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Available at:

<https://journal.nahnuinisiatif.com/index.php/ARJI>

Volume 7 Nomor 1 Tahun 2025

 DOI : 10.61227

 E-ISSN : 2775-0787

 P-ISSN : 2774-9290



218 - 227

## The Use of Puzzle Stick in Teaching Students' Literacy of SB Beranang Malaysia in Elementary School Level

Artikel dikirim :

2025-01-02

Artikel diterima :


2025-02-13

Artikel diterbitkan :

2025-02-14

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**Kata Kunci:** Puzzle Stick, pembelajaran literasi

**Abstrak:** Artikel ini menyoroti permasalahan yang ada pada rendahnya literasi siswa. Penelitian ini bertujuan untuk menilai efektivitas penggunaan puzzle stick dalam meningkatkan keterampilan literasi membaca dan menulis siswa di Sekolah Bimbingan Beranang, Malaysia. Melibatkan 12 siswa berusia antara 5 hingga 13 tahun, metode yang digunakan menggunakan metodologi penelitian studi kasus dengan pengumpulan data melalui observasi, wawancara, dan analisis artefak siswa. Penelitian ini menegaskan bahwa puzzle stick merupakan media pembelajaran yang efektif untuk meningkatkan kemampuan literasi siswa. Dengan pendekatan inovatif ini, pendidik dapat menciptakan pengalaman belajar yang lebih menarik dan berkesan, sekaligus membantu siswa mencapai potensi maksimal mereka dalam membaca dan menulis. Hasil penelitian menunjukkan bahwa penggunaan puzzle stick dalam pembelajaran literasi memberikan dampak positif yang signifikan. Siswa menunjukkan peningkatan dalam kemampuannya mengenali huruf, membentuk ucapan, dan menulis. Selain itu, penggunaan puzzle stick menciptakan suasana pembelajaran yang lebih menyenangkan dan interaktif, sehingga pada akhirnya meningkatkan motivasi siswa dan mendorong partisipasi aktif dalam proses pembelajaran.

**Keywords:**

Puzzle Stick, teaching literacy

**Abstract:** This article highlights the problems that exist in students' lack of literacy. This study aimed to assess the effectiveness of using puzzle sticks in improving students' reading and writing literacy skills at Sekolah Bimbingan Beranang, Malaysia. Involving 12 students aged between 5 and 13 years, the method uses a case study

research methodology with collecting the data through observation, interviews, and analysis of students' artifacts. The data techniques used in this article is data is data reduction, presentation and conclusions. This study confirms that puzzle sticks are an effective learning medium to improve students' literacy skills. With this innovative approach, educators can create more engaging and memorable learning experiences, while helping students reach their full potential in reading and writing. The results showed that the use of puzzle sticks in literacy learning had a significant positive impact. Students showed improvements in their ability to recognize letters, form speech, and write. In addition, the use of puzzle sticks created a more enjoyable and interactive learning atmosphere, which in turn increased students' motivation and encouraged active participation in the learning process.

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## PENDAHULUAN

Education and technology are part of the components of education development to realize the nation's ideals. Education is expected to be able to build and continue the development of the nation and education is a conscious effort to maintain cultural heritage from generation to generation (Bp et al., nd., p.2 ). The goal of education is to produce students who are able to face challenges in the era of education 4.0, so it is necessary for educational units to produce students who are competent and can be competitive and have skills that are beneficial to themselves and the community. Education helps humans learn and develop their potential (Fitri, 2021). In accordance with the objectives of national education, article 03 of the national education system law no. 20 of 2003 which states " The development of students to become human beings who believe in and fear God Almighty, have noble character, are healthy, knowledgeable, capable, creative, independent and become democratic and responsible citizens" (Noor, n.d., p. 124). Education is also a means to educate the nation's life, national education aims to build the ability and character as well as the nation's dignified civilization (Omeri, n.d., p. 464). In realizing this, the ability of teachers to determine the use of methods and media in learning activities is the main factor in elementary school education units, to prepare students to have basic skills as a provision for the continuation of studies. The age of education in Indonesia is categorized into 5 years old for kindergarten or RA, 7 years old to study at the elementary level for 6 years, age 13-15 for junior high school or MTS, age 16-18 for high school/vocational/MA education level, after that enter the age for higher education (dev@whello.id, 2022).

