

Implementation of Mandar Culture Based Educative Game to Improve Cognitive Ability in Early Children

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ABSTRACT: *The cognitive aspect is one part of the 6 aspects of child development. In addition, the importance of introducing local culture, in this case, Mandarin culture in early childhood. It's just that the increase in this ability is felt to be lacking in the Bunga Sartika Polewali Kindergarten (TK) Playgroup (KB). This is due to the lack of application of educative learning media based on local culture, especially Mandarin culture which is expected to be able to improve the cognitive abilities of early childhood as well as introduce Mandarin culture as a local regional culture. Therefore, learning media is needed that can help teachers, namely Educational Game Tools. One of the media in question is a mandar culture-based connecting board. The type of research used is Classroom Action Research (CAR), with the aim of improving the cognitive and psychomotor abilities of early childhood through the implementation of Mandarin culture-based educational games. This research is expected to be a reference for kindergarten teachers in carrying out efficient, effective and innovative learning. The use of media in learning can develop cognitive abilities and shape the morale of students which are of course indicators of aspects of early childhood development. The results of this study indicate that through the application of Mandar local culture-based Education Games application media, the cognitive abilities of the children of TK Bunga Sartika Polewali, West Sulawesi can be increased, both from the teacher's teaching activities, children's learning activities, as well as from the results of student learning tests, which in the cycle I cognitive abilities of children related to types of musical instruments, special foods, dances, Mandar traditional clothing are in the sufficient category while in cycle II cognitive abilities are in the good category.*

KEYWORDS –Mandar Culture, Cognitive Ability, Educative Game

I. INTRODUCTION

Early Childhood Education as one of the keys to determining the nation's future plays an important role in strengthening local cultural values. This was further strengthened by the issuance of Minister of Education and Culture Regulation number 137 of 2014 concerning PAUD Standards Article 9 regarding content standards which require that themes and sub-themes be prepared according to the characteristics, needs, stages of child development, and local culture [1] & [2] On this basis, local culture-based PAUD learning management must be utilized, so that children can grow and develop optimally without forgetting their own noble cultural values. It is hoped that concerns about the impact of global education will gradually shift the position and bargaining power of local culture can be avoided by introducing local culture from an early age [3].

In addition, learning activities for early childhood must still be guided by the principles of early childhood learning, namely learning through play, so that learning objectives can be achieved. Early age is a

golden age for a child, where all aspects of child development grow and develop rapidly [4]&[5]. There are several aspects of early childhood development including aspects of cognitive development and psychomotor aspects. The development of all these aspects must be carried out in an integrated manner according to the stage of child development.

Children's cognitive development is the result of the process of absorbing new information into existing information in the child's cognitive structure (assimilation) and experiencing the process of integrating new information with existing information in the schema so that the combination of information expands the child's schemata (accommodation). According to [5], [6], & [7] this cognitive aspect is related to how to develop thinking skills so that children can relate, give value, calculate, and how children can solve the problems they face and how children produce work as a form of creativity.

Early childhood education is inseparable from the concept of learning while playing. As stated by Piaget namely playing is a child's need, can generate a feeling of pleasure, provide opportunities for exploration, find and use objects around them, express feelings, be creative and learn in a fun way and gain new knowledge, by playing the learning process for children is very fun [8]. Educational games are games that have educational elements and are part of the game itself [9]. According to [10], [11] educational games are fun activities as well as educational ways that are educational. Educational games have characteristics such as grouping, disassembling, combining, finding a match, assembling, forming, compiling, and so on.

The benefits of educational games for children according to [12] include: 1) training concentration, educational games are designed to explore children's ability to concentrate, for example when putting together a puzzle, children are required to focus on the shape or image in front of them. 2) train motor skills, educational games will stimulate fine motor and gross motor. Fine motor skills are obtained when children touch, hold with their five fingers, and so on, while gross motor skills are obtained when moving their toys, throwing, lifting and so on. 3) train language and insight, educational games are very good when accompanied by storytelling, this improves language skills as well as breadth of insight. 4) introduce colors and shapes, with educational games children can recognize various shapes and colors.

