JURNAL ILMU PENDIDIKAN INDONESIA
Website:http://ejournal.uncen.ac.id/index.php/JIPI
Jurnal Terakreditasi Nasional, Keputusan, No 225/E/KPT/2022

Jurnal Ilmu Pendidikan Indonesia

Vol 13, No 1, Pages 55 – 64 February 2025
P – ISSN 2338-3402, E-ISSN 2623-226X

TEACHER DIFFICULTIES IN APPLYING SCIENCE LEARNING ENVIRONMENTAL MATERIALS BASED ON LOCAL WISDOM IN PRIMARY SCHOOLS

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Abstract: The aim of this research is to describe teachers' difficulties in implementing environmental science learning based on local wisdom at MI Nurul Huda Ketambul Palang Tuban, East Java.. The research method used is a qualitative descriptive research design. Data collection techniques are interviews, observation and documentation. The subjects of this research were 1 teachers and 21 students. Based on the research results, it shows that teachers still experience difficulties in the planning, implementation and evaluation processes. The difficulties experienced by teachers are a lack of training in making teaching modules based on local wisdom which results in teachers not understanding how to relate the material to the surrounding environment, a lack of learning time if all lessons are carried out using learning based on local wisdom because the school has to achieve learning material targets, students are too active when studying outside the classroom, and the students' sentences are less structured so it is difficult for the teacher to evaluate. So the solution to overcome this problem is to take part in training to improve the teacher's ability to carry out learning.
Keywords: teacher difficulty, science learning, local wisdom, elementary school.

1. INTRODUCTION

The current flow of globalization has resulted in the erosion of the local cultural values of the Indonesian people, so that cultural shifts and local wisdom are neglected. The existence of immigrant cultural values whose development is increasingly uncontrollable can have a major impact on the balance of people's lives, especially in the scope of education (Sarini & Selamet, 2019). Along with the development of the increasingly advanced times, local wisdom is beginning to be forgotten, especially in the world of education, so that learning based on local wisdom in elementary schools is increasingly difficult to implement.

There is a shift in cultural values in society that results in local culture and wisdom being forgotten, there needs to be an action through education so that local cultural values can still be preserved (Meilana & Aslam, 2022). Basically, education is a forum as a means of developing and shaping the nation's character, as well as creating a generation that has intellectuals. It is hoped that education can form high-quality students who have religious values, self-control, good character,

noble morals, intelligence, critical thinking, and life skills (Alfiana & Fathoni, 2022).

The efforts made in designing science learning based on local wisdom showed an increase in 11 positive characters of students, with the most significant positive characters being honest, disciplined, meticulous, diligent, careful, responsible, and caring for the environment. Creativity or imagination is one of the dimensions of science education today (Pamungkas et al., 2017). Local wisdom is the result of a certain community/ethnicity through experience or knowledge and may not have been passed by other communities/ethnicities (Turmuzi et al., 2022).

Elementary school science learning based on local wisdom can help teachers in learning science associated with culture, and phenomena in society (Safitri et al, 2023). With that, students can implement science learning outcomes to solve problems they encounter in the surrounding environment, so that learning is more meaningful for students. Learning in elementary schools based on local wisdom is not only adapted to the curriculum and the development of the times, but can be used as a means of instilling an attitude of love for the nation and culture, honing thinking skills, and providing students with an understanding of local culture in the surrounding environment (Kholidah et al., 2023). In addition, the form of learning based on local wisdom is very appropriate to be integrated into every learning in elementary school, because at the age of elementary school children it is still in the concrete operational stage, where learning begins with the experience and life of students (Aza Nuralita, 2020).

Subjects that are suitable for the use of learning based on local wisdom are Science (Natural Sciences) which is a science that studies natural phenomena and phenomena that include living and non-living things. Wahyu's research (2017) also conveyed that learning in elementary schools is good for applying a learning model based on local wisdom, namely themes in the science and mathematics learning model in high grades. Science learning provides a lot of hands-on experience with various activities that can help students explore and understand the surrounding environment.