The age of elementary school children is the basis of the golden age, this age is a very valuable age to instill attitudes or characters and knowledge, because the memory in children is very strong here, the age in the golden age is very valuable compared to the later ages, the age is a unique phase of life (Yuhellistya, 2022). At the golden age, children will be very responsive to new things and are immediately embedded in them which will affect the development of the child's personality. Therefore, at this golden age, it is important to instill good life values in children (Rohmadi et al., 2020). So, educators need to focus on the learning process, especially in reading and writing literacy because the golden age has extraordinary power in the development of students.

Literacy is an important skill in primary school education, being the foundation of academic success and lifelong learning. By reading, elementary school children are able to open all gates of knowledge (Elvi Susanti's Reading Skills.Pdf, n.d.). NAEYC (National Association for the Education of Young Children) recommends forms and methods of teaching children to read at an early age, namely by introducing single letters, reading the alphabet, forming letters with lines that have been provided ( NAEYC cited in Yunanto & Chandrawati, 2015, p. 13). so that it makes it easier for students at the next level of the learning process. Despite its importance, many elementary school students have difficulty reading and writing due to limited teaching methods. Many teachers in primary schools still use traditional methods. Difficulties for elementary school children in reading

and writing include difficulty spelling reading, difficulty combining letters into sentences, difficulty writing letters correctly, difficulty understanding punctuation and others (Learning Disorders in Children, 2023) Exist Some of the factors that cause difficulties for elementary school students in learning to read and write are internal factors which are factors of personal ability and external factors such as family roles, teachers and environmental factors (Roesi & Pangestika, 2024). To address this problem, educators need to explore innovative strategies, including the use of creative teaching aids and manipulative tools, to improve students' literacy skills. There are many media that can be used to teach reading and writing for elementary school students and one of the appropriate media in learning reading and writing is the use of "puzzle sticks".

Stick Puzzle is a hands-on activity that combines physical interaction with reading and writing tasks. This method not only stimulates cognitive development but also encourages active participation and involvement in the learning process. A puzzle stick is a pictorial stick that shows the numbers or letters that must be arranged (Ade Pertiwi et al., 2023). The "stick puzzle" activity involves students constructing sticks to form pictures or words, which are then used as a basis for reading or writing exercises. This method is in line with the theory of multimodal learning, which emphasizes the integration of visual, tactile, and cognitive processes to support skill acquisition.

Previous research has shown the effectiveness of interactive and manipulative aids in improving literacy. For example, Maharani (Empress, 2021) focusing on the effect of crossword puzzles on the reading comprehension ability of 8th grade junior high school students. The study was conducted to test whether this game-based learning method is effective in improving students' reading skills, especially in narrative texts, emphasizing the role of physical aids in bridging the gap between abstract concepts and practical applications in reading instruction. (Ungau et al., 2023) This research focuses on improving reading skills using the gamification method (Puzzle game), the goal is to help children master the ability to organize words in a fun and interactive way. (Pertiwi et al., 2023) The main focus of this research article is to examine the effectiveness of media implementation puzzle stick in increasing reading interest and early reading skills of grade II elementary school students. This study aims to understand the extent of media use puzzle stick can have a positive impact on both aspects. Furthermore, Ramlah (Ramlah et al., 2022) which also uses puzzle media in creating an interactive and innovative atmosphere in mathematics learning at the elementary school level, but this research mainly focuses on general puzzles or visual aids, leaving a gap in understanding the educational potential of "media puzzle" as a special learning aid.

In the field of literacy, previous research only focused on reading skills, this research focuses on the field of reading and writing literacy which will complement previous research by using stick puzzle media that has never been explored in research in the field of literacy at the elementary school level in Malaysia. Researchers are interested in conducting research on the use of puzzle sticks in student literacy learning at SB Beranang, Malaysia. Because in SB (Sanggar Guidance) many students experience difficulties in their literacy skills such as reading and writing, this is based on observations

made by researchers in the learning process at SB Beranang Malaysia. Sanggar Bimbingan is one of the alternative educational institutions for non-formal education for children of Indonesian illegal workers in Malaysia (Sholihah & Kuswandi, 2024). Researchers are interested in realizing the use of stick puzzles for literacy learning at SB Beranang Malaysia, the "puzzle stick" activity is carried out as part of literacy learning that trains students' reading and writing skills. Students participate in putting together puzzle sticks to form a picture, guess the meaning of the picture, and then write down their answers. This was done as an effort to find out how the process of using the stick puzzle in literacy learning and whether the use of stick puzzles in learning can create a more fun and interactive learning atmosphere for students at SB Beranang Malaysia.

