Improving Wetland-Based Science Literacy Skills in Children of Harapan Bangsa Kindergarten

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ABSTRACT: This study aims to describe the improvement of kindergarten children's literacy skills through the use of wetland-based animal and plant textbooks. This research was conducted with 30 children consisting of 15 children from Kindergarten B1 and 15 children from Kindergarten B2 Harapan Bangsa Banjar Regency. The method used was descriptive qualitative method. Data collected in the form of observations, interviews, and documentation. Observations were obtained by observing the learning carried out by teachers and students during the learning process using the Wetland-based Animals and Plants textbook, interviews using semi-structured to explore more in-depth information, and documentation containing photos of the learning process using the textbook. The data analysis technique used is the model of Miles and Huberman with the stages of data reduction, data presentation, verification, and conclusion drawing. The results showed that 100% classical presentation increased in science literacy skills. Learning using the Wetland-based Animals and Plants textbook goes well so that it can improve children's science literacy skills. Based on this, further researchers can use the Wetland-based Animals and Plants textbook to improve children's science literacy skills. In addition, it can also be used as a reference in developing textbooks that facilitate children to improve science literacy skills in kindergarten.

KEYWORDS: Science Literacy, Wetlands, Kindergarten

I. INTRODUCTION

Early childhood education has an important role in the formation of cognitive, affective, psychomotor, and other abilities, especially science literacy. Science literacy skills need to be possessed from an early age because children will gain such great knowledge that will affect them in the future (Rijkiyani & Mauizdati, 2022). This ability is obtained by children not only as scientific knowledge, but children are able to have awareness of science in natural resources and the environment in a local, national and global context.

Based on the importance of science literacy skills, children's science literacy skills in Indonesia still face a big challenge, namely the low level of these abilities. Judging from the PISA results, every year there is a significant decline. In 2015 Indonesian children's science ability scored 403, decreased in 2018 with a score of 396, and decreased again in 2022 with a score of 383 as shown in the following trend picture (Indonesia, 2022).
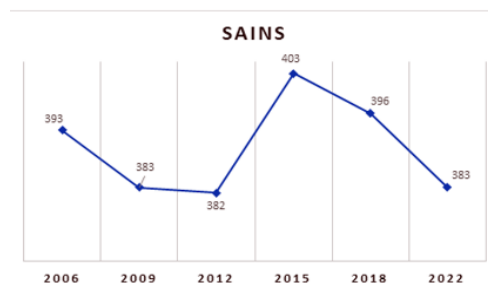

Figure 1: Science Literacy Trend

In addition, the findings of field facts show that children's science literacy in PAUD is also still low. Evident from the test results on science skills there are 8 BSB children, 10 BSH children, and 2 MB children. This is due to the fact that the textbooks of

animals and plants in wetlands have not been presented, children do not know the names of animals and plants in wetlands, and children have not been able to say the names of animals and plants in wetlands.

Based on this, it is necessary to make efforts to improve children's science literacy skills. Efforts that can be made are using textbooks that support wetland-based science literacy skills. According to (Sakerani et al., 2023) teaching books are materials used to assist teachers in carrying out teaching and learning activities to achieve the success of the learning process so that it can make students achieve learning objectives as expected.

The use of wetland-based textbooks will make learning meaningful for children. Meaningful learning is learning that connects new phenomena to the knowledge that children have before, especially with children's lives (Nuriana & Hotimah, 2023). Therefore, learning must be linked to concepts that children already have, so that new concepts can be easily accepted by children such as the use of wetland-based teaching books.

South Kalimantan has a diversity of natural resources, especially with wetlands. According to (Sakerani et al., 2022) wetlands are land areas that are inundated with water. Wetlands have an important role in the habitat of various plant and animal species. This can provide an opportunity to integrate wetlands into kindergarten education. Kindergarten B Harapan Bangsa is located in Banjar district. Geographically, Banjar district consists of wetlands.

Based on this, Harapan Bangsa kindergarten children should be very familiar with wetland animals and plants as the school is surrounded by wetlands. In addition, the average child lives in a wetland area. Through the use of wetland-based textbooks, it is expected that the science literacy skills of Harapan Bangsa kindergarten children will improve.