The results of the research by Puspasari et al. (2019) said that science education based on local wisdom in its application is tried by integrating educational modules with local culture and wisdom in areas near students. By implementing science education based on local wisdom, we want to share benefits to students, because they can practice critical thinking and analysis, find out, and dismantle a case. Not only that, it can be used to help overcome students' difficulties in mastering science education that is abstract by sharing a learning experience where the environment for students matches the real world.

In contrast to the reality in the field, in fact there are still gaps in the educational process. As with the learning system that teachers are trying is still the same, less interesting and creative, so that students are less interested and feel bored to explore education. The education tried by teachers requires students to read, memorize, and remember modules. Education seems to be just a process of providing teacher knowledge to students and is less meaningful. So local wisdom education in schools that teachers are trying is still not well planned. This is supported by the results of research by Aza Nuralita (2020) who reported that teachers in elementary schools have unconsciously practiced science education based on local wisdom and have been running well, as evidenced by teachers being able to ensure local wisdom.

One of the elementary schools that has practiced science education based on local wisdom is MI Nurul Huda Ketambul Palang in Tuban. This school is one of the elementary schools that is environmentally friendly. Sourced from the findings found in the field, the implementation of science education based on local wisdom has been tried since 2019 after being trusted by the adiwiyata school of Tuban Regency. A form of education by carrying out various activities, such as making tempeh, and observing nearby areas . The results of the interview explained that teachers have actually applied education based on local wisdom, but they are still trying unconsciously. Not only that, the teacher said that there are still various difficulties experienced when practicing science education based on local wisdom. Teachers have not fully mastered how to implement education based on appropriate local wisdom.

Based on the above explanation, further and in-depth research was carried out on the Difficulties of Teachers in Implementing Science Learning Based on Local Wisdom at MI Nurul Huda Ketambul. In addition, this study also continues research from Puspasari et al. (2019) entitled "Implementation of Local Wisdom in Science Learning at SD Alam Surya Mentari Surakarta" where in the study teachers were actually able to explore students' initial conceptions by providing contextual learning. Unconsciously, teachers have also applied local wisdom learning in each subject, because it is indeed an environmentally friendly school. However, in planning science lessons based on local wisdom, teachers still do not plan well.

This research has a comparison with the previous research that researchers not only focus on the implementation of science education based on local wisdom, but also carry out research that affects the difficulties of teachers in practicing science education based on local wisdom. The purpose of this research is to describe the difficulties of teachers in practicing science education based on local wisdom at MI Nurul Huda Ketambul Palang Tuban.

2. RESEARCH METHODS

The design of this study uses a qualitative descriptive type of research. Qualitative research is the collection of natural data to interpret a phenomenon with the position of the researcher as a key instrument. This means that researchers collect data themselves by interviews, observations, and documentation. Meanwhile, descriptive research is used to describe a fact of a phenomenon that occurs actually and recently (Nurmalasari & Erdiantoro, 2020). Therefore, this qualitative descriptive research aims to describe and give an overview of the data that has been obtained from the researcher's observations.

The subject of this study is MI Nurul Huda ketambul which is located on Jalan Krajan KM 2.5, Ketambul, Palang, Tuban in the odd semester of the 2023/2024 school year. As for the object of research, it is science learning based on local wisdom. The resource persons taken in this study consisted of upper-class teachers, lower-class teachers totaling 9 teachers and 153 students. The sampling technique uses purposive sampling where the sample is 1 teacher and 21 students who are considered the most suitable researchers and can represent a population. Data collection techniques use interviews, observations, and documentation. The researcher used interviews, observations and documentation because to find out the obstacles of teachers and students in conducting learning based on local wisdom so that the data obtained was clear. Data validity uses source and technique triangulation. For data analysis techniques, namely data collection, data reduction, data presentation, and conclusion drawing (Purnamasari & Afriansyah, 2021). This research was conducted by conducting interviews first and then conducting observations and documentation. This survey research was conducted for 7 days.

