

Mejilawi to Enhance the Symbolic Thinking Abilities for Children's Kindergarten

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Abstract: *This research aims to improve children's symbolic thinking abilities through the use of mejilawi (teaching method) and describes the application of mejilawi in enhancing children's symbolic thinking abilities. The subjects of this research were Group A students of PAS Baitul Qur'an Gontor Full-day Kindergarten. This research uses a qualitative descriptive classroom action research approach. Data collection methods used in this research include observation and oral tests. Meanwhile, the data analysis method uses a qualitative descriptive approach. The research model used in this research refers to Kemmis and McTaggart's theory, which is applied in a spiral form consisting of planning, implementation, observation and reflection. Research findings show increased children's symbolic thinking abilities after implementing mejilawi. In cycle I, out of 20 children aged 4-5 years at PAS Baitul Qur'an Gontor Fullday Kindergarten, 11 (55%) achieved BSH and BSB grades. In cycle II, there was an increase in the number of children who obtained BSH and BSB scores, reaching 17 (85%). The application of mejilawi as a learning medium to improve children's symbolic thinking skills consists of five stages: (1) the child arranges ten bowls neatly and counts them, (2) the child arranges and places the numbers 1 to 10 under the bowl, (3) the child holds the nuts correctly, (4) children put nuts in their hands as a symbolic representation of the numbers, (5) children are allowed to count the number of nuts again in each bowl. Scientific use of mejilawi can improve children's symbolic thinking abilities.*

Keywords: Symbolic Thinking, Mejilawi, Learning Media, Learning Process.

Introduction

Early childhood education involves providing attention, care, and services to children between 0 and 6 years old. The focus is on providing educational stimulation and support that aids in children's physical and mental development and prepares them for further stages of life and

education. According to a study by (Justice et al., 2019), Early Childhood Education (ECE) is a developmental effort focusing on children from birth to six years of age. This is done by providing educational stimulation to facilitate children's physical and mental growth and development, preparing them to continue their education at the next level (Pangrazi & Beighle, 2019);(Rina, 2018).

Early childhood education plays a crucial role in shaping and developing the foundations of knowledge, attitudes, and skills in children (Gordon & Browne, 2016);(Ferreira et al., 2021). Meanwhile, education or learning is teachers' systematic steps to facilitate and enhance the learning process. Therefore, this learning activity is closely related to the essence and types of learning and the outcomes achieved from that process (Davis & Arend, 2023);(Ikhwan et al., 2022). Thus, the period of education during early childhood is a necessary time to establish the initial foundation in the development of six aspects of child development, including cognitive development as one of them

The research by (Yilmaz et al., 2017) reveals that cognitive progress is closely related to a child's capacity to learn and understand various things. In terms of cognitive development, there is a strong connection with a child's intelligence. Teachers play a crucial role in providing stimulation and stimulation that encourages the growth of logical thinking, problem-solving abilities, and symbolic thinking.

This, the improvement and development of symbolic thinking in children essentially involve efforts made by teachers to enhance their ability to recognise and name numerical concepts, familiarise them with letters, and explain various forms of objects and students' imaginations through drawings (Estiningsih et al., 2023);(Nursyamsiah et al., 2019). On the other hand, symbolic thinking ability is an effort to enhance students' capabilities by using symbols or representations to present something that is not physically present. The stage of symbolic thinking falls within the learning phase of characters or words (Permata & Nugrahani, 2020). According to Piaget, extended thinking ability is an effort to enhance children's capacity to think about objects and events that are not physically present in front of them. This ability develops between the ages of 2-7 years, known as the preoperational stage (Bashrin, 2015).

According to the standards of early childhood development achievement, indicators for cognitive development in symbolic thinking for children aged 4-5 years include counting objects from 1 to 10, recognising numeral symbols from 1 to 10, understanding numerical concepts, and recognising letters as symbols. Based on the previous

opinions, symbolic thinking ability refers to children's capacity to accurately and precisely recognise and understand numerical concepts. Meanwhile, the indicators for the development of extended thinking ability in 4-5-year-old children in this study are recognising numerical concepts from 1 to 10, recognising numeral symbols from 1 to 10, and counting several objects from 1 to 10.