II. METHOD

This research uses descriptive qualitative methods. Descriptive qualitative method is a method to describe the phenomenon of what the research subject experiences in a descriptive way using words in a special natural context. This method allows researchers to see firsthand how the use of wetland-based animal and plant textbooks in learning. The correspondents of this study were 30 Harapan Bangsa Kindergarten B children consisting of class B1 of 15 children and class B2 of 15 children.

This research was conducted using three stages. The first stage is the preparation stage of making a research design. At this stage, the research location was determined, official and school permits were obtained, initial observations were made, correspondents were selected, and research instruments were prepared. In the second stage, namely the implementation stage in the field. Researchers collect data based on the instruments made. In the last stage, namely the post-field stage. Researchers analyzed data based on data collection. The data obtained in the form of observation results from the initial learning activities to the end of learning. The data is analyzed descriptively and draws conclusions.

Data sources in this study include observation, interviews, and documentation. (1) Observations were obtained by observing the learning carried out by teachers and students during the learning process using wetland-based animal and plant textbooks. (2) Interviews using semi-structured to explore more in-depth information. (3) Documentation contains photos of the learning process using textbooks. The data analysis technique used is Miles and Huberman with the stages of data reduction, data presentation, and verification and conclusion drawing.

III. RESULT

Learning using wetland-based animal and plant textbooks is carried out in five weeks. The book presents 5 materials including water animals, land animals, air animals, land plants and aquatic plants. The following is a description of each learning implementation based on the material presented in the textbook.

In the water animal material, children recognize five types of animals that live in water. The animals studied are monitor lizards, frogs, tilapia fish, ducks and crocodiles. In the textbook, there are pictures and text containing the name, place of residence, food, and skin/fur color of the animal as presented in the following picture.

Figure 2. Water Animal

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After children recognize the name, place of residence, food, and skin/fur color of animals, children learn to write the name of the animal presented in the picture. Each discussion, children are given the task to write the name of the animal according to the picture presented as shown in the picture below.

Figure 3. Get to know water animals

At the end of the material there is a Let's Practice activity for children to write the name of the animal according to the picture presented to measure students' understanding of the material they have learned. Based on the Let's Practice activity, all children are able to remember animals that live in water. In addition, children are also able to mention water animals that children know such as tilapia, haruan fish, river crabs, water insects, catfish, and so on.

In the land animal material, children recognize five types of animals that live on land. The animals studied are snakes, monkeys, cows, chickens and goats. In the textbook, there are pictures and text containing the name, place of residence, food, and skin/fur color of the animal as presented in the following picture.
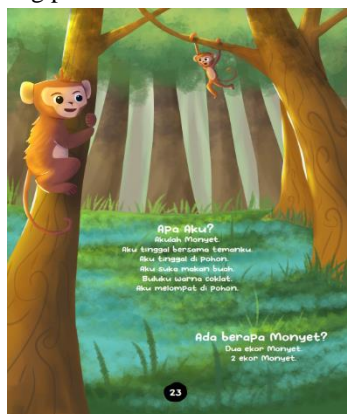

Figure 4. Land Animal

After children recognize the name, place of residence, food, and skin/fur color of animals, children learn to write the name of the animal presented in the picture. Each discussion, children are given the task to write the name of the animal according to the picture presented as shown in the picture below.

Figure 5. Get to Know Land Animal

At the end of the material there is a Let's Practice activity for children to write the name of the animal according to the picture presented to measure students' understanding of the material they have learned. Based on the Let's Practice activity, all children are able to remember animals that live on land. In addition, children are also able to mention land animals known to children such as worms, cats, proboscis monkeys, spiders, rats, and so on.

In the air animal material, children recognize five types of animals that live in the air. The animals studied are birds, crickets, grasshoppers, flies, and mosquitoes. In the textbook, there are pictures and text containing the name, residence, food, and skin/fur color of the animal as presented in the following picture.

Figure 6. Air Animals

After children recognize the name, place of residence, food, and skin/fur color of animals, children learn to write the name of the animal presented in the picture. Each discussion, children are given the task to write the name of the animal according to the picture presented as shown in the picture below.

