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Internalization of Ocean Literacy Value through Language Learning

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Abstract: The Ocean contributes significantly to human life. It is not a separation but rather a national integration factor of a country. Nowadays, saving the ocean is being a global issue. Thus, the care and awareness to save the ocean are very important to be internalized to the public. This qualitative research aims to describe how to internalize ocean literacy to students through language learning in the classroom. This research showed that the seven principles of ocean literacy could be integrated into language learning. Competencies such as creating posters and understanding the meaning of literature could include the ocean and preserving it. The message conveyed in a text could be strengthened by the insight of the ocean so that students become literate. This study implied that the students would realize the urgency of preserving the ocean and have comprehensive knowledge about ocean literacy through language learning. Therefore, this research is expected to contribute to ocean health and decrease much garbage in the ocean.

Keywords: internalization, ocean literacy, language learning.

通过语言学习实现海洋素养价值的内化

摘要: 海洋对人类生命有重大贡献。它不是分离，而是一个国家的民族融合因素。如今，拯救海洋是一个全球性问题。因此，拯救海洋的关怀和意识对于公众内化非常重要。这项定性研究的目的是描述如何通过课堂语言学习将海洋素养内化给学生。这项研究的结果表明，海洋素养的七项原则可以整合到语言学习中。诸如制作海报和理解文学作品的意义等能力可能包括有关海洋以及如何保护海洋的所有信息。文本中传达的信息可以通过对海洋的洞察力得到加强，从而使学生识字。这项研究的意义在于，学生将意识到保护海洋的紧迫性，并通过语言学习全面了解海洋素养。因此，这项研究有望有助于改善海洋健康，并可以减少海洋中的大量垃圾。

关键词： 内化，海洋素养，语言学习。

1. Introduction

Indonesia is the largest archipelagic country globally that consists of 17,499 islands (16,056 of the islands have been verified by the United Nations on 18 August 2017). The Indonesian archipelago is the

divider between the Pacific and the Indian Ocean. Two-thirds of Indonesia's territory is the ocean, up to 5.8 million km², with a coastline of 80,791 km [24]. The development of national maritime, which is being increased in Indonesia, must be supported by an

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education system that educates citizens. To succeed in maritime development, students must be educated systematically to have good ocean literacy [15]. The sea has many benefits for our lives, including marine transportation and trade, tourism places, fish culture, fisherman, and beachgoers [20]. It makes us need to socialize the existence of the ocean, which could be done continuously through the Ocean Decade Heritage Network.

The ocean is the main physical characteristic that defines our planet, making the earth habitable. It covers over 70% of the earth's surface, produces more than 50% of the oxygen in the atmosphere, regulates weather and climate, supports a great diversity of life, and provides food for people all over the planet. The most dominant feature on earth is the ocean. After China, Indonesia has been the second most significant plastic waste contributor in the sea. It is contrary to Indonesia's effort to become a leading country in the maritime sector [23]. This condition demands us to know and understand the ocean potential. Improving public awareness about the ocean can benefit the environment, economy, and society. However, low levels of ocean literacy have been identified in many countries and can be a barrier for citizens to engage in environmentally responsible behavior or consider ocean-related careers [14].

However, the ocean function and the human-ocean relationship have, up to now, been poorly understood. Many years ago, the sea was for society in a remote area, used by a few as a food source and as a means of travel. Nowadays, the last centuries have seen a dramatic increase in its role for oil and gas exploration, wind farms, aquaculture, tourism, and much-increased transport of goods [2]. Consequently, ocean health is seriously threatened [10]. One of many ways to improve people's awareness of the ocean is implementing ocean literacy in the classroom. The public has low-level knowledge about the ocean, so that they should access more information effectively. It is shown in the research about public ocean literacy in the United States [26].

The Ocean Literacy movement began in the U.S. in the early 2000s and has recently become an international effort [8]. Ocean literacy knowledge in American is really low, particularly among adults. Socializing ocean literacy awareness and knowledge is essential to reduce human impacts on the marine environment. There is a lack of comprehensive ocean content coverage in secondary classrooms across the United States. Also, a lack of published research regarding marine education becomes a piece of evidence that marine education is not well implemented into K-12 classrooms [21].

Between 2002 and 2010, scientists and educators founded a term called ocean [25]. Increasing people's

ocean literacy aims to create societies that understand the interconnected relationship with the ocean and improve their skills to make decisions about the sea. Internalization of ocean literacy to the public in all countries, cultures, and economic backgrounds is essential to inform sustainable life in the future [11]. People, society, and organizations must have the capacity to protect, promote, and research underwater and maritime archaeology [19].

All those cases above interested the researchers in researching the internalization of ocean literacy in the classroom, especially in language learning in Indonesia, because Indonesia is one of the maritime countries that are important to save ocean health. This research is also supported by Fauville that stated there are still limited numbers of research publications about ocean literacy in education [9].

