

Science Learning Strategies in Islamic Kindergarten

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ABSTRACT

The 2013 Early Childhood Education Curriculum uses a scientific approach in the learning process. Through a scientific approach, early childhood is stimulated to develop the ability to think critically, creatively, communicatively and collaboratively. One of the implementations of a scientific approach is through science learning, because through science early childhood will be facilitated practicing various activities that will build higher-order thinking skills. Implementation of science learning requires learning strategies and appropriate media and requires sufficient understanding of the teacher who will practice it. Islamic Kindergarten is an institution that presents more learning in a religious context, but does not rule out the possibility, science learning is also needed to be developed in Islamic Kindergarten institutions. The result of this articles found that strategies in science learning that can be practiced and developed by teachers in Islamic kindergartens are the relevant curriculum and the right concept of learning science for early childhood, Al Qur'an and Al Hadith as the main source of science learning in Islamic kindergartens, Teachers need to create a fun atmosphere of science learning, by mastering the various tools or media used in science classes and giving awards through recognition given by the teacher for their attitude during learning process.

Keywords: *Politeness, early childhood education, science learning, Islamic kindergarten.*

1. INTRODUCTION

Science education for early childhood received the attention of researchers. Research that focuses on science education in early childhood who is considered unimportant and too young to think critically. The importance of science learning is contained in the 2013 PAUD Curriculum by the Ministry of Education and Culture [1] specifies a scientific approach in the learning process, especially in early childhood education. One of the implementations of the scientific approach can be done through science learning, because early childhood science will be very facilitated in practicing various activities that will build higher-order thinking skills. So, it has an urgency to get quality science education as well as the skills of Islamic Kindergarten teachers in science learning. Morris et al. [2] Preschool science education provides an important opportunity to increase children's curiosity about the world while helping them acquire the tools to develop new reasoning skills.

This problem was also found from the results of the 2018 PISA score data, that Indonesia's ranking has decreased compared to 2015 with an average score of 396 on the ability of science performance in 15 years old. So, it can be said that Indonesia has not yet reached the optimization in science education at a young age.

In providing stimulation to science learning the teacher does not teach it systematically, the lack of content knowledge and appropriate learning strategies, teachers do not always provoke ideas from students before teaching [3], they also face challenges such as uncomfortable feelings and attitudes and Teachers' belief in science affects teaching behaviour, beliefs or misconceptions that science is difficult and abstract to teach which makes teachers avoid it [4]. In addition, Nayfeld et al. [5] a lack of time and science materials or a lack of confidence to use the material effectively are other factors that prevent a teacher from implementing science teaching in the classroom.

2. DISCUSSION

Indeed, early childhood has the capacity to engage and learn with scientific thinking by the National Research Council [6]. Jirout & Klahr [7] explain they are naturally curious about the world around them and Gopnik [8] children are often referred to as natural scientists because of their tendency to seek and integrate information.

However, even though children seek information as if they are a scientist, teaching and involvement in scientific reasoning and processes are needed to further develop children's thinking about science [9]. Thus, Eshach [10]

in developing children's skills, assistance is needed by the teacher, the teacher's ability to create a conducive science learning environment is related to the preparation of an efficient science learning framework by the teacher.

Gerde [11] states that teacher education is positively related to the quality of science learning in line with previous work, such as having higher education, for example a master's degree, can provide some experience with research that can support teachers when implementing science learning. In addition, early childhood education teachers with bachelor's degrees reported feeling unprepared or less prepared to teach science [12].

In addition, early childhood education teachers with bachelor's degrees reported feeling unprepared or less prepared to teach science [12]. And Edwards & Loveridge [13] describe in their research, teachers may be saddled with negative feelings about science from early school experiences that are thought to influence their teaching in science. So, it can be said that their (teacher) educational background at least contributes in terms of their skills in teaching science in class, but as their experience increases in carrying out scientific activities it can support their readiness in teaching.

2.1 Science Learning Strategies in Islamic Kindergarten

To be successful in achieving the goals of early childhood education, strategies are needed to achieve them, including the first, namely the curriculum. The curriculum is the first and important thing to pay attention to because it directs all forms of educational process activities in order to achieve educational goals. Curriculum refinement is carried out continuously according to the needs and technological advances that provide opportunities for students to gain learning experiences. Baker [14] in his research that successful science education strategies for children, namely early science instruction starting from pre-school, in the elaboration of the relevant curriculum, which discusses children's interests and provides many opportunities for investigation and play experiences, integration of reading and writing in science, paying attention to how groups are formed, activities that build independence, appropriate role models, voiced and unvoiced messages that science is for everyone, student-centred teaching. Eshach [15] there are cases that only a small proportion of activities in kindergarten and primary school are related to science, given the tremendous impact teachers have on children and on the success or failure of their curricula.

