

Analysis of Teacher Readiness in Implementing Learning Based on Local Maritime Potential

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Abstract. Learning is an important part of education. The quality of learning largely determines achievement of educational goals. Learning needs to be integrated with the environment to prepare students according to the needs of the times. The expected impact is that students will be aware of the environment, have a sense of ownership, and keep it sustainable. This research was carried out to determine teacher readiness in implementing learning based on local maritime potential. The type of research is descriptive qualitative with the subject being elementary school teachers at State 013 Tanjungpinang City. Data sources were obtained through interviews, observation and collection of learning documents. Based on the data obtained, teachers are ready to integrate learning based on local maritime potential. This can be seen from the learning activities carried out as well as the documentation of the devices available. Then, teachers routinely carry out learning using technology to increase interest and motivation. Teachers also encounter obstacles and challenges regarding insight that needs to be improved regarding local potential because teachers are not native residents and their abilities. Several recommendations are also given to overcome the problems that emerged in this research.

1 Introduction

Each individual needs to recognize the environment well. Because the environment has a huge impact on individual development. An individual's success in adapting to the environment greatly determines the future success they wish to achieve. Teacher creativity is needed to integrate the environment into learning. Proponents of creative teaching argue that it produces deeper understanding among students [1]. This is an effort to shape the learning experience experienced by students. Teaching on the beach as an aspect of the routine and integrated curriculum throughout the year has succeeded in increasing student engagement and other academic and social skills [2]. Environmental literacy is an individual's ability to understand and interpret environmental conditions; from the results of this understanding and interpretation, the individual can decide on action. in maintaining, restoring, and improving environmental conditions [3]. The environment can be used as a

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learning resource because, basically, education prepares students to be able to solve problems that arise around them.

Kepulauan Riau, as one of the provinces in Indonesia with a land area smaller than the sea, gives it its own color. There is a lot of maritime potential that needs to be maintained so that it remains sustainable, both from an economic, ecosystem, and cultural perspective. The maritime axis is a strategic idea that was realized to ensure inter-island connectivity, develop the shipping and fisheries industry, improve maritime transportation and focus on maritime security [4]. In order to increase students' awareness of this potential, education based on local maritime potential is very important. Teachers, as agents of change in the world of education, have a key role in implementing learning models that integrate local maritime potential. Therefore, it is important to analyze teachers' readiness to implement learning based on local maritime potential, especially in coastal areas which have direct access to marine resources. There is a clear relationship between teachers' teaching capacity and students' academic performance, indicating that 'what teachers do', matters in schools [5]. Integration between the environment and learning is very important to align education with sustainable development goals and develop maritime professionals who are committed to environmental management [6].

The purpose of this research is 1) to analyze teacher readiness in implementing learning based on local maritime potential; 2) to identify factors that influence teacher readiness in implementing learning based on local maritime potential; and 3) to present practical solutions to increase teacher readiness in implementing learning based on local maritime potential.

Local potential-based learning is an approach that uses local resources—be it culture, environment, or regional economy as teaching materials. In a maritime context, this involves teaching related to coastal life and marine ecosystems, as well as related industries such as fisheries, marine tourism, and shipping. Local potential-based learning is a method or way of learning, or perhaps training, characterized by real experience and real-world experience as a context for students to learn critical thinking and skills as well as solve problems and gain knowledge [7]. The contextual approach has several teaching strategies, which include content as an important component. The strategy engages students in an active learning process [8]. Integrating modern environments and technologies into teaching and learning to facilitate learning poses challenges for educational institutions [9]. Maritime-based learning is very important because it not only enriches students' knowledge about the sea but also prepares them to face global challenges related to maritime affairs, introduces career opportunities in the maritime sector, and fosters a sense of responsibility for preserving the marine environment. Education, training, and human resource development are very important for the sustainability of all industrial matters. This also applies to the maritime industry, where the majority of maritime accidents are caused by human error [10]. With good maritime education, Indonesia can produce a young generation who is better prepared and aware of the great potential of its maritime and coastal areas.

