

CHAPTER I

INTRODUCTION

1.1 Background

Turtles are one of the endemic animals of tropical and subtropical waters in Indonesia that are endangered. There are 7 types of turtles in the world and 6 of them are in Indonesia. Hawksbill turtles (*Eretmochelys Imbricate*) are one of the most endangered species of turtles. Its eagle-like pointed beak makes it look attractive to many in trade. The leatherback turtle (*Dermochelys Coriacea*) is one of the largest types of turtles that weighs more than 500 tons and this type of turtle is one of the largest reptiles in the world. Leatherback turtles that like to prey on these jellyfish can live up to 50 years in the wild. The green turtle (*Chelonia mydas*) is one of the longest-lived turtles. This type of turtle is generally herbivorous, but when they are small or in the hatchling phase, they also feed on algae, crabs, shrimp, and various other small organisms to obtain nutrients that support their rapid growth. Crock turtles (*Caretta Caretta*) are mostly carnivorous and primarily feed on marine invertebrates, such as jellyfish, mollusks, and crustaceans. These foods provide the nutrients needed to support their growth and activities in marine habitats. Flatbed turtles (*Hatator Depressus*) are a species that is rarely found in Indonesia and is partly found in Australian waters. The loggerhead turtle (*Lepidochelys olivacea*) is the most common turtle found in the world, including in Indonesia. One type of turtle that does not exist in Indonesia is called *the Kemp's Ridley Turtle* which explores the waters of the Atlantic and Mexico. This data is taken from *profauna.net* and) (M. Environment et al., 2018)

The extinction of sea turtles is an increasingly worrying problem in various parts of the world. The extinction of sea turtles in Bali can have a negative impact on marine ecosystems, as turtles are one of the important components of the ecosystem that maintains the balance of the sea. The sea turtle population continues to decline drastically due to various factors such as hunting, climate change, and marine pollution. According to Government Regulation Number 7 of 1999 concerning the Preservation of Plant and Animal Species, turtles are a type of animal that is protected to prevent the threat of extinction. This data shows that conservation efforts have been made, but there are still many challenges faced in their implementation. As the world's largest archipelagic country with more than 17,500 islands and more than 360 million hectares of marine area, Indonesia has great potential in sea turtle conservation efforts, but it

also faces significant challenges in terms of oversight and law enforcement. This indicates the need for further action and cooperation from various parties to protect sea turtle populations from the threat of extinction. (Green, 2014) (Purwaningsih, 2020) (Ario et al., 2016)

Despite various efforts to maintain the sea turtle population, the extinction rate continues to rise. This fact encourages the importance of increasing public awareness and education about the importance of sea turtle conservation. For example, education programs and conservation campaigns can play a major role in changing the behavior of people who previously preferred to damage sea turtle ecosystems. Based on reports from various studies, the lack of awareness is one of the main obstacles in these conservation efforts. In addition, technological developments can also be used to monitor turtle populations and their habitat conditions more effectively. Therefore, the conclusion is the importance of synergy between government policies, community participation, education, and technology in preventing the extinction of sea turtles. Environmental education, especially about turtle conservation, is very important to be delivered from an early age to children. (Purwaningsih, 2020)

Children aged 10–13 years are in a critical phase of cognitive development, where they begin to be able to understand abstract concepts, including environmental issues. According to this period, an interesting and interactive method of conveying information is very important so that children are interested and understand the educational messages conveyed. However, in practice, traditional educational methods are often less able to attract children's attention. Material delivered verbally or in writing tends to be difficult for children to accept, especially if they feel that the information provided is monotonous and irrelevant to their world. (Children et al., 2023)

As one solution, the use of gaming media can be a more interesting and interactive approach. At that age, children need real objects and hands-on experience to understand information. Illustration books help by providing visuals that make it easier for them to understand and remember abstract information. Children at that age tend to absorb information more easily through fun and challenging games. Games are not only entertaining, but also capable of increasing children's emotional and intellectual engagement. One form of effective game to convey educational information is board games. Board games, as a form of physical play that involve direct interaction with other players, can teach children about certain concepts indirectly through the rules of the game. According to one example of interactive media, it is a number puzzle that is an educational play activity to gain knowledge and children's learning

experience in a fun way for children and can make children happy in learning mathematics. By using narratives, challenges, and competition elements, board games can turn educational information into something interesting for children. (Illustration et al., 2022) (Ramdani & Samsiah, 2023)