Figure 7. Get to Know Air Animal

At the end of the material there is a Let's Practice activity for children to write the name of the animal according to the picture presented to measure students' understanding of the material they have learned. Based on the Let's Practice activity, all children are able to remember the animals that live in the air. In addition, children are also able to mention air animals known to children such as ampal, cockroaches, dragonflies, insects, and so on.

In the land plant material, children recognize five types of plants that live on land. the plants studied include coconut trees, kuweni trees, flowers, cassava and corn. In the textbook presented pictures and text containing the name, place of life, food, drink, as well as the color of the stem and leaves of the leaves of these plants as presented in the following image.

Figure 8. Land Plants

After children know the name, place of life, food, drink, and the color of the stem and leaves, children learn to write the name of the plant presented in the picture. Each discussion the children are given the task to write the name of the plant according to the picture presented as shown in the picture below.

Figure 9. Get to Know Land Plants

At the end of the material there is a Let's Practice activity for children to write the name of the plant according to the picture presented to measure students' understanding of the material they have learned. Based on the Let's Practice activity, all children are able to remember plants that live on land. In addition, children are also able to mention land plants known to children such as rambutan plants, cactus plants, mango plants, jackfruit plants, sawo plants, and so on.

In the water plant material, children recognize five types of plants that live in water. The plants studied include water hyacinth, lotus, reeds, waterangkong, and mangrove trees. In the textbook, there are pictures and text containing the name, place of life, food, drink, and the color of the stem and leaves of these plants as presented in the following image.
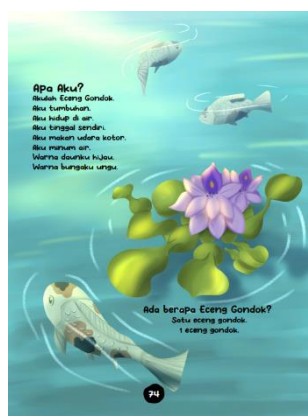

Figure 10. Water Plant

After children know the name, place of life, food, drink, and the color of the stem and leaves, children learn to write the name of the plant presented in the picture. Each discussion the children are given the task to write the name of the plant according to the picture presented as shown in the picture below.
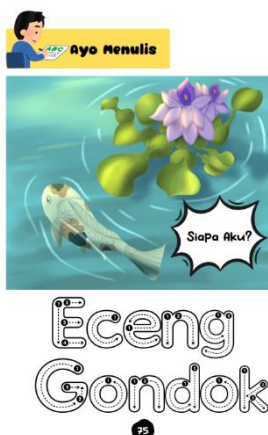

Figure 11. Get to Know Water Plant

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At the end of the material there is a Let's Practice activity for children to write the name of the plant according to the picture presented to measure students' understanding of the material they have learned. Based on the Let's Practice activity, all children are able to remember plants that live on land. In addition, children are also able to mention land plants known to children such as rambutan plants, cactus plants, mango plants, jackfruit plants, sapodilla plants, and so on.

After children learn all the material, there is a test to measure children's science literacy skills. The tests presented include (1) children pairing pictures of animals and plants with written names of animals and plants, (2) children pairing pictures of animals and plants with where animals and plants live, and (3) children pairing pictures of animals and plants with animal and plant food.

The results showed that children's science literacy skills increased with a 100% classical completeness presentation as shown in the following figure.

Nama	Nama Hewan dan Tumbuhan	Tempat Tinggal	Makanan	Skor Total
Afwa Nur Ma'ripah	100	100	100	100
Ahmad Faiz Rafassya	100	100	100	100
Ahmad Haris	100	100	100	100
Alvinar Daffa	100	100	100	100
Annisa Fauzanah	100	100	100	100
Ayu Zilda Putri	100	100	100	100
Bella	100	100	100	100
Juairiah	100	100	100	100
Muhammad Azhar Ilmi	100	100	100	100
Muhammad Haris	100	100	100	100
Muhammad Rizky	100	100	100	100
Muhammad Zain Athaillah	100	100	100	100
Nur Afiyah Kamila	100	100	100	100
Nur Hanna Zikrin	100	100	100	100
Nur Huda	100	100	100	100
Ketuntasan Klasikal				100%