Teacher readiness in learning based on local maritime potential is influenced by several factors, including an understanding of the material, pedagogical competence, and availability of infrastructure. Teacher readiness in designing learning is very important because designing effective learning can maximize student potential and create meaningful learning experiences. Lesson plan helps a teacher to utilize time, resources, materials and techniques at an optimum level [11] With careful planning, teachers can adapt learning materials, methods and media to student needs, and ensure learning goals are achieved. This readiness also helps teachers to anticipate various challenges in the classroom, such as differences in student abilities, time constraints, or technical obstacles. In addition, good planning allows teachers to create a structured, interesting, and interactive learning atmosphere so that students are more motivated and actively involved in the learning process.

Pedagogical competence is also very important in this context. Teachers need to have the ability to design curriculum and learning methods that suit student characteristics and existing local potential. Pedagogical skills are very useful for teachers when implementing learning. This helps teachers deliver material effectively and interestingly, adapt teaching methods to student needs, and create a learning environment that supports students' academic and social development. With these skills, teachers can more easily understand and manage classroom dynamics and ensure more effective and meaningful learning for students.

The main supporting factor in implementing local potential-based learning is support from related parties such as local government, maritime agencies, and related industrial sectors. Local potential-based learning has great potential to increase student engagement and the relevance of the material taught. However, several supporting and inhibiting factors need to be considered. Supporting factors include 1) Availability of Natural Resources. The existence of a rich natural environment, such as a park, forest, beach, or school garden, can be a key resource for environment-based learning. Students can directly engage in experiments or field activities; 2) Curriculum Support. A flexible curriculum that supports the integration of environment-based learning makes it easier for teachers to design and implement activities that are relevant to the local context and surrounding environmental problems; 3) Community and Stakeholder Participation. Collaboration with parties outside the school, such as the government, NGOs, local communities, or the private sector, can support environment-based learning through the programs or facilities provided; 4) Teacher Ability. Teachers who have knowledge, skills, and understanding of the importance of environmental education will find it easier to design and implement environmentally based learning effectively; and 5) Technology and Learning Media. The use of technology to support the exploration of environmental issues, such as air quality monitoring applications, the use of nature documentation videos, or digital learning platforms, can enrich students' learning experiences.

Apart from that, learning based on local potential also has inhibiting factors, including 1) Limited Facilities and Resources. Not all schools have access to adequate environmental facilities or are close to natural resources that can be utilized for direct learning activities; 2) Lack of time. Environmentally-based learning often takes longer, especially if it involves field activities or experiments. Lack of time in the curriculum can be a barrier; 3) Limited Teacher Knowledge. Teachers who do not have a sufficient understanding of environmental education or are not trained in environmental-based learning methods can find it difficult to design and implement effective learning; 4) Unsupportive Environmental Factors. In some conditions, bad natural conditions, such as extreme weather, pollution, or environmental damage, can hinder the implementation of outdoor activities that are part of environmental-based learning; 5) Lack of support from parents and community. If parents or the community do not have sufficient understanding or do not support environment-based learning initiatives, this could be an obstacle in its implementation; 6) Costs required. Some environmentally based learning activities, such as field trips or procuring experimental materials, require an additional budget that is often not available.

2 Methods

This research uses a qualitative approach with a case study method. Data was obtained through interviews, observation, and collection documents used by teachers in teaching. The research location is the SDN 013 Bukit Bestari which is located in the coastal area of Dompok Village, Tanjungpinang City. The teacher who was the focus of the interview was a representative of each phase as well as a teacher in the field of sports studies. Then, the observations were made of learning activities that occurred in the classroom. Apart from that,

documents related to learning policies in schools and teacher capacity-building activities, such as training activities that teachers have participated in, are also analyzed to get a more complete picture of teacher readiness. Then, the data that has been obtained will be analyzed, and recommendations will be given in accordance with the research objectives that have been formulated.

