

Application of the Mathematics Curriculum in Intan Cendekia Islamic Kindergarten at Mataram City

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ABSTRACT

Article History:

Received : 03-07-2021

Revised : 14-10-2021

Accepted : 20-10-2021

Online : 26-10-2021

Keywords:

Curriculum;

Mathematics;

Primary Education



The purpose of this study was to describe the application of the Mathematics Curriculum at Intan Cendekia Islamic Kindergarten in Mataram City. The research utilized descriptive qualitative research and three teachers and one principal as research subjects. Data collection was carried out using observation, interviews, and documentation. The data that has been collected was analyzed using qualitative descriptive data analysis techniques, which were carried out continuously with data analysis activities, namely: data reduction, data display, and conclusion draining/verification. The results of the study show that the application of the mathematics curriculum in the kindergarten consists of planning mathematics learning, implementing mathematics learning, and assessing mathematics learning. Learning planning starts from preparing curriculum planning which consists of planning learning methods, planning space and plays centers, and planning learning process documents. The implementation of mathematics learning with the play method and the content of the initial mathematical concepts, namely matching, grouping, serialization, geometry and numbers. While for assessment applied observation assessment, an anecdotal record of performance assessment, and product assessment.



<https://doi.org/10.31764/jtam.v5i2.5168>



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A. INTRODUCTION

Early childhood education is a program for coaching aimed at children from birth (0 years) to 6 years (UU RI Nomor 20 pasal I ayat 14 2003), which is carried out through the provision of educational stimuli to help physical and spiritual growth and development. so that children have the readiness to enter further education (Apriani, 2016). While Ashifa (2019) points out that early childhood is individuals who are different, unique, and have their own characteristics according to their age stages. Early childhood (0-6 years) is a golden age where stimulation of all aspects of development plays an important role in developmental tasks.

Children are future assets that must be nurtured for their potential because good conditions for child growth and development will affect the quality of humans (children) in the future. In the first five years of life, or what is known as the golden years, a child has enormous potential to develop. At this age, 90% of children's physical and brain conditions have been formed (Rahelly, 2018). Therefore, at that time the child should begin to be directed. Early childhood is those aged between 3 - 6 years (Pramana, 2020). To optimize the potential at this time, directed

education is needed. Early childhood education can be organized through formal, non-formal, and/or informal education channels. Early childhood education in formal education is in the form of Kindergarten, Raudat ul Athfal (RA), or other equivalent forms. Early childhood education in non-formal education is in the form of play groups, childcare facilities, or other equivalent forms. Early childhood education in the informal education path takes the form of family education or education organized by the environment (UU No.20 Tahun 2003).

Research on child development and educational outcomes shows both long-term and short-term benefits of PAUD (Sum & Taran, 2020). The short-term benefit of early childhood education is an increase in the intelligence aspect of the child, while the long-term benefit is an increase in school completion rates. Involving children in early childhood education provides several benefits, including preparing children to achieve learning readiness (academic) at school, detecting potential and or obstacles experienced by children from an early age, providing opportunities for children to learn to socialize with their environment, get educational play facilities, and get education on good character (Wijoyo & Indrawan, 2020).

At an early age, a child experiences extraordinary growth and development, both in terms of physical, motor, emotional, cognitive, and psychosocial. This is a challenge for teachers or early childhood education managers in fostering it, it is necessary to have an appropriate and good curriculum. The curriculum is the core of the field of education influences on all educational activities. Efforts to foster, grow, and develop all the potential of children from these 6 aspects of development, we need a plan that becomes the center of educational activities in early childhood education. This plan is called curriculum. The curriculum is a set of plans and arrangements regarding the objectives, content, and development materials as well as the methods used as guidelines for the implementation of development activities to achieve certain educational goals (Permen 137 tahun 2014).

In order to provide accountable education, every school (including early childhood education) needs to have a systematic education plan, which is called a curriculum (Maryatun, 2016). The curriculum is a written learning experience plan. The curriculum will produce a process that will occur entirely in schools. The design will be a syllabus in the form of a list of lesson titles and the sequence will be arranged coherently so that it is a program. This curriculum includes everything that will be done to educate children and which is closely related to that education (Agung & Asmira, 2018).