2. Method

The method used in this research was qualitative research. Qualitative research methodology is considered suitable when the researcher or the investigator investigates a new field of study or intends to ascertain and theorize prominent issues [16]. Qualitative research focuses on exploring and understanding the meaning of an individual or group ascribed to the social or human problem [5]. Qualitative research is done in five areas: case study, ethnography, phenomenological study, grounded theory study, and content analysis [22]. The qualitative method uses a natural setting that makes the researcher level of detail from high involvement in authentic experience. Qualitative is narrative description research of complex phenomena [13]. This research was carried out in Indonesia. Researchers focused on how to solve some problems regarding people's awareness about saving the ocean through education, particularly in language learning. The researchers found several ways to solve the problems through doing observation to some Indonesian language books, reading articles, and doing interviews with some language teachers in Indonesia.

3. Discussion

3.1. Ocean Literacy in Education

The research indicated that there are seven essential principles of ocean sciences: (1) the earth has one big ocean with many features, (2) ocean and life in the ocean shape the features of the earth, (3) the ocean is a major influence on weather and climate, (4) the ocean makes earth habitable, (5) the ocean supports a great diversity of life and ecosystem, (6) ocean and human are inextricably interconnected, and (7) the ocean is largely unexplored.

Ocean literacy was promoted in 2002 by the grassroots movement concerned scientists and educators

in both formal and non-formal contexts [8]. One way to develop students' scientific literacy in the future could be done by connecting the content of the science news stories with discipline-specific literacy principles [4].

One way to internalize ocean literacy values to students is through language learning in the school, which could be a way to increase student understanding about literacy, specifically ocean literacy. Nevertheless, the commitment of teachers is needed to consider the successful integration of ocean literacy in the school. The teacher also must have good knowledge about the sea [1]. Marine education, focusing on marine and coastal environments, has its root in the environmental movement of the 1960s and 1970s. Since then, educators, environmentalists, scientists, and the Federal Government have recognized the importance of educating people about the ocean [21].

In order to actualize the ocean- and aquatic-literate people, ocean and aquatic sciences have to be integrated into educational practice, research, standards, curricula, textbooks, and assessment [25]. Santoso [24] states that the 2013 curriculum in Indonesia, in the education aspect, requires educators to apply a scientific approach to their learning. Language is one of the subjects still considered necessary for all students. It will be more complex when a scientific approach teaches it. Language learning is one of many important subjects in preparing students to know about anything globally. This scheme shows the ocean literacy development framework [25].

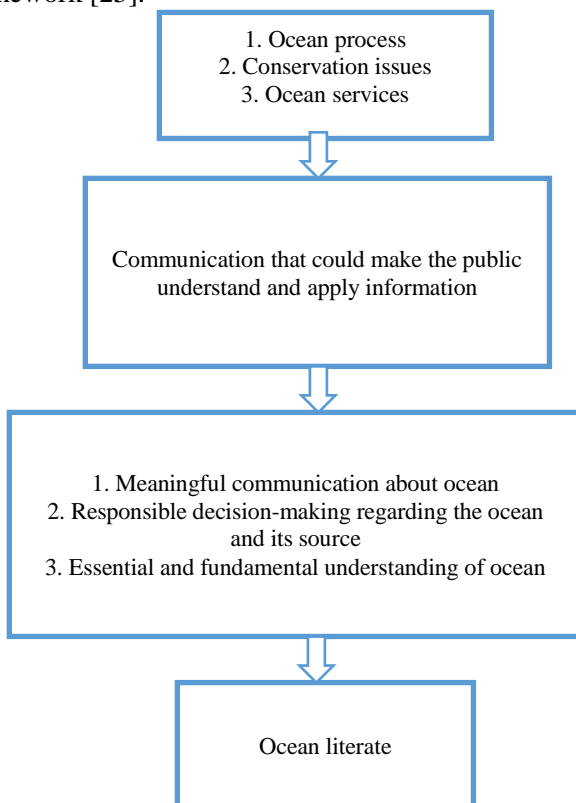


Fig. 1 The ocean literacy development framework

3.2. The Strategy of Integrating Ocean Literacy in Language Learning

Ocean literacy could be easily adapted using the national curriculum subject in the classroom. One of many ways that a language teacher can internalize ocean literacy's value to students is by integrating it into language learning material, such as competency to understand posters, news, and poetry. It can be seen in the following data.