3 Results and Discussions

The results and discussions that need to be stated in this research are:

3.1 Understanding maritime material

Based on interviews conducted, the teachers revealed that they had carried out learning activities that integrated learning material with the surrounding environment. However, they realized that their understanding of local maritime potential was not optimal. This is because they are not native residents and their educational background is only a class teacher. However, this does not limit them from being creative in learning. They regularly discuss with senior teachers who are native residents to learn about local potential and even ask to be accompanied in implementing learning as a work team. This shows that the school learning community has been running well and a learning culture among teachers has been formed. Even so, the teachers certainly really hope that there will be training held by the school so that their understanding of local maritime potential can continue to be improved due to the school's location in a coastal area.

3.2 Pedagogical competence

Teachers at these schools are generally professionally certified, so it can be concluded that their pedagogical understanding is good. However, when asked to dig deeper to integrate learning material with local maritime potential, teachers still encounter obstacles so they need guidance regarding adapting the national curriculum to local maritime potential. School principals have also collaborated with other schools that have similar learning environments to jointly formulate the school curriculum, but fellow teachers' inadequate insight is still an obstacle. Efforts for independent learning through various references have also been made, such as learning via YouTube, independent learning platforms and other sources that can be used as learning resources. It is very important that pedagogical competencies are well understood by graduates who come from teaching. Remembering that this was obtained when they studied at university. Good pedagogical skills will have an impact on the quality of learning produced. Currently, being a teacher is not just for teaching graduates, but can also be filled by non-teachers with conditions according to their knowledge.

3.3 Learning Facilities and Infrastructure

This school is still in the same environment as TK and SMP 013 Bukit Bestari or better known as the one-roof school. These limitations sometimes limit students' space for movement when carrying out environment-based learning at school. However, the school has fairly good access to local maritime potential such as ports, beaches and seafood restaurants considering that the distance is so close that it is possible to reach it on foot. Students are very interested when applying the learning carried out at the port. This port is not a passenger port, but rather a place to send household goods which will be sent to other islands in the Riau archipelago. Students are very enthusiastic about taking part in the learning carried out in this environment because they can ride on ships that are docked, thereby increasing their knowledge of local maritime potential.

3.4 Government and stakeholder support

The government, through the Department of Education, has attempted to provide support in using the environment as a learning location for students. This is proven by the existence of a policy of compiling educational unit curricula according to each school environment. Teacher representatives have received training regarding the preparation of educational unit curricula as an important aspect of learning. The school already has an educational unit curriculum, but the integration carried out is still general and needs to be improved. Then it is necessary to form a learning community between schools in coastal areas so that it can provide suggestions for strengthening material and important aspects that are discussed in local maritime potential material.

Based on the problems above, the solutions based on the problems above include:

- a. **Teacher training:** Increasing ongoing training for teachers so that they are better prepared to teach material related to maritime potential. Training is very useful in increasing teachers' understanding of preparing interesting learning for students. Currently, teachers are required to be creative in producing fun and meaningful learning for students. This is deemed necessary so that the learning carried out is not in vain. Teachers often fail to find out what the purpose of their actions is and what methods of teaching elementary school students are correct [12]. Teachers can no longer apply learning as they experienced in the past, considering that the era they are going through is different from the era they are going through now and that students will face in the future [13]. In this context, the training that can be given to teachers is training that includes knowledge about marine ecosystems and the maritime industry, as well as pedagogical skills in learning based on local potential. Considering that teachers are generally immigrants, it is necessary to provide maritime-related training before preparing lessons for their students. Maritime understanding is important for teachers because it can enrich insight and teaching materials that are relevant to the geographical and economic conditions of Indonesia as an archipelagic country. By understanding maritime affairs, teachers can teach students about the importance of the maritime sector, shipping and marine resources in national development. This also opens up opportunities to increase students' awareness of the importance of protecting the marine environment, as well as providing skills relevant to the development of the maritime industry. In addition, this understanding supports education that is based on local context and can increase students' interest in fields related to maritime affairs.
- b. **Curriculum integration.** Developing a curriculum that is more flexible allows integration of local maritime potential with other subjects. In various domains of human learning, curriculum quality has been shown to be crucial in achieving success [14]. Integrating the curriculum with the students' environment is very important because it can make learning more relevant and contextual. When the material taught is adapted to students' local conditions and needs, they tend to more easily understand and apply this knowledge in everyday life. It can also increase students' motivation and interest, as they see a direct connection between their learning and the real world. Additionally, this integration helps develop skills appropriate to local challenges, strengthens a sense of cultural identity, and prepares students to become active members of society. The experiences they gain by doing activities and being on board with real users (i.e. crew members) encourage them to reflect on what they have experienced [14]. The implementation of an independent curriculum provides space for teachers to integrate learning with the environment where students live. This is deemed necessary considering that the role of teachers