The importance of the curriculum in education and human life, the preparation of the curriculum cannot be done without a strong foundation. The preparation of a curriculum that is not based on a strong foundation will be fatal to the failure of education. By itself will also result in the failure of the human development process, (Minarti, 2011). Since the implementation of the 2013 Curriculum, in the early childhood education spread across the Mataram city, many teachers and managers have switched to using this latest curriculum.

The results of interviews were conducted with the teachers of Islamic Intan Cendekia Kindergarten; several early childhood educations have implemented lesson plans using the 2013 curriculum. However, there are still obstacles for teachers to implement the mathematics curriculum. In addition, the results of interviews with school principals stated that there were still gaps in the implementation of the 2013 curriculum which was not in accordance with government curriculum standards and did not use a scientific approach. Teachers do not understand the application of learning in the 2013 curriculum with a scientific approach. This is shown from the lesson plans, strategies, methods, learning models that are used more using student worksheets and several textbooks provided by the government. This is not in line with the 2013 curriculum so that teachers are not creative in finding relevant material, the existing material is not in accordance with the needs of students, in learning it is still the traditional way. Winata (2016) states that teacher competence is still lacking, this is evidenced by the teaching

practice carried out by the teacher using the lecture method, one way without involving children's activities.

Therefore, as an effort to improve the quality of learning, it must begin with the improvement or development of a curriculum. Because of the importance of the curriculum, it is necessary to have reliable educators in curriculum development. Therefore, researchers are interested in examining the problem of applying the mathematics curriculum in Intan Cendekia Islamic Kindergarten.

B. METHODS

The research used is descriptive qualitative research. According to Chih-Pei & Chang (2017) that descriptive qualitative research aims to describe what conditions occur in the field. This study was conducted to determine the application of the mathematics curriculum in Intan Cendekia Islamic Kindergarten, with research subjects involved are 3 teachers and 1 principal. The focus of this research is directed at the application of the mathematics curriculum in Intan Cendekia Islamic Kindergarten in terms of the stages of learning mathematics and namely planning mathematics learning, implementing mathematics learning, and assessing mathematics learning. Data collection was carried out using observation, interviews, and documentation. The data that has been collected was analyzed using qualitative descriptive data analysis techniques, which were carried out continuously with data analysis activities, namely: data reduction, data display, and conclusion draining/verification (Dowding, 2013).

C. RESULT AND DISCUSSION

The application of mathematics learning in Intan Scholar's Islamic Kindergarten pays attention to the age and level of knowledge development of children based on several learning theories presented by experts.

First, according to Piaget (1896-1980) in (Simbolon et al., 2019) famous for his idea of four stages of cognitive development in a child. In the second stage, the stage of preoperational thinking (2-7 years), children at this stage can quickly learn a language and the ability to use symbols that represent real objects. However, many math materials such as numbers and volumes are not given until the child is at the concrete stage of 7-11 years. The strength of Piaget's approach lies in the child's thinking and active involvement in the environment.

Second, according to Vygotsky (1896-1934) in (Laghi, 2019) is a psychologist from Russia. Vygotsky's thinking divides two types of development, namely natural and cultural. Natural development influences the idea that children naturally learn so that they produce maturity for themselves. Whereas in cultural development, child maturity is obtained from interactions between children or with adult guidance. Maturity will increase with the use of language. The process of child cultural development works in the zone of proximal development. This zone shows the limits of children's thinking independently and can develop with the help of friends or adults. Vygotsky thinks that children in the early stages of learning need help or scaffolding. The help is several instructions that are gradually reduced until finally the child can master certain skills independently.

The Mathematics curriculum at Intan Cendekia Islamic Kindergarten is emphasized on providing educational stimuli to help physical and spiritual growth and development so that children have the readiness to enter further education. The developmental aspects that are emphasized in Intan Cendekia Islamic Kindergarten include the development of moral and religious values, social, emotional and independence, cognitive, physical/motor, and artistic. This aspect is used according to the regulation of the Minister of Education and Culture 137 of 2014 concerning the National Standards for Early Childhood Education, it is stated by STPPA (Kementrian Pendidikan Nasional RI, 2014) that the scope of the Kindergarten curriculum

includes aspects of moral development and religious, social, emotional and independence, cognitive, physical/motor, values and aspects of development and art.

