without direct measurement through experimental methods, their findings remain relevant because they reinforce the theoretical aspect that active student engagement in learning is a crucial factor in educational success. In this context, the Smart Cube media not only provides interactive aspects but also concrete and exploratory aspects, which are very suitable for the learning styles of early childhood.

This study used a quantitative experimental design Pre-Experimental One-Group Pretest-Posttest Design, where students were given an initial test (pretest) before being given treatment in the form of using Smart Cube media, then followed by a final test (posttest) to measure the effectiveness of the treatment. This design allows researchers to directly observe the changes that occur in students' basic writing skills variables. The results showed that there was a significant increase in scores, both quantitatively and qualitatively, where students showed improvements in terms of letter writing accuracy, writing fluency, and the ability to compose words correctly.

This research makes a significant contribution to the world of elementary education, particularly in the development of learning media aimed at first-grade elementary school students. In the early stages of

education, students are still in the process of being introduced to basic literacy skills, such as reading and writing. Therefore, the existence of interactive, engaging, and age-appropriate learning media is crucial to help accelerate this learning process.

Basic writing skills are the primary foundation for student success in subsequent levels of education. When students develop strong writing skills from an early age, they will more easily absorb more complex learning materials in the future. Therefore, improving writing skills from an early age is not only an indicator of current learning success but also a long-term investment in a child's overall educational process.

The results of this study have direct implications for classroom learning practices, particularly in encouraging teachers to be more creative and innovative in selecting and developing learning media. The use of media such as Smart Cubes has been shown to significantly improve students' writing skills, suggesting that similar approaches can be adopted by other teachers as alternative learning strategies. Going forward, teachers are expected to be able to create a fun and effective learning environment by utilizing relevant and highly effective learning media.

To strengthen the argument regarding the effectiveness of concrete media in early literacy learning, research by Sari and Hidayat (2022) can serve as an important reference. In this study, they evaluated the use of alphabet blocks in early grade writing instruction for students and found that students who used these blocks experienced significant improvements in letter recognition, syllable combination, and writing simple words. These results demonstrate that concrete and manipulative learning media play a significant role in supporting the literacy learning process.

Sari and Hidayat's findings align with the results of this study, which used Smart Cube media as a tool to improve the basic writing skills of first-grade students. Students' ability to hold, rotate, and observe the media directly allows them to build a stronger understanding through sensory and motor experiences. Thus, learning becomes more meaningful and easier to understand for early childhood students who are still at the concrete operational cognitive development stage.

The use of concrete media such as Smart Cubes or alphabet blocks demonstrates that a learning approach appropriate to students' age characteristics can significantly impact learning outcomes. These media not only support cognitive development but also encourage active student engagement in the learning process. Therefore, the use of concrete media is highly recommended for integration into literacy learning strategies at the elementary level.

By combining the results of various studies, both experimental, conceptual, and literature-based, it can be concluded that the use of learning media appropriate to students' developmental stages and learning styles has a significant influence on improving learning outcomes, particularly in basic writing skills. This research strengthens the theoretical and practical contributions in the field of elementary education and encourages the development of new learning media that are more effective and enjoyable for students.

5. Conclusion

This study aims to determine the effect of the use of Smart Cube media on the initial writing skills of first-grade students of MIS Maura El-Mumtaz. The study used a quantitative approach with a pre-experimental design in the form of a one-group pretest-posttest design involving 58 students as a research sample. The results showed that there was an increase in initial writing skills after students participated in learning using Smart Cube media. This can be seen from the increase in students' average score, namely from 7.7414 at the pretest to 9.1724 at the posttest, thus indicating that Smart Cube media is able to help students develop initial writing skills more effectively.

Based on the results of the paired samples t-test, the t-count value was obtained at -5.844 with a significance value of 0.000, which is smaller than the significance level of 0.05. These results indicate that H_0 is rejected and H_1 is accepted, so it can be concluded that the use of Smart Cube media has a significant effect on the initial writing skills of grade I students of MIS Maura El-Mumtaz. Thus, Smart Cube media is proven to be effective as a learning medium that can improve students' initial literacy skills, especially in initial writing skills, so it can be used as an alternative innovative and interesting learning media in the learning process in the early grades of elementary school.

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