is to transfer knowledge to equip graduates to be able to compete in their time and be able to solve the problems they face, especially those closest to them. Currently, Indonesia uses an independent curriculum nationally. Schools are given space to develop a curriculum in accordance with the school's potential, which is called the educational unit curriculum. Referring to this, teachers should not only be able to see weaknesses but are expected to be able to see strengths they have or potential that might be developed in an effort to produce meaningful learning for students. The teacher's ability to explore this potential greatly determines the learning obtained by students. Teachers also need to carry out learning around the sea at school so that students can understand the marine ecosystem well. This will involve students learning actively and involving their senses [15].

- c. Infrastructure improvements. Strengthen infrastructure that supports maritime-based learning, including the provision of teaching materials, teaching aids, and access to relevant field objects. The infrastructure really supports a quality learning process for students. Good infrastructure is very important in learning because it supports the smooth running of the educational process. Facilities such as comfortable classrooms, internet access, multimedia equipment, and adequate teaching materials can improve the quality of teaching and make it easier for students to understand the material. Adequate infrastructure also creates a conducive environment for learning, accelerates access to information, and encourages the use of technology that can enrich students' learning experiences. Schools must be able to facilitate infrastructure to support interesting learning for students. Adequate facilities and infrastructure are very important in supporting learning because they provide the facilities necessary for an effective and efficient learning process. With the right facilities and infrastructure, the learning process can run more smoothly and effectively, support the optimal development of student potential, and create a more interesting and varied learning experience.
- d. Collaboration with stakeholders. Collaboration is a complex intervention with multiple components [16]. Increase collaboration between schools, local governments, and the maritime sector, such as the fishing industry and marine tourism, to provide resources and opportunities for field practice. Collaboration is very important to create an educational ecosystem that supports holistic student development [17]. With collaboration, schools can obtain resource support, both material and non-material, which can improve the quality of learning. In addition, this collaboration allows for synergy in designing policies, programs, and activities that are relevant to student needs. Involving stakeholders also strengthens the sense of shared responsibility in advancing education and ensuring the sustainability of efforts to improve the quality of education in schools.

4 Conclusion

Learning based on local maritime potential in Indonesia has great potential to increase students' understanding of their environment and provide direct experience related to maritime affairs. Besides that, it can connect education with social, economic and cultural contexts that are relevant to the student's environment. Indonesia, as an archipelagic country, has enormous marine resources, and understanding maritime potential can increase students' awareness of the importance of preserving the marine environment, sustainable management of natural resources, and career opportunities in the marine sector. By integrating local maritime potential into the curriculum, students not only gain knowledge about marine

ecosystems and the maritime industry but can also develop practical skills that are useful for their future, both in the fields of shipping, fisheries, tourism, and environmental conservation. This learning also supports the empowerment of local communities and increases global competitiveness through the use of natural resources around them. Overall, learning based on local maritime potential strengthens the link between education and community needs and supports the development of human resources who are ready to face global challenges while considering local wisdom and sustainability. Teachers' readiness to carry out this learning is greatly influenced by an understanding of the material, pedagogical competence, available facilities, and infrastructure, as well as support from the government and related stakeholders. For this reason, continuous training, integration of relevant curricula, and close collaboration with the maritime sector and local communities are very necessary to increase teacher readiness in implementing learning based on local maritime potential.

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