Islamic Kindergarten is an institution that presents more learning in a religious context. However, learning science for students is also considered important to be developed which in this case supports the 2013

Curriculum in training to have higher order thinking skills in early childhood. The curriculum compiled and developed by the Institute makes the Al Qur'an a reference source for science learning, as in the Islamic perspective the Al-Qur'an and Hadith are a reference source for Al Zbon & Smadi education in Agustin et al. [16]. For example, in the Al-Quran there are concepts of day and night, about plants, animals, natural phenomena and so on. By making the Al Qur'an as the main source and supplemented with other sources such as story books, encyclopaedia books, and other learning media, this science learning is meaningful for the lives of students today and in the future. Because humans are encouraged to take advantage of everything in their natural environment, both physical, mental, spiritual and material benefits and to manage them so that they can be used for their lives [16].

In practice, children's learning activities must be designed in a fun and enjoyable way to reveal children's potential, their growth and development, as well as activities that are fun for children and simultaneously learn various things, according to Nur's opinion in Agustin. et al. [16] For children, play is a necessity and they get pleasure from playing it. For example, the Qur'an tells us the concept of day and night, water as the source of life, about plants, animals, natural phenomena and so on. Al-Quran as the main source which is supported from other sources such as story books, encyclopaedias, and other learning media.

Providing understanding of science learning to early childhood can be done through play rather than direct orders. Bulunuz [17] using the concept of science through playing children will develop skills to observe, communicate, predict, plan, investigate, classify, experiment, change variables, and conclude. The results of his research show that children who are given science learning through play have a better understanding of science concepts than those who use direct commands. Agree with Howitt, Upson, & Lewis [18] that the use of play activities can support the development of scientific attitudes in early childhood and is child-centred as active learners with teachers as facilitators. And Andriyiah [19] explained that by carrying out a scientific process to determine concepts, it can be done by being trained to observe, measure, classify, predict and communicate.

Moreover, in Nayfeld et al. [5] found that the existence of tools and objects of scientific investigation alone was not enough to attract children to explore them. Based on this description, it is necessary for the teacher to create a pleasant science class atmosphere, of course by mastering the various tools or media used in science classes.

Agree with Haussler & Hoffman in Baker [14] that increasing achievement also requires changes in the way teachers teach. Student-centred, rather than teacher-centred teaching strategies have succeeded in narrowing

the achievement gap between boys and girls. These strategies include engaging real-life experiences for girls, student presentations to classmates, student participation in developing rubrics for assessing their own learning, and classroom interactions that value student perspectives.

3. CONCLUSION

Based on the description that has been presented, it can be concluded that children are little scientists who have the ability to think at high levels according to their respective capacities. Islamic Kindergarten has a special reference in its learning resources, namely the Al Qur'an and Hadith as science learning for early childhood. So, the strategies in science learning that can be done are, firstly, curriculum development. The importance of mastering teachers and institutions on the 2013 PAUD Curriculum and implementing it, as well as the preparation of the Islamic Kindergarten Institution Curriculum tailored to the needs and interests of children. This will lead to the advancement of scientific skills from an early age. Second, through playing as a real experience for children in learning the science around them and in everyday life. Third, mastery of the use of tools, media and science learning objects by teachers and students, so that the scientific activities carried out become more interesting, the learning atmosphere is fun and the material the teacher wants to convey can be accepted by students more optimally. And fourth, giving awards in science learning, will provide motivation for children to be able to participate actively and confidently in carrying out scientific activities that lead to positive things where there is also recognition given by teachers of their attitudes during the learning process.

For early childhood, science is a way to understand the world in which they live. Therefore, children will need competent and confident teachers to develop their higher order thinking skills by nurturing their curiosity during the teaching and learning process in Kindergarten.

AUTHORS' CONTRIBUTION

Both authors conceptualized, drafted, and revised the manuscript.

ACKNOWLEDGMENTS

I would like to express my sincere gratitude to my supervisors Dr. Ernawulan Syaodih, M.Pd for the guidance, comments and suggestions in this manuscript.

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