Traditional learning methods are often considered less interesting and tend to be boring for children. Therefore, a more creative and interactive approach, such as using board games, is needed to make the learning process more fun and effective. According to the lack of learning resources and limited media or teaching aids are one of the factors that cause learning to become one-way and boring, which ultimately has an impact on declining student learning outcomes. Children aged 10 to 13 years old are elementary school students in grades 5, 6 and junior high school students in grade 7. In their curriculum, the topic of animal extinction is of particular importance, given that many species around the world face serious threats from climate change, habitat destruction, and human activity. Through this learning, students not only understand the causes of extinction, but also the importance of conservation and their role in maintaining the balance of ecosystems. In addition, they are invited to participate in environmental projects, such as tree planting and awareness campaigns to protect endangered species. (Students & Policies, 2020)



Picture 1.1 Independent Curriculum Student Book Grades 5, 6, and 7

(Source: <https://www.datadikdasmen.com/2022/08/buku-kurikulum-merdeka-k4.html?m=1>, on 25/09/2024)

Through designing *board games* that focus on turtle conservation, children can be introduced to basic concepts about marine ecosystems, the threats turtles face, and the importance of conservation efforts. Material that is delivered only orally often makes children feel bored quickly and less effective in the learning process. However, if integrated with games, children will more easily absorb knowledge because they can practice it directly. The game can be designed to include elements such as turtle migration, predator threats, human poaching, and conservation efforts, so that children not only play, but also learn about the importance of preserving turtles. This board game is expected to help children understand the impact of human actions on the environment and invite them to be involved in nature conservation efforts from an early age. In addition, the use of (Schools & Classes, 2023) *board games* as an educational medium has greater long-term potential compared to common methods. As evidenced by the journal Research shows that students in experimental classes who learn to use (Dan et al., n.d.) *board games* get higher scores than students in classes who use common methods. This proves that board game-based learning media is more effective in improving learning outcomes. Due to the repetitive and interactive nature of the game, children tend to engage in these games more often, so the information conveyed will be easier to remember and understand. Board games can also be played with family or friends, so that the message of turtle conservation can be spread more widely among the community.

With the existence of *board games* specifically designed for turtle conservation education, it is hoped that children aged 10–13 years can become agents of change who care about environmental sustainability, especially turtles. Through deep understanding and fun experiences, children can be actively involved in future turtle conservation campaigns. These efforts are not only to increase their knowledge, but also to form awareness and concern for the environment from an early age, which can ultimately help preserve turtles from the threat of extinction. Therefore, designing *board games* as an effort to preserve turtles for children aged 10–13 years is very important to do. This is not only as a means of entertainment, but also as an effective educational medium to instill environmental awareness and teach the importance of preserving turtles to the younger generation.

1.2 Problem Identification

There are several problems identified in this study. The following is a description of the identification of existing problems, namely:

a. Children's Lack of Awareness of Turtles

Children aged 10–13 still don't know much about the importance of caring for endangered turtles, so more interesting ways are needed to raise their awareness. According to the decline in the turtle population, it is mostly due to uncontrolled human activities and low public awareness of the threat of extinction of these animals. (B. H. Environment et al., 2024)

b. Lack of Interesting Learning Media

The usual way of learning is often boring and uninteresting for children. Therefore, more interactive media, such as board games, are needed to make learning more fun. According to the lack of learning resources and limited media or teaching aids are one of the factors that cause learning to become one-way and boring, which ultimately has an impact on declining student learning outcomes. (Students & Policies, 2020)

c. The Difficulty of Making the Right Material for Children

Designing board games that can entertain and teach children aged 10–13 about turtle conservation requires materials that are appropriate to their level of understanding and interests. The journal shows that reading learning difficulties can affect children's development in various subjects, so the right approach is needed by creating a supportive learning environment to help overcome it. From the journal, it has explained how difficult it is to make material that can be understood by children. (Education et al., 2021)

d. Lack of Preservation Values in Game

Efforts are made to incorporate conservation values, such as protecting turtles and recognizing the threats that turtles face, into the game without making it less appealing.

1.3 Problem Formulation

How to design an effective board game in conveying turtle conservation messages to children aged 10–13 years?

1.4 Problem Limitations

- a. The focus of this game is intended for children aged 10-13 years, so that the material, design, and game mechanics will be adjusted to the level of understanding and learning needs of children in that age range.
- b. The game will only focus on information related to turtles and their conservation efforts, so the content included is limited to issues relevant to turtle conservation, such as threats to turtle populations and how to protect them.
- c. The media used is board games, so the learning method applied will rely on an interactive game approach that aims to educate through playing experiences, not using other learning methods such as modules or reading books.
- d. This game will refer to the turtle conservation situation in Indonesia, especially related to turtle species in the archipelago, so it does not discuss in depth the species or conservation efforts outside Indonesia.