## METODE

The researcher will answer the objective of the problem that researcher explain perviously. this study uses a case study research methodology in SB Beranang, Malaysia. Case study research is one of the methods that aims to develop a more in-depth analysis related to a case, program, activity, process of an individual or group (Prativi & Rayu, 2021, p. 6038). This approach was chosen because it is relevant to the purpose of the research, namely to find out in detail the dynamics and process of using stick puzzles in the literacy learning of SB Beranang Malaysia students.

The process of collecting case study research data is carried out in several systematic steps consisting of 3 stages, namely observation, semi-structured interviews, and student artifacts. The researcher made observations that were experienced at SB Beranang, Malaysia. Then the researcher conducted in-depth interviews to the through semi-structured interviews and a list of questions was compiled for the interview and developed using specific language literature. Interviews were conducted on subjects, namely students of SB Beranang Malaysia. The method carried out in this study goes through the sitematic stages carried out by other researchers in the educational environment to collect data and provide alternatives to the problems experienced. This study involved 12 students consisting of age groups of 5 to 13 years at Sekolah Bimbingan Beranang, Malaysia in November 2024. This research was carried out in regular classrooms that are used for daily learning activities at school. The class provides enough space for students to move physically and engage in learning activities using "puzzle sticks".

Observations in SB Beranang, Malaysia, revealed that the use of stick puzzles in literacy learning fosters an interactive and interesting environment. Student engagement is very high, with increased focus and motivation, particularly in word formation. Students participate actively, show curiosity and interact collaboratively to solve puzzles. Even students who were initially passive became more curious and eager to participate. Although this study highlights the positive impact of stick puzzles, it also acknowledges the limitations of inconsistent facilitation due to teacher availability constraints.

Semi-structured interviews with students further support the positive impact of stick puzzles. Students at various literacy levels expressed positive sentiments, emphasizing the fun and engaging nature of learning through puzzles. They reported reduced fear and stress associated with reading and writing, and attributed this to the fun and interactive learning environment created by puzzles. Specific comments included enjoying puzzle games as a means of learning letters without getting bored, finding it easier to learn to read because of the visual and colorful nature of the puzzles, and considering puzzle-based learning to be the same as playing.

A comparison of student artifacts (pictures, letters, and writing samples) before and after the introduction of stick puzzles showed significant improvements in reading and writing skills. This visual evidence corroborates findings from observations and interviews, which further emphasize the positive impact of stick puzzles in creating more engaging and effective literacy learning experiences. Below is a picture of the process of using sticks of student SB Beranang Malaysia elementary school.



**Figure 1. The Process the Use of Puzzle Sticks**

From the results of the above analysis, the use of puzzle sticks at SB Beranang Malaysia at the elementary level has a positive impact on students' reading and writing literacy. This media succeeded in creating a fun learning atmosphere and motivated Shiva to learn. Although there are challenges such as limited teaching staff and facilities

## HASIL DAN PEMBAHASAN

### Result

This study observed that the implementation of puzzle sticks in literacy learning in SB Beranang, Malaysia, followed a structured approach. Initially, students were given clear instructions on how to arrange the puzzle sticks to form letters and then simple words. This step-by-step guide facilitates their understanding of letter recognition and word formation. After putting together the puzzles, the students are encouraged to actively engage by writing the formed words on the whiteboard or paper. This dual engagement, which involves both the physical manipulation of the puzzle pieces and the written expression of the words formed, significantly enhances the learning experience.

Collaborative learning is further encouraged through group discussions where students share their word creations and provide feedback to their peers. This interactive process allows for peer-to-peer learning and facilitates the identification and correction of errors.