(a) Class score B1

Nama	Nama Hewan dan Tumbuhan	Tempat Tinggal	Makanan	Skor Total
Abidah Adelia	100	100	100	100
Abidah Adena	100	100	100	100
Ahmad Nazip	100	100	100	100
Daniel Ahmad Yadi Putera	100	100	100	100
Hanan Attaqi	100	100	100	100
Muhammad Hanan Yudana	100	100	100	100
Muhamad Husin Hidayat	100	100	100	100
Muhammad Syakir	100	100	100	100
Muhammad Wafi	100	100	100	100
Muhammad Yaaqut Al' Arsy	100	100	100	100
Muhammad Zakir	100	100	100	100
Nor Lina Sofia	100	100	100	100
Ramadhan Alfaid	100	100	100	100
Revita Adelia Putri	100	100	100	100
Siti Fauziah	100	100	100	100
Ketuntasan Klasikal				100%

(b) Class score B2

Figure 12. Recap Test

Through the use of textbooks that have been developed by Dr. Sakerani, M.Pd, Herti Prastitasari, M.Pd, and Ratna Purwanti, M.Pd can improve the science literacy of Harapan Bangsa Kindergarten B children. This increase occurs because the textbooks used in learning are systematically designed, based on the environment around children (contextual), sharpening children's abilities both affective, cognitive, and psychomotor, in accordance with the learning objectives expected by the teacher. According to the opinion (Abdilah & Abdurrahman, 2023) that in designing coursebooks must have a clear and systematic structure, pay attention to individual student needs, prioritize communicative aspects, and use effective learning methods.

Designing textbooks needs to identify problems in the field, identify science subjects, identify science literacy skills, review theories and literature, design textbooks systematically, the designed book is validated by 2 experts, namely science and design. Validation is useful to determine whether the product produced is in accordance with certain parameters based on the results of expert assessments.

In the implementation of learning using coursebooks, teachers first study the materials presented in the book to understand the content of the material, use appropriate learning models and media to stimulate children to achieve the expected learning abilities/outcomes, and relate the material to the environment around children such as at school and the child's home environment. Linking the material with the environment around the child can be called contextual learning.

Contextual learning is a strategy to relate material to the environment around children so that children are able to build deeper knowledge based on their experiences (Prastitasari, 2019a; Prastitasari et al., 2018, 2022). The benefits of contextual learning are that it enables children to think based on real situations, children are able to build knowledge quickly, and encourage children to be active in learning (Prastitasari, 2019b).

Harapan Bangsa Kindergarten is in Banjar Regency, South Kalimantan where the environment tends to be watery because the school is located in a wetland area. In addition, Harapan Bangsa Kindergarten children live in a wetland area. Wetlands are soils

that have high humidity so that they tend to be submerged in water either permanently or seasonally (Sakerani et al., 2023). Based on this, in addition to textbooks, it is also necessary to design contextual learning by linking to wetlands.

Furthermore, teachers activate children through question and answer activities to see children's science literacy skills. Children who are active in learning make learning fun, motivate children to progress, and sharpen children to think.

CONCLUSION

The results showed that the science literacy skills of kindergarten B Harapan Bangsa Banjar Regency, South Kalimantan increased with 100% classical completeness. Based on these results, it shows that through the use of Animal and Plant textbooks there is an increase in children's science literacy. This happened because the teacher chose the right teaching materials, namely the Wetland-based Animals and Plants textbook which is in accordance with the characteristics of the school environment and where children live.

The Wetland-based Animal and Plant Book presents interesting pictures and text for children to get to know animals and plants including their names, places of residence, food, and colors. In addition, there are tasks that children must do in each material and at the end of learning there is a test measuring children's science literacy skills. Furthermore, in the learning process, teachers use interesting learning models and media for children, and link learning with the environment around children through question and answer activities.

Based on these results, it can be used as a reference for further researchers to use the textbook to improve science literacy. In addition, it can develop textbooks that facilitate students to improve science literacy or other abilities such as literacy and numeracy in kindergarten.

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