In introducing numerical concepts, the role of the teacher is crucial in enhancing and developing students' abilities in counting according to their creativity (Fadhli et al., 2022);(Zain et al., 2022). To achieve success in educational goals, teachers can start by selecting suitable methods and media relevant to the taught material during the learning process (Maryono et al., 2022);(Sumaryanti et al., 2021). Gagne and Briggs (2016) stated that instructional media encompass various tools physically used to deliver teaching content, such as books, cassette players, recorders, videos, cameras, films, slides, photos, images, television, computers, and everyday objects around us. On the other hand, media that are engaging and enjoyable for students can have an impact on enhancing their enthusiasm for learning (Koriati et al., 2021). The more attractive the media used, the greater the motivation for children to learn. Using enjoyable and engaging media will facilitate children in following the learning process and can stimulate development in various aspects of early childhood. Instructional media helps build children's understanding of new concepts to be learned and enhances the effectiveness of the learning process (Amir, 2014).

The pre-cycle observations at Fullday PAS Baitul Qur'an Kindergarten show that children are having difficulties counting or reciting the sequence of numbers from 1 to 10. Additionally, children are also facing challenges in recognising and indicating numeral symbols. This is due to the monotonous nature of the media used by the teacher. During the learning activities, various tasks are conducted, such as colouring numbers, reinforcing and imitating numeral symbols, and working on exercise books. Based on the use of these media, it is known that 35% of the children have started to recognise and understand numerical concepts. In comparison, 65% of the children in the group still have low abilities in recognising numbers. Based on this data, there is a need to enhance the children's symbolic thinking abilities at Fullday PAS Baitul Qur'an Kindergarten.

Based on the background of the observation on symbolic thinking development, the researcher intends to implement appropriate and engaging media to enhance students' symbolic thinking abilities. *Mejilawi* is one of the media that can be used to introduce numeral

symbols or aspects of symbolic thinking to children. *Mejilawi* is an abbreviation or combination of the words media and clipped legume seeds. *Mejilawi*, or clipped legume seeds media, is a teaching tool that can support teachers in teaching numerical concepts. Using *mejilawi*, children become more interested in this media than in writing on the whiteboard.

According to the Indonesian Dictionary, *jepit* means to press or squeeze between two objects. Meanwhile, Hakim's perspective (2022) defines *menjepit* as the activity or action of tightly pressing or gripping between two things, either using tools or fingers (Hakim, 2022). *Biji* refers to the contents of a fruit that are hard and vary in quantity. Sastrapradja (2012) explains that in higher plants, mature ovules are formed in one or more ovaries in legumes (Sastrapradja, 2012). On the other hand, according to Luh Putu Henny Wijayanthi (2013), media *jepit biji-bijian* refers to a rigid plastic tool used to clamp or grip two objects, such as soybeans, corn, and beans, with specific shapes and sizes to stimulate children's cognitive development (Wijayanthi et al., 2013). Based on these definitions, it can be concluded that media *jepit biji palawija* refers to a tool used to press or clamp objects like legume seeds.

This legume seed clamping media is a type of media that is easy to make, safe, and attractive for children. With the clamping media, children will feel more challenged and interested in using it. They will develop logical thinking skills as they learn to solve the problems they encounter. The use of *mejilawi* contributes to various aspects of child development, including fine motor skills cognitive, social, and emotional development. Children will be more focused and concentrated while playing with this media. *Mejilawi* is usually used independently or collaboratively.

The research by (Sucianti, 2015) explains the steps involved in using the clamping media, which are as follows: (1) students freely choose the desired number; (2) students place it on a clothesline; (3) students search for a matching number card with a picture card to pair with the card attached in front of the chosen number while pronouncing it; (4) after pairing, students read the displayed number; (5) students are allowed to provide reasons for their number choice to understand or recognise that number; (6) children can remove and repeat the game with different numbers and pictures alternately with their friends.

Previous research will be used as a reference and guide in this study, especially in designing the steps for using the media. The previous

research also used clamping media as a learning tool. The clamping press, known as *mejilawi* or legume seed clamping media, used in this study is safe and easy to use. The steps for using it are as follows: the child arranges ten bowls neatly and counts them; the child arranges and places numbers 1-10 below the bowls; the child clamps the legume seeds properly; the child inserts the clamped legume seeds according to the numeral symbols; and the child is allowed to recount the number of sources in each bowl.