But in reality, learning practices at an early age level, especially in the Bunga Sartika Polewali Kindergarten, Polewali Mandar, West Sulawesi, are still lacking in the application of educative learning media based on local culture, especially Mandarin culture which is expected to be able to improve not only cognitive abilities but also be able to improve the psychomotor abilities of early childhood while at the same time introducing local culture, especially Mandarin culture. One of the reasons is because the learning pattern that is carried out tends to be academic in nature, namely learning that places more emphasis on achieving children's abilities in reading, writing and arithmetic and a lack of introduction to local culture, in this case, Mandarin culture. Therefore, learning media is needed, namely Educational Game Tools (EGT) such as Mandar Culture-based Liaison Boards.

APE Liaison Board based on mandar culture is an alternative that can be used by early childhood educators in carrying out learning. This media is expected to be able to apply the concept of learning while playing so that learning is more qualified and meaningful. This EGT is able to introduce typical Mandar musical instruments, accessories on traditional Mandar clothes, traditional Mandar houses, typical Mandar foods, and so on. This tool is able to create fun learning for students. This is in line with research [13]& [14] which revealed that the implementation of local culture-based educational games could improve student learning test results in Group B at Lotus Kindergarten in Makassar City. Besides that, [15], [16], & [17] in his research it was found that the application with APE media could improve the cognitive abilities and psychomotor abilities of early childhood. APE that is applied to learning should also emphasize the local culture of the local area so that it can preserve and foster a Chinese sense of its own culture.

This research is important to carry out because carrying out learning using APE based on Mandarin culture can arouse students' motivation and make learning more enjoyable. Students feel that they are only playing but from the games given they are not only able to recognize numbers, are able to count but know the culture of Mandar as a culture in Polewali Mandar district, West Sulawesi. Therefore it is hoped that by

implementing learning using EGT so that children can grow and develop optimally without forgetting their own noble cultural values besides being able to hone their cognitive abilities.

II. METHODS

This research is a Classroom Action Research (CAR). According to [mmmsj] CAR is the process of assessing learning problems in the classroom through self-reflection in an effort to solve problems by carrying out various planned actions in real situations and analyzing the effects of each action. In this study, the actions taken in an effort to improve the cognitive abilities of early childhood through educational game tools based on Mandarin culture.

The focus of this research are (1) Educational Game Tools (EGT) based on Mandar culture which are tools that can be used in the learning process where the APE is expected to be able to introduce educational values originating from local regional culture; (2) Improving cognitive abilities of early childhood.

This research will be carried out at PAUD in Bunga Sartika Kindergarten KB Bunga Sartika, Polewali Mandar Regency, West Sulawesi in 2023 with a total sample of 23 students. The classroom action research model used in this study is the Kemmis and McTaggart model. The stages in class action research (Classroom Action Research) according to Kemmis and Mc. Taggart cited by [18] consists of four components, namely planning (planning), action (action), observation (observation), and reflection (reflection), then the four components are arranged in a cycle of interrelated activities, where in research This study was planned for two cycles, namely the first cycle and the second cycle. Each cycle is carried out for three meetings and at the end of each cycle an evaluation is carried out. The implementation of the second cycle of action is a continuation and improvement of the implementation of the first cycle of action. In detail, the relationship between each component and other components in each cycle can be described as follows:

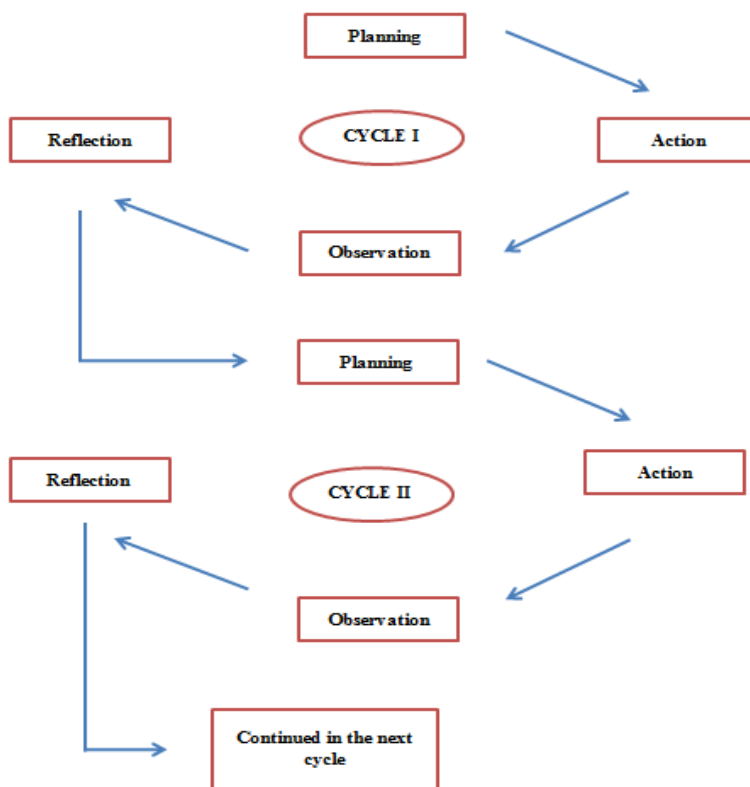


Figure 1. Class Action Research Flow

1.1 Data Source

- Early childhood students, to obtain data about cognitive abilities, and student activities in the learning process

- Educators see an increase in the cognitive abilities of students using EGT based on Mandar culture in the teaching and learning process and the activeness of students.
- Collaborator, in classroom action research is someone (educator) who helps to collect data about research that is done together with researchers. Collaborators are intended as data sources to see the implementation of CAR in a comprehensive manner from students and educators

1.2 Techniques and Data Collection

The analysis used in this research is observation, interviews, and documentation. Data collection instruments used in this study, namely:

- a. Tests of Cognitive Ability and Psychomotor Ability
- b. Observation (Observation)
- c. Interview
- d. Documentation

1.3 Data Analysis

Data analysis basically aims to process quantitative and qualitative information in such a way that the information becomes meaningful. In this study, the data analyzed were the results of learning activities. Analysis of children's learning was carried out at each meeting in cycle I using a descriptive quantitative percentage technique. The formula used in data analysis using descriptive quantitative percentage techniques according to Anas Sudijiono [15] is as follows:

$$P = \frac{f}{N} * 100\%$$

Information:

P = Percentage Number

f = Frequency that is being searched for the percentage

N = Number of frequencies

To find out the increase in cognitive and psychomotor abilities of early childhood is done by comparing the percentage of scores obtained by children before and after learning with EGT media based on Mandar culture.

III. RESULT AND DISCUSSION

Learning material in cycle I is about getting to know Mandar musical instruments and Mandar special food. The material was taught in two meetings. The plan was prepared by the researcher in collaboration with the class teacher in preparing daily lesson plans. The researcher also compiled children's worksheets and learning achievement tests in the form of formative tests, and prepared observation sheets of teacher teaching activities and children's learning activities for cycle I. Cycle I consisted of two meetings.

In the core activity (implementation) of learning, the teacher determines the steps of the activities that will be carried out in the implementation of the demonstration method, namely demonstrations/demonstrations carried out by the teacher in front of the class and then followed by all children by distributing children's worksheets to all children where the LKS contains about how to -methods/steps of activities to be carried out in lesson demonstration activities through local culture-based *Papan Penghubung* media. After that, the teacher starts a demonstration in front of the class which allows all children to see clearly the teacher's demonstration, and guides and directs the children to follow/perform the demonstration. To activate children in learning, the teacher conducts demonstrations in front of the class and is followed by all children with worksheets as a guide for demonstration activities and the teacher takes turns appointing children to come to the front of the class to try or demonstrate lessons through the local culture-based Education Games application media. While doing demonstrations, children fill out LKS and are guided by the teacher.