1.5 Purpose of Planning

The purpose of this planning is as follows:

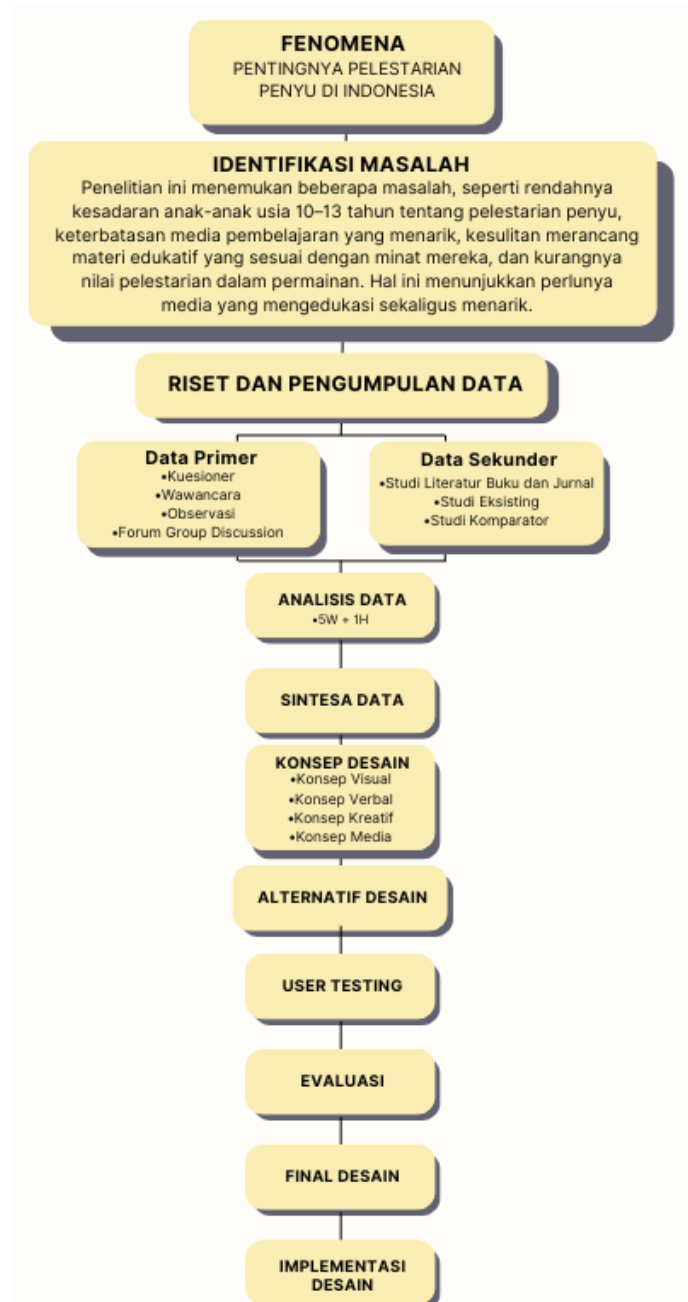
- a. Designed an engaging and interactive board game to convey information about turtle conservation to children aged 10–13 years.
- b. Increase children's awareness and understanding of the importance of protecting sea turtles and marine ecosystems through the media of games.
- c. Integrating turtle conservation values, such as protecting habitats, recognizing threats faced by turtles, and conservation efforts, into the gameplay in an engaging way.
- d. Providing a fun educational facility as well as educating so that children can learn about turtle conservation without feeling bored.
- e. Measuring the effectiveness of board games in changing children's attitudes and behaviors towards turtle conservation.
- f. Encourage children's involvement in real-life turtle conservation activities through educational play experiences.

1.6 Benefits of Planning

With the expected purpose, the benefits of this design are as follows:

- a. Increasing Environmental Awareness: Children will be more aware of the importance of turtle conservation and understand the threats faced by turtles, so that they grow concern for the environment from an early age.
- b. Interesting Educational Media: *This board game* can be a more fun and interactive alternative to educational media, so that children are more interested in learning about turtle conservation.
- c. Encourages Children's Involvement in Nature Conservation: Through games, children can be inspired to be more involved in real-life activities related to turtle conservation and the environment in general.
- d. Improving Children's Understanding of Conservation: Children can learn basic concepts about turtle conservation, such as habitat protection, the turtle life cycle, and threats from humans and nature.
- e. Social and Cognitive Skills Development: In addition to environmental education, this board game also helps children develop critical thinking, cooperation, and problem-solving skills during play.
- f. Educational Entertainment Facilities: This board game not only serves as a learning medium, but also as a healthy entertainment tool, so that children can learn while playing.

1.7 Planning Framework



Picture 1.2 Planning scheme
(Source: Personal Documents, as of 25/09/2024)