Thus, this will enhance children's motivation to learn, enabling them to master numerical concepts, associate numbers with their symbols, and accurately count the number of objects. Using *mejilawi* as a learning medium, children will be guided to face real, natural, and actual situations and events, making them more accountable. Some tangible benefits that can be obtained through the use of *mejilawi* include teaching children that everything around them can be used as a learning tool, providing more meaningful and authentic learning experiences, supporting the development of children's personalities, making the learning process more engaging for children, and stimulating focus during their learning activities (Ikhwan, 2019). The main objective of this research is to understand the use of the *mejilawi* method in enhancing children's counting abilities. More specifically, this research aims to achieve the following: improving children's symbolic thinking abilities in group A and describing the implementation of *mejilawi* in enhancing children's symbolic thinking abilities in group A at Fullday PAS Baitul Qur'an Kindergarten.

Method

This classroom action research (CAR) study uses legume seed clamping media to introduce numbers in Group A, conducted at Fullday PAS Baitul Qur'an Kindergarten. The research was born in the second semester of 2022/2023. The study was carried out in two cycles, following the model of classroom action research as proposed by Kemmis and McTaggart which involves a spiral process in its implementation. Each research cycle consists of four stages: planning, action, observation/evaluation, and reflection (Kemmis et al., 2014).

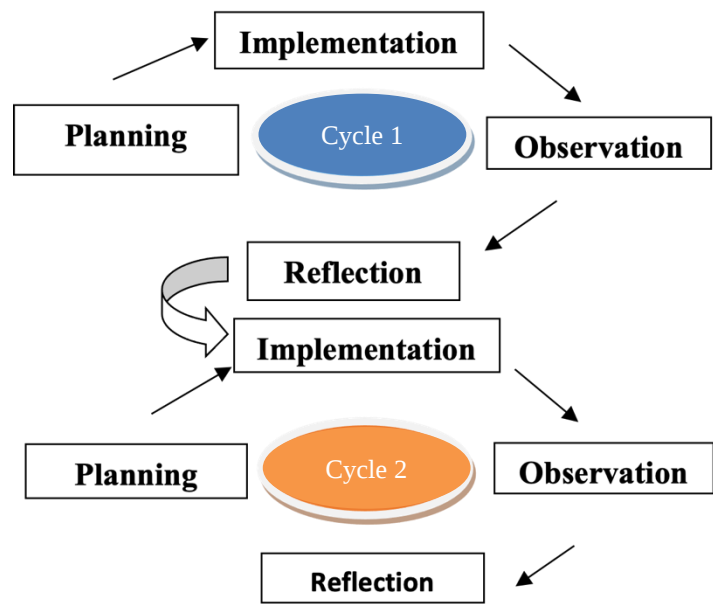


Figure 1. Kemmis and McTaggart action research model

In the planning stage, the researcher and the teacher collaborate to develop the Daily Implementation and Learning Plan to guide the upcoming activities. Furthermore, the researcher prepares observation/evaluation sheets as a guideline for observation and also prepares the legume seed clamping media that will be used during the learning process. The subjects of this study are students from Group A of Fullday PAS Baitul Qur'an Kindergarten in the academic year 2022/2023, aged 4-5 years, with a total of 20 children consisting of 11 boys and nine girls.

Data collection techniques in this study employed observation and oral tests. The data analysis used descriptive qualitative research, utilising observation sheets to assess the improvement of children's symbolic thinking abilities at the age of 4-5 years through *mejilawi*, which includes aspects such as recognising numerical concepts from 1 to 100, recognising numeral symbols from 1 to 10, counting objects from 1 to 10, as well as teacher monitoring sheets during the teaching and learning activities. The media used in this study included clothespins, various types of legume seeds, numeral symbols from 1 to 10, and bowls.

The criteria for learning success in this study are when children achieve a score of BSH (very good) and BSB (good) with a minimum of 80%, indicating the completion of a cycle. In the data analysis for the oral tests, the minimum score for children is five and the maximum score is 20, resulting in an assessment interval of 15.

Tabel 1. Children's achievement success

No	Score	Description
1	5-8	BB
2	9-12	MB
3	13-16	BSH
4	17-20	BSB

Assessment Criteria:

Score 1: The child performs with guidance or demonstration.

Score 2: Child does with some reminders or assistance.

Score 3: Children can independently and consistently carry out tasks.

Score 4: Children can be independent and help their peers.