In the final activity, the teacher conducts an evaluation, namely by giving a formative test for the end of the cycle I action regarding learning material at meetings I and II, namely getting to know the types of mandarin musical instruments and typical mandarin food.

Evaluation is carried out with the aim of seeing the success of learning that has been carried out in the first cycle of action. Learning in cycle I aims so that children can understand the learning objectives that have been set. The results of observations made by researchers assisted by class teachers include evaluation of the process and evaluation of learning outcomes.

Process evaluation was carried out to find facts from the research subject's activities, it was found that the child subject demonstrated well through the Mandar culture-based Education Games application media, but there were still children who did not dare to try demonstrations through the local culture-based Education Games application media when appointed by Teacher. In addition, there were still children who paid little attention when demonstration activities took place, occasionally telling stories with their friends or just playing. Realities like this show that the process of implementing learning has not met expectations as the researchers hoped.

In addition to this, there were still children who showed that they did not understand the material presented by the teacher, where the child could not answer the questions the teacher gave. To overcome this, teachers need to increase their attention to children who do not understand. This attention can motivate children to be more active in learning activities.

The results of observations or observations of teacher teaching activities are summarized in observation sheets of teacher teaching activities through the Mandar culture-based Education Games application media so as to improve learning outcomes about the concept of integers. Based on the results of observing the teacher's teaching activities in the learning process after implementing learning through the Mandar culture-based Education Games application media, it shows that the indicator in cycle I is the child's ability to recognize Mandar musical instruments and Mandar special food.

The learning material taught in the second cycle of action is a continuation of the material in the first cycle, namely getting to know the Mandar traditional clothing and the Mandar dance. The material was taught in two meetings. As with cycle I, planning, core activities, and evaluation in cycle II were prepared by researchers in collaboration with class teachers.

The results of observations or observations of teachers' teaching activities are summarized in observation sheets of teachers' teaching activities in using learning through the Mandar culture-based Education Games application media so as to improve cognitive abilities. Based on the results of observing the teacher's teaching activities in the learning process through the local culture-based Education Games application media, it shows that the indicators in cycle II meeting I, as follows: in the teacher's activity preparing tools and materials to be used in learning activities through culture-based Education Games application media Local learning is in the very good category (SB), in the activity of conveying the learning objectives to be achieved it is in the good category (B), in the activity of explaining the steps on how the activity will be carried out it is in the good category (B), in the activity of distributing sheets child work is in the very good category (SB). Learning is carried out using the *Papan Penghubung* media.

In this case the researcher can conclude that the results obtained by the researcher, namely two cycles of which explain each cycle obtained by the researcher to increase the curiosity of children in Kindergarten Bunga Sartika Polewali, West Sulawesi. Activities carried out by researchers, namely using connecting board media in children to stimulate cognitive abilities in children. The data obtained from the researcher is shown in the following diagram based on the observation sheet:

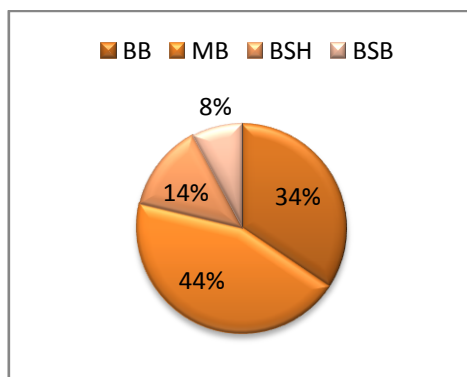


Figure 2. Cognitive Ability Cycle I

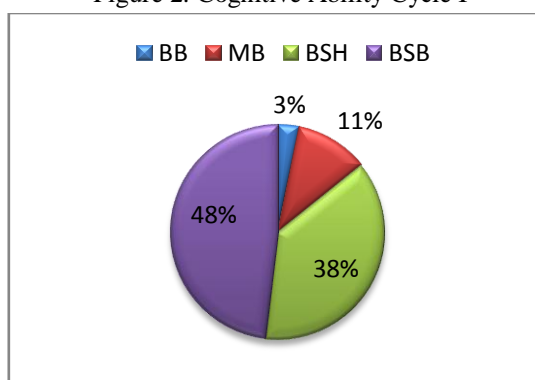


Figure 3. Cognitive Ability Cycle II

The development of children per cycle for each indicator can be seen in the following table.