Fig. 2 Examples of learning materials

The posters above are certainly the medium for public awareness, especially for students to love and save the sea. Not only to teach language have material, but they also contained values leading students to consciously have the character to save the sea since it is the source of human life. Ocean has many problems, one of those is floating plastic in the sea [30]. Plastic can be a major water quality problem, and it sometimes could be eaten by many organisms in the sea, including fish [12]. The contamination of plastic in the marine environment was first known nearly 50 years ago, no more than two decades after the rise of commercial plastics, in the time when less than 50 million metric tons were produced per year. Then, in 2014, global plastics production surpassed 300 million metric tons per year [18].

An instructor could employ teaching media such as PowerPoint slides, images, videos, or another tool that contains deep meaning about ecology [17]. The materials that can be employed from the linguistic aspect are like asking students to understand the poster's contents, finding a message from the poster, or discovering the facts and opinions of the poster. Students can also be asked to write a story about the information provided on the poster. In this context, teachers teach language skills and introduce knowledge about ocean literacy. In addition, a poster can also be used in marine tourism places as a form of preserving the sea or providing information about some tours.

Furthermore, news text is also believed to improve students' awareness about the importance of saving the sea and improving their knowledge. Teachers can choose the news about saving the ocean, which is urgent for us—keeping the ocean is as important as preserving the rainforest. The suggestion for not throwing garbage into the ocean is a very important value that the news can deliver. The sea must be kept by any person or all people in the world. Furthermore, ocean literacy can also be socialized through teaching literature in the classroom. Poetry is a great medium to internalize the value of caring for the sea. To that end, teachers can choose marine-themed poems. It can form students' character to appreciate and love the sea more. Look at the following poem:

*The beach is increasingly voicing anger.
Sending marine waste
Coral reefs are in increasing pain
Marine organisms are dead to extinction.
Boisterous methane and ethylene gas heat up
Strangling the disappearance of phytoplankton
The fishermen greeted the tangled face
Turn home, give your bare hands
The impact of indifferent people
Although conservation of ecosystems advanced
against
Let it be difficult to keep each other from the
catastrophe.*

The poetry above tells us about the ocean's condition. The ocean must be guarded and preserved. Students can be assigned a marine-themed poem, considering that literature can foster a positive attitude. Besides poetry, the internalization of the value of ocean literacy can also be done by using short stories or folklore. Considering that it is an excellent medium for educating students in formal and non-formal situations [3].

Likewise, the following poetry also contains the values of ocean literacy that could be taught to students in formal school:

*We walk to the beach.
It is not the crab that clamps the finger
Except for the used plastic*

*We drowned in the ocean
Expect a green seaweed, but we see seaweed
packaging
Swimming into the middle of the ocean does not
smell.
The nautical we get but the smell of death
The fish whose bodies were destroyed due to oil
spills
Then all the people under the sea gathered together.
Because humans are so outrageous.
Slowly burn the ocean.
They then agreed not to enter the fishing nets.
An attempt to share the grief*

The poetry illustrates the current condition of the ocean. Everyone has to pay attention to the beach and ocean. We have to care more because the ocean is the source of human life. The poetry could give an understanding to students about how essential to care for the ocean.

In addition, maritime education in Indonesia could be implemented in the classroom through local wisdom. Much local wisdom in Indonesia contains an ecological value. One of many cultures regarding the ocean that people do in Indonesia is *sedekah laut*. Triyanto *et al.* [29] state that *sedekah laut* ceremonies in Indonesia contain many cultural values. In Cilacap, Central Java, it is done as the gratitude of the fishermen in the area [27].

4. Conclusion

The ocean is an important aspect that must be preserved. Currently, marine pollution is being a global issue in the world. There needs to be a sustainable solution to solve this problem. The main finding of this research is how language learning could contribute to understanding ocean literacy and improving awareness to save the sea. From this research, it can be concluded that ocean literacy could be integrated into language learning material.

The step that could be pursued was teaching the materials related to ocean literacy in the classroom. Language learning can be conducted by integrating marine content on student reading texts such as posters and poetry. Teachers should choose the learning material related to attitude formation to love and save the sea. This can be conducted in language learning, especially in Senior High School. Ocean literacy insight is crucial for the students to enhance their awareness of the importance of preserving the sea. In this study, the researchers chose several manuscripts that could be employed, such as posters, news, poetry, and local wisdom regarding the ocean.

Therefore, the students could understand the seven principles of ocean sciences, namely (1) the earth has one big ocean with many features, (2) ocean and life in the ocean shape the features of the earth, (3) ocean is a

major influence on weather and climate, (4) ocean makes earth habitable, (5) ocean supports a great diversity of life and ecosystem, (6) ocean and human are inextricably interconnected, and (7) ocean is largely unexplored. The limitation of this research is that researchers only provide examples of internalization of the value of ocean literacy in language and literature materials. Researchers also only describe examples of the learning of poetry and posters. Internalization of the value of ocean literacy can certainly be conducted on other materials or even in other subjects.

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