The following describes the planning of mathematics learning, the implementation of mathematics learning, and the assessment of mathematics learning in Intan Cendekia Islamic Kindergarten.

1. Planning

Mathematics learning planning at Intan Cendekia Islamic Kindergarten is curriculum planning which consists of planning learning methods, planning space and play centers, and planning learning process documents.

a. Learning Method Planning

The mathematics learning method used in Intan Cendekia Islamic Kindergarten is the play method. Play is a vehicle to provide various experiences for children. By playing children can explore, experiment with various experiences that are very beneficial for physical growth and skill development. Playing, with its various variations, can move various parts of the child's body, which means it can also stimulate the nerves in the brain. Play activities can provide opportunities for children to express impulses in their fine motor system, as well as opportunities to feel objects and challenges to find things in new ways but to achieve these goals (improve fine motor skills), it takes a good intensity of play and quality. In line with this statement, in article 31 of the conference on children's rights it is stated that playing for children is the most influential factor in the development period which includes the physical, social, and communication systems (Perdani, 2013, Darminiasih et al., 2014, and Prawoko et al., 2019).

b. Classroom and Play Center Management

Classroom management is an effort that must be carried out by teachers/educators with good class management so class management can be carried out so that learning can be achieved (Muryani, 2019 Nada, 2019 and Rini, 2019). The classroom and play centers at Intan Cendekia Islamic Kindergarten is the turn system, for example in Kindergarten A class on Monday the nature center, then Tuesday the role center, and so on. With this system, children can explore all their talents and desires without feeling bored to learn. The centers available at Intan Cendekia Islamic Kindergarten are: a) role center, b) beam center, c) nature center, d) design center, e) preparation center, and f) worship center. Especially on Fridays, joint exercises, ablution, and dhuha prayers are held for all classes. In this kindergarten there are 2 classes for kindergarten A and 6 for kindergarten B.

c. Learning Document Planning

The lesson plan by the teacher at Intan Cendekia Islamic Kindergarten is carried out before teaching. All teachers have prepared curriculum documents such as PROTA, PROMES, RPPM, RPPH.

2. Acting

The implementation of learning in Intan Cendekia Islamic Kindergarten uses the play method by paying attention to the content of the mathematics material developed in the curriculum. Playing math is important for early childhood. According to (Kemdikbud, 2020) that playing mathematics for early childhood is an activity designed to introduce early mathematical concepts through fun playing. Children start to learn mathematics in their daily activities. When looking at his fingers, children will learn to count. When the child has 2 chocolate cakes and 1 cake is given to his mother, the child will know that there is only 1 chocolate cake left. Children's daily life is very close to mathematics, but many understand that mathematics is only about numbers, addition, and subtraction. In fact, many other beginning math concepts need to be introduced to children.

Knowing mathematics in kindergarten is important. According to Dini (2016) and Sari (2017) that kindergarten age children are a very strategic period to introduce counting in mathematics, because kindergarten age is very sensitive to stimuli received from the environment. His high curiosity will be channeled if he gets stimulation / stimulation / motivation that is in accordance with his developmental task. If counting activities are given through various kinds of games, it will be more effective because playing is a vehicle for learning and working for children. It is believed that children will be more successful in learning something if what they learn is in accordance with their interests, needs, and abilities.

The mathematical concept taught at Intan Cendeki Islamic Kindergarten is the Beginning Mathematics Concept which consists of:

a. Matching

The first mathematical concept taught at Intan Cendeki Islamic Kindergarten is the concept of matching. The concept of matching is used to describe things that have something in common (e.g. similar designs, colors, shapes, and sizes).