Meanwhile, the minimum score for non-test assessments is three and the maximum is 12. Therefore, the score interval is 9.

Table 2. Children's achievement success

No	Score	Description
1	3-5	BB
2	6-8	MB
3	9-10	BSH
4	11-12	BSB

Assessment criteria:

Score 1: The child needs help and guidance.

Score 2: The child begins to not need guidance.

Score 3: Children are able to understand the material independently.

Score 4: Children can understand the material independently and help their friends.

The formula used to calculate the results of tests and non-tests is:

$$\text{Individual Score} = \frac{\text{Test Score} + \text{Non-Test Score}}{2}$$

The formula used to calculate the percentage of achievement success is:

$$\text{Classical Mastery Percentage} = \frac{JT}{JS} \times 100\%$$

Explanation:

CMP: Classical Mastery Percentage

JT: Number of students who achieved mastery (with scores of BSH and BSB)

JS: Total number of students

Result and Discussion

Based on the initial evaluation or pre-cycle, the observation results showed that 65% of students still had low symbolic thinking abilities, while 35% had sufficient. Based on these results, it can be concluded that the symbolic thinking abilities of children in Group A, aged 4-5 years, at Fullday PAS Baitul Qur'an Kindergarten, have yet to reach optimal development. Therefore, action is needed to enhance their symbolic thinking abilities through media such as the *jepit biji palawija* learning tool. This is expected to make children more interested in learning and prevent boredom caused by the teacher's monotonous use of teaching media.

Cycle I

Cycle I began with planning the learning activities between the researcher and the teacher. This includes determining the time for learning activities, preparing the Daily Lesson Plan (RPPH), preparing the learning media, and creating observation instruments and questions for an oral test. The implementation of cycle I was carried out in 2 meetings, which took place on June 14 and 16, 2023. Before the children used the *mejilawi* the teacher demonstrated how to use it.

After the children understood, the teacher asked them to learn using the *mejilawi* to enhance their symbolic thinking skills. In the first meeting, the teacher explained the concept of numbers and numeral symbols from 1 to 5. On the second day, the lesson continued with numbers and numeral symbols from 6 to 10. Media use began with the following steps: 1) Children arranged ten bowls neatly and counted them. 2) Children arranged and placed the numbers 1 to 10 beneath the bowls. 3) Children properly and accurately clamped the *palawija* seeds. 4) Children inserted the clamped *palawija* seeds using the corresponding numeral symbols. 5) Children were allowed to count the number of seeds in each bowl again.

From the research results on June 17, 2023, 11 children (55%) achieved BSH and BSB categories in the test and non-test scores, while nine children (45%) received BB and MB scores. The results of observations and oral examinations in cycle one can be seen in Diagram 1.

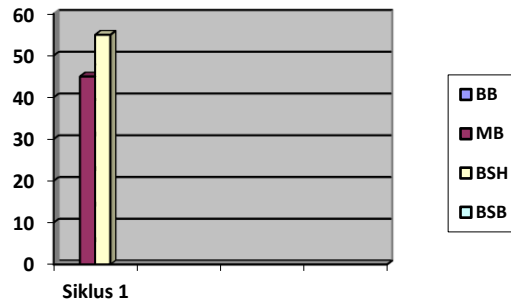


Diagram 1. Teacher's assessment of children's symbolic thinking skills

Based on the teacher's reflection during Cycle I, it was found that the children were not accustomed to using the seed clamp and faced difficulties. Additionally, they still need to focus more on understanding the concept and symbols of numbers 1-10. This indicates the need for improvement from the researcher and teacher to ensure that the learning activities can be carried out more optimally. In the next cycle, Cycle II, the activities for children in terms of symbolic thinking will be conducted using the same actions to maximise their abilities further, enabling them to become more accustomed to using the seed clamp media.

Based on the test results of Cycle I, there is an improvement compared to the initial observation test. However, this improvement has yet to reach an optimal level. Therefore, it is necessary to proceed to the next stage, which is Cycle II.

Cycle II

Cycle II was conducted by planning the implementation of learning activities between the researcher and the teacher. They determined the timing, learning activities, and Daily Lesson Plan (RPPH) and prepared the media, observation instruments, and oral tests. The implementation of Cycle II also took place in 2 meetings, namely on June 19 and 20, 2023. In Cycle II, the researcher and teacher attempted to improve the weaknesses identified in cycle I based on the observation results by replacing smaller types of *palawija* seeds. This is expected to prevent children from getting bored and make using the jepit biji *palawija* easier. The procedure for using *mejilawi* remained the same as in Cycle I.