3. RESULTS AND DISCUSSION

Based on the results of interviews with teachers, it was stated that MI Nurul Huda Ketambul Palang Tuban School has implemented learning based on local wisdom which began in 2019 until now. Almost all subjects are carried out with learning based on local wisdom, especially in science (Natural Sciences) subjects. Agree with the research of Wahyu (2017) which shows that local wisdom will be more effective to be integrated into the main material, because the integration of local wisdom will be able to explore procedural knowledge that refers to constructivism.

Teachers have tried to associate each lesson module with culture, local wisdom, and the

area near the students. This environmentally friendly school is supported by the availability of rice fields, ponds, rivers, and reservoirs that can be used for observation and direct models, and can be used for experiments. Teachers share the freedom of students to be able to hone their skills in observing and thinking critically about the phenomena that exist around them. Basically, teachers are only facilitators and motivators, so that students can try to dismantle problems in each educational activity (W, 2022). In addition, teachers also instill in students that nature is an infinite laboratory. This will greatly help teachers in implementing science learning based on local wisdom so that it can make learning more in-depth and meaningful. Basically, learning about natural sciences is not enough just with theory, but it also requires a direct practicum in the field to be able to, try, test, and prove theories (Nugroho et al., 2022).

Based on the results of observations in the field, it was found that the school also provides students with facilities and infrastructure that can support science learning based on local wisdom. Infrastructure facilities are in the form of cool and comfortable learning rooms for indoor and outdoor, beautiful gardens and gazebos, gardens. The school also makes a program for each class to take care of plants in front of the classroom and in the garden so that students have a role to participate in protecting the school environment. In addition, the school also has a learning program outside the school, namely learning directly in rice fields, in reservoirs and in ponds. That way students will find it easier to learn by learning local wisdom, because they are used to observing the surrounding environment and existing phenomena.

In conducting science learning based on local wisdom, teachers also conduct learning from 3 aspects, namely planning, implementation, and evaluation (Fatmawati et al., 2021). In carrying out learning at these three stages, it turns out that teachers also experience various difficulties. From the results of the interview, the teacher stated that there are various difficulties for teachers in implementing science education based on local wisdom starting from the planning, implementation, and evaluation stages. Teachers' difficulties are shown in the following table 1:

Table 1. Teachers' Difficulties in Learning Based on Local Wisdom

It	Phase	Difficulty
1	Planning Stage	1. has not been well integrated between the material and the local culture 2. lack of training in making teaching modules based on local wisdom
2	Implementation Stage	1. There is a limitation of teaching and learning time
3	Evaluation Stage	1. Answers written by lower grade students are sometimes less readable and understood by teachers because the sentence preparation is still not well structured

Planning Stage

Teaching modules are educational features or educational designs based on the curriculum that are implemented with the aim of achieving the competency standards that have been inaugurated (Maulinda, 2022). The teaching module has a main position to support teachers in designing education. In the arrangement of functional educational features, it means that teachers are teachers, teachers are honed in thinking skills to be able to innovate in teaching materials (Nesri & Kristanto, 2020). Therefore, compiling a teaching module is a teacher's pedagogic competency that needs to be raised, in this regard so that the teacher's learning method in the classroom is more effective, and does not come out of reviews from achievement markers.

Based on interviews, teachers have created teaching modules based on local wisdom. The teaching modules at MI Nurul Huda Ketambul are almost the same as in the Independent Curriculum, but there are slight differences because there is a natural and cultural content. Judging from the observation of the teaching modules that have been made, it is true that learning activities starting from the beginning to the end are mostly carried out outside the classroom by asking students to observe and try.

The difficulties experienced by teachers based on the results of the interview, namely the implementation of science learning based on local wisdom which is carried out unconsciously, makes the selection of materials and the preparation of teaching textbooks for the implementation of learning based on local wisdom still not well integrated between the material and local culture. In addition, teachers also said that there is still a lack of training in making teaching modules based

on local wisdom. Teachers are also more focused on themes and discussions.