Figure 1. A student is matching blocks that have the same size

Figure 1 shows that a student is matching blocks that have the same size. According to Kemdikbud (2020) matching is a one-to-one correspondence concept. Correspondence is the ability to find and connect an object with its partner, one object only has one partner. The ability to match is the earliest mathematical concept that must be developed and is the basic form of development of the ability to think logically. Matching activities begin by identifying similarities and differences between objects/objects. Matching

The second mathematical concept taught is classifying. Children group objects based on certain characteristics.

activities using digital media with the concept of picture guessing games, coloring and matching pictures using Adobe Flash CS can make children recognize pictures of animals, fruits, colors and hone their skills and imagination while playing so they don't seem forced because the games shown are more in terms of play, which is generally the age of pre-school children included in the playing period (Soleh, 2011).

b. Classify /Froup



Figure 2. A student is grouping objects based on the same color and size

Figure 2 shows a student is grouping objects based on the same color and size. Kemdikbud (2020) explained that classification is one of the important processes for developing the concept of numbers. Children can recognize the

Seriation is the ability to arrange or position objects based on differences and variations.

concept of grouping by finding similarities in objects/objects, for example, based on color, type, size, shape, number, and function.

c. Seriation



Figure 3. The students are learning to adjust the position of the tambourine based on its size and is the application of seriation

Figure 3 shows the students are learning to adjust the position of the tambourine based on its size and is the application of seriation. Seriation is a higher ability than compare. Seriation is the ability to place objects in one order, for example, from small order to a larger one or vice versa (Kemdikbud, 2020).

understanding geometry. As children begin to identify shapes, they develop an early understanding of geometry. According to Kemdikbud, (2020), most preschoolers begin to learn the names of basic two-dimensional shapes: circle, square, triangle, and rectangle.

d. Geometry



Figure 4. The students are arranging geometrical blocks based on the type of spatial structure being studied

The picture above shows that the students are arranging geometrical blocks based on the type of spatial structure being studied. Geometry is important to learn because geometry is a mathematical concept that deals with questions of shapes and spatial relationships. Understanding shapes is fundamental to

e. Counting



Figure 5. A student is showing the result of her count

Numbering and counting are important parts of understanding children's mathematical concepts. These early mathematical concepts laid the foundation for more complex mathematical processes in the future. The concept of numbers learned at Intan Cendekia Islamic Kindergarten is using local contexts.

3. Assessment

The assessment of mathematics learning carried out in Intan Cendekia Islamic Kindergarten consists of:

a. Observation

Observation is a method of collecting data to obtain information through direct observation of the fields of habituation development (religion, moral, social emotional, and independence) and the fields of developing basic abilities (language, cognitive, physical/motor skills, and arts) which are carried out every day continuously. For the observation to be more focused, it is necessary to have a helpful book or note paper developed by the teacher to record things that are considered necessary and as outlined in the RKH.

b. Anecdotal Record

Anecdotal records are records of children's attitudes and behavior specifically that occur to children incidentally/suddenly or in certain situations.

c. Performance

Performance assessment is an assessment carried out by observing children's activities in doing something, for example; singing practice, sports, role playing, demonstrating an art. Performance appraisal needs to consider the observed aspects so that they can be assessed. Performance appraisal techniques can be carried out using a checklist instrument or instrument format or a rating scale.

d. Product

The product is the result of the child's work after doing an activity, it can be in the form of handwork or art. Assessment of children's work is not obtained from the final result but also from the manufacturing process.

D. CONCLUSION AND SUGGESTIONS

Mathematics learning is important for children who attend Kindergarten education. This is because mathematics can develop children's cognitive abilities and as a preparation for mathematics skills at the next level of education. The application of the mathematics curriculum applied in kindergarten consists of planning mathematics learning, implementing mathematics learning, and assessing mathematics learning. Learning Planning starts from preparing curriculum planning which consists of planning learning methods, planning space and play centers, and planning learning process documents. The implementation of mathematics learning with the play method and the content of initial mathematical concepts, namely matching, grouping, serialization, geometry, and numbers. As for the assessment, it uses an assessment of observation, anecdotal records of performance, and product.

Suggestions from researchers that learning mathematics for kindergarten need to pay attention to the characteristics and psychology experienced by children. Kindergarten teachers need to have the ability to use local contexts in teaching mathematics beginning. Teachers must be able to design learning in kindergarten units to improve children's character.

ACKNOWLEDGEMENT

We would like to thanks a lot to the head of the Intan Cendekia Islamic Kindergarten, the teachers, and education staff who have granted research permission.

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