Based on the research data and improvement in learning during Cycle II, the children's symbolic thinking abilities have shown excellent results. In the test and non-test assessments, 17 children (85%) reached the BSH and BSB categories, while three (15%) still obtained BB and

MB scores. The results of the observation and oral tests in Cycle II can be seen in Diagram 2

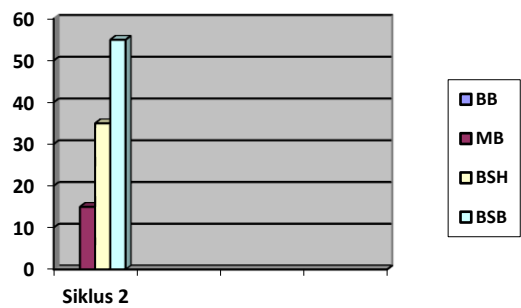


Diagram 2. Assessment of the teacher on children's symbolic thinking abilities

Reflection on Cycle II shows that children's abilities in recognising numbers 1-10, recognising numeral symbols 1-10, and counting objects have improved. After receiving guidance and reinforcement through *mejilawi*, children's abilities have improved in all aspects of symbolic thinking. Based on the data above, children's abilities in Cycle II have surpassed the expected success indicators.

Application of Mejilawi to Improve Children's Symbolic Thinking Ability

The application of *mejilawi* to enhance children's symbolic thinking abilities can be made through the following steps: 1) Children arrange ten bowls neatly and count them. 2) Children arrange and place numbers 1-10 under the bowls. 3) Children grip the *palawija* seeds correctly and accurately. 4) Children insert the gripped *palawija* seeds according to the corresponding numeral symbols. 5) Children can recount the number of seeds in each bowl. Among the various *palawija* seeds available, the researcher used corn and lotho beans for Cycle 1.

In Cycle 2, the researcher used smaller types of seeds, namely green beans and black soybeans. Children were more interested and happy to use these types of sources because they found that smaller seeds were easier to grip.

The results of this study indicate that using the *mejilawi* learning media in teaching and learning activities has successfully improved children's symbolic thinking abilities in each cycle. The improvement can be seen in diagram 3:

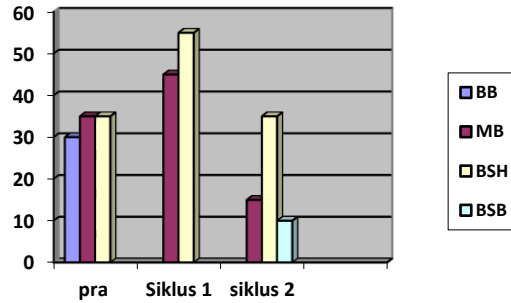


Diagram 3. Teacher assessment of children's symbolic thinking abilities after using mejilawi

After implementing interventions, the improvement in children's symbolic thinking abilities indicates the importance of selecting and utilising appropriate learning media in the teaching and learning process. By choosing learning media that align with the content and the learners being taught, desirable learning outcomes can be achieved in line with the learning objectives (Suryadi, 2020).

This issue is relevant to a study conducted by Lake (2019) they mentioned that concrete clothespin media can accelerate children's understanding of numeral symbols or numbers (Lake, 2019).

Conclusion

The increase in students' symbolic thinking abilities after implementing the *mejilawi* media indicates that the presence and selection of appropriate learning media are crucial in the learning process. This is evident from the results of the symbolic thinking abilities of 4-5-year-old students at TK Fullday PAS Baitul Qur'an. In the first cycle, 11 children (55%) obtained BSH and BSB scores, while 17 children (85%) achieved BSH and BSB scores in the second cycle. The implementation of the Mejilalawi learning media in enhancing the symbolic thinking abilities of TK Fullday PAS Baitul Qur'an Gontor students consists of five stages: (1) students arrange ten bowls neatly and count them; (2) students arrange and place numbers 1 to 10 below the bowls; (3) students grip the grains of legumes properly and correctly; (4) students place the gripped legumes into the bowls according to their symbolic representation; and (5) students are given flexibility and opportunities to recount the number of legumes in each bowl.

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