The study also showed some key benefits of using puzzle sticks in the literacy learning process. Firstly, puzzle sticks significantly increased student engagement. Students showed increased enthusiasm and actively participated in the puzzle activities and often shared their creations with their peers. As one student said, 'I like learning with puzzle sticks because I can play and learn at the same time.' This fun approach effectively breaks the monotony of traditional classroom learning, creating a more relaxed and enjoyable learning environment. Teachers observed a positive change in students' attitudes, with reduced anxiety and increased enthusiasm during reading and writing activities. In addition, the use of puzzle sticks fosters a strong sense of social interaction among students. Collaborative puzzle building and group discussions encouraged student-to-student learning, with students actively helping and learning from each other. As one volunteer teacher observed, 'I see that students interact more easily with each other when using puzzle sticks, they help each other and share knowledge.'

## Discussion

Challenges in literacy learning are common things that often occur in the world of education. (Ristama Nainggolan et al., 2024) stated that the factors causing low literacy knowledge among students include the social, economic and educational conditions of the school environment. This statement also agrees with the research article published by (Lumbantungkup et al., 2022). Based on the two statement, this article have Some of the problems of literacy skills faced by students at SB Beranang in learning. The first is in reading, due to the lack of teaching staff who are ready to help the reading learning process on a regular basis, because the teaching staff at SB Beranang always experience a change of teachers because they only rely on volunteer teachers, some of the teachers on duty are KKN students from Indonesia. Based on the problem of the lack of literacy skills of SB Beranang students, the use of puzzle sticks in literacy learning provides satisfactory results for teachers and students.

For more discussion of this study is in line with the principle of multimodal learning, which states that learning experiences that involve multiple senses (visual, tactile, and cognitive) increase student understanding and engagement. The use of puzzle sticks effectively embodies this principle. This statement is supported by (Lv et al., 2024) statement which discusses the importance of multimodal teaching and emphasizes the use of a variety of materials to enhance student learning. This highlights how multimodal approaches, such as incorporating tactile elements, can encourage deeper engagement and understanding, in line with multimodal learning principles. So, by physically manipulating puzzle pieces to form letters and words, students actively engage with the learning material, strengthening their understanding. This hands-on approach goes

beyond passive listening and reading, encouraging deeper cognitive processing and improving learning outcomes.

This study shows that puzzle sticks create a dynamic and engaging learning environment that is in line with contemporary educational philosophies that prioritize active student participation and intrinsic motivation. Learning through play, as facilitated by puzzle sticks, has been shown in previous research (Fauzi et al., 2024) that game-based learning can increase student motivation by providing challenges and an interesting reward system. So by breaking away from the traditional teacher-centered method, puzzle sticks encourage a more relaxed and enjoyable learning experience, reducing anxiety and increasing student confidence.

In research article stated by (Holili et al., 2024) discusses how to use puzzle media to increase student motivation and learning outcomes in science subjects. This research emphasizes active student engagement, but does not address challenges associated with time management or teacher training to implement puzzle methods in lesson plans. Although the use of puzzle sticks at SB Beranang has proven successful, several challenges remain. Effective time management and ensuring the continued use of this method are essential. Providing comprehensive training to teachers on the effective integration of stick puzzles into their lesson plans will be essential to maximize the benefits of this approach. With appropriate support and professional development, stick puzzles can be effectively implemented in a variety of educational settings.

This study has several limitations. The sample size was relatively small, and the study was conducted in a single location, limiting the generalizability of the findings. Further research involving larger sample sizes and covering more schools and student populations is needed to validate the findings in more diverse contexts.

## KESIMPULAN

This research succeeded in showing that the use of puzzle sticks in literacy learning in elementary schools has very good potential. Through a fun and interactive approach, puzzle sticks are able to increase student engagement significantly, there by reducing fear and boredom during the learning process.

Apart from that, the results of this research also show a significant increase in students' reading and writing abilities after using this learning media. These findings support the importance of using innovative and interesting learning media to improve the quality of learning literacy, especially among students who need a more varied learning approach. Although this research has several limitations, such as the limited sample size and specific research context, the results of this research have an important impact on curriculum development and learning practices in elementary schools. Further research with a broader scope can be conducted to confirm these findings and explore the potential of puzzle sticks in different learning contexts.

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