Implementation Stage

The initial activity stage of the implementation of science learning based on local wisdom begins with saying a prayer together, then the teacher gives an acceptance to the students before heading to the core of learning. The reception given by teachers differs between the upper and lower classes. Providing an apoptee for the lower class by inviting students to play games and sing. In addition to students feeling happy, they can also reduce the energy that will make them focus on core learning. The provision of physical activities in addition to introducing games and singing is also to reduce students' dependence on gadgets, because MI Nurul Huda Ketambul students tend to be in the active-active category.

As for the upper-class reception, it is by asking questions and asking students to make observations in the surrounding environment. For example, by giving examples of wasted water, doing unnecessary activities by watering plants during the rainy season, children observe each activity and reason. After giving an application, the teacher provides information about the theme to be taught to the students. Teachers also do numeracy literacy as part of the reception for students by observing the school environment around them. Then the teacher tries to relate the material that has been taught with the material to be learned, the goal is so that students can still remember previous lessons and not quickly forget.

This stage of core activities contains science learning syntax based on local wisdom consisting of stimulation, problem orientation, integration of local wisdom, problem solving, and communication (Lidyawati, 2020). The application of syntax at MI Nurul Huda Ketambul is that students are given stimuli by observing the environment and given questions by the teacher. Problem orientation by looking at the news that is being talked about on global issues. Then the results of the problem are integrated with the surrounding environment and problem solving is carried out by students. For communication activities, students are asked for group discussions and presentations.

Based on the results of the interview, the teacher said that the core activities of students were very active and enthusiastic about exploring education because the majority were tried outside the classroom. However, there are some students who do not like or are not interested if they are required to study outside the classroom. Not only that, it is necessary to have special supervision of students so that education is always suitable for the purpose and not in vain, because of course

there are some students who use education by playing and do not pay attention to education.

The learning activity was closed by asking students to conclude the material regarding the learning that had been carried out. Teachers also provide students with worksheets in the form of worksheets or worksheets containing observations, projects/activities, and questions. In addition, the teacher also gave reflection by giving several questions to students about the learning that had been carried out. Teachers also carry out follow-up activities, namely by enriching when students succeed in achieving learning objectives or remidi when students have not succeeded in achieving learning objectives. The end of the activity was closed with a joint prayer according to the religion and beliefs of the students.

This implementation stage also has various obstacles that teachers go through, namely the limitation of teaching and learning time. This is in agreement with the results of Winarni's (2017) research which shows that teachers' difficulties in learning science are still rigid, because they follow book references. In addition, there are also time limitations and teachers' abilities must continue to be increased in accordance with learning goals. Because basically, if all lessons are carried out with learning based on local wisdom and carried out thematically, it will take a lot of time. In addition, schools must also pursue the achievement of material targets. Learning based on local wisdom will be more free and learning time will also be sufficient by optimizing each learning process from students.

Evaluation Stage

The evaluation activities carried out in science learning based on local wisdom are the same as other learning. The forms of evaluation are cognitive, affective, and psychomotor. The evaluation is carried out when all learning has been completed. Cognitive evaluation by providing reasoning questions, not multiple choice. Affective or attitude evaluation, namely teachers make observations on students when carrying out learning activities starting from beginning to end. Psychomotor evaluation by asking students to create accountability reports and portfolios to measure the extent of students' abilities.

The difficulty experienced by teachers during this evaluation is that the answers written by lower grade students are sometimes not readable and understood by teachers because the sentence preparation is still not well structured.

4. CONCLUSIONS AND SUGGESTIONS

CONCLUSIONS

Based on the results of research on the application of science learning based on local wisdom at MI Nurul Huda, it was concluded that teachers still have difficulties in the process of planning, implementing, and evaluating. The difficulties experienced by teachers are the lack of training in making teaching modules based on local wisdom, the lack of learning time based on local wisdom, students are too active when learning outside the classroom, and the preparation of sentences from students is poorly structured so that it is difficult for teachers to evaluate.

SUGGESTION

Teachers' difficulties in learning science based on local wisdom in elementary schools should be controlled by a teacher to direct it.

5. ACKNOWLEDGMENTS

Thank you to the Head of Madrasah MI Nurul Huda Ketambul and the teacher council for their cooperation in this research.

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