Table 1 Child Development for Each Indicator in Cycle I.

Indicator	Cycle I			
	BB	MB	BSH	BSB
1	7%	30%	39.1%	26%
2	9%	52%	26%	17%
3	10%	73%	17%	4%
4	39%	52%	4.3%	0%
5	60%	30.4%	0%	0%
6	69%	26%	0%	0%
7	56%	34.7%	0%	4%

Table 1 shows the developments that have occurred in each indicator, especially cycle I. The evaluation of the indicators in the undeveloped (BB) and starting to develop (MB) category looks quite high compared to the developing as expected (BSH) and very well developed (BSB) categories. Cycle I gave quite good results because it showed improvement in children, but there were still things that could be used as a reflection where none of the children had reached a very well developed stage which would be improved again through cycle II.

Table 2 Child Development for Each Indicator in Cycle II

Indicator	Cycle II			
	BB	MB	BSH	BSB
1	0%	4%	52%	39%
2	0%	0%	52%	43%
3	0%	13%	39%	43%

4	0%	17%	30%	47%
5	8%	17%	21%	47%
6	13%	8%	26%	47%
7	0%	13%	30%	52%

The development of the children for each indicator in Cycle II is shown in Table 2. The assessment of the indicators in the undeveloped (BB) and starting to develop (MB) category indicators seemed to have decreased compared to the developing categories according to expectations (BSH) and very well developed (BSB). Cycle II gave very good results because it showed an increase in cognitive abilities in children.

Table 3 Child Development for Each Indicator in Cycle I to Cycle II

Indicator	Cycle I to Cycle II			
	BB	MB	BSH	BSB
1	0%	-26%	12.9%	13%
2	0%	-52%	26%	26%
3	0%	-60%	22%	39%
4	-39%	-16.6%	25.6%	47%
5	-52%	-9%	21%	47%
6	-56%	-18%	26%	47%
7	-56%	-20.3%	30%	48%

Cycle II went quite smoothly and to find out whether cycle II was also successful in understanding related to the types of Mandar dances and traditional Mandar clothing, an evaluation was held which aimed to make the teacher able to see how successful the learning was that was applied so that children were able to understand the objectives of the learning being carried out. determined in cycle I and cycle II. The process of developing the results from cycle I to cycle II is shown in Table 3. Table 3 shows the developments that occurred where the assessment category developed very well showing results in the form of a decrease in the undeveloped (BB) value category, starting to develop (MB) while the developing category was as expected (BSH) and very well developed experienced an increase. Even in the BB category there is an indicator that is 0% which means that there are no students in that category.

IV. CONCLUSION

Based on the results of the research and discussion previously stated, it can be concluded that through the application of the Mandar local culture-based Education Games application media, the cognitive abilities of the Bunga Sartika Polewali Kindergarten, West Sulawesi can be increased, both from the teacher's teaching activities, children's learning activities, and from the results student learning tests, where in the first cycle the children's cognitive abilities related to the types of musical instruments, special food, dance, Mandar traditional clothes were in the sufficient category while in the second cycle the cognitive abilities were in the good category. It can be said that learning using educational game tools, in this case the Mandar culture-based *Papan Penghubung*, can improve children's skills very well in the subject matter of problem-solving indicators and are symbolic. This shows that children are able to solve their own problems. The results can show that after children are given the freedom to be able to solve their own problems, therefore children are said to be able to understand Mandar culture as the local culture of West Sulawesi.

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