

# CHAPTER I

## INTRODUCTION

### 1.1 Background

Waste has been a global issue for a very long time. However, now the problem is centered around the amount of waste production; especially plastic waste that pollutes the sea and waterways which contaminates the marine ecosystem. This has a negative impact on the environment especially because plastic takes a long time to decompose naturally; plastic decomposition itself takes over 50 years to completely degrade (Müller et al., 2001). According to an article on Clean Management's website (n.d.), there are other types of pollutions as a result of improper waste disposal that includes land pollution where the waste contents rot over time and seeps into the soil, water pollution where waste will travel to the ocean and result in water contamination, and air pollution which affects the atmosphere due to the toxic gases caused from the breakdown of waste. Contaminated landfills and waters can be a breeding space for rats, insects, diseases, and harmful bacteria that affects animals, plants, and humans which can affect habitats and biodiversity. These germs can transmit various bacterial diseases through direct and indirect transmission such as salmonellosis, food poisoning, skin infections and tetanus while viral diseases include trachoma, hepatitis A, etc. Moreover, parasites that breed in these waste spaces can cause hookworm, pinworm, and roundworm diseases. Indirect transmission is caused by the disease-spreading animals such as mosquitoes, flies, cockroaches, and rats that can contaminate human cutlery and home appliances where children under the age of five are most affected by the diseases caused by the environment (Prüss-Üstün et al., 2016).

According to an article on Kejar Mimpi's website, metropolitan cities such as Jakarta, Bandung, Yogyakarta, and Surabaya are the largest waste contributors in Indonesia; contributing waste in the form of food and drink packaging, plastic bags, and food scraps that comes from residential and commercial areas. It is also stated that Indonesia is the second-largest plastic polluter in the world. There are several factors as to why proper waste

management is still not imposed into the community; that is low public awareness and education of waste management, and weak environmental regulations from the government. According to an article on Berita Satu's website (2021), the National Plastic Action Partnership (NPAP) stated that up to 4.8 million tons of plastic waste is not properly processed in Indonesia each year, where 48% is being burnt in open spaces, 13% is not properly processed in landfills, and the remaining 9% of waste that pollutes the ocean. Project Manager at OPPA, Duala Oktoriani said that this data is predicted to rise as the amount of plastic waste production in Indonesia shows an increasing trend of 5% every year. For this reason, increasing the role of sector workers in the national waste management is very important, as well as increasing the awareness regarding the effects of improper waste management and the methods that can help reduce and recycle waste. According to an article on AHK Indonesia's website (2021), the recycling rate of Indonesia in 2019 is 14.58%, which suggests that sorting and recycling are still not being practiced widely. Garbage should be sorted and thrown into trash bins that is later collected and transported by garbage collectors to landfills where waste will be destroyed and processed into reusable materials (Siagian, 2022). The behavior of dumping trash into rivers has resulted in flooding in several areas in Indonesia, as the water overflows after heavy rains due to the massive amount of trash in the area (Muliaty, 2021).

Recognizing waste management at an early age in children can develop character for environmental care, discipline, and responsibility; where good character can be shaped through education (Ismail, 2021). It is easier to develop good character during the golden age as the surrounding environment influences the way children behave which also affects their mental development (Rustini, 2012). In order to maintain a clean environment, there should be a basic mindset and behavior that supports the act of reducing waste and littering, and trash bins should be easily accessible to encourage proper waste disposal habits. "This habit in children is influenced by education provided either by parents, the community, or from school. Parental education is one of the most important factors in shaping human behavior" (Herdiansyah

et al., 2021:2). Children have the tendency to imitate their parents which further relates to their response to littering that is influenced by the littering behavior of their parents, or even teachers and friends at school (Kollmuss & Agyeman, 2002). Children of the golden ages of 0-5 years generally spend most of their time at pre-school, which is why teaching cleanliness to children can be done by learning to keep the school environment clean. According to UNICEF, data from around the world shows that children who are diligent in maintaining cleanliness at school not only help improve their health, but also maintain the health of families and those around them. Therefore, it is important to educate children on the importance of waste management and cleanliness so that the habit can be passed down onto their children in order to build a more eco-conscious community for the future generations.

Storybooks are not only used as a teaching material, but it can also help improve the cognitive skills of children. Based on the research done by Ratnasari & Zubaidah (2019), the influence of using picture books for children aged 4-5 years can significantly influence their ability to speak. According to the interview done by the author, the author gained insight where interactive activities can be useful in educating children as well. For this reason, the author had made comparisons of three Indonesian picture books: *Detektif Sampah* by Desy Juwitaningsih & Muhammad Hasbi (2021), *Lala Membersihkan Sampah* by Tria Ayu K. (2018), and *Aku Belajar Buang Sampah* by Ali Muakhir (2018); where these local books do not have interactive features and so the author can include a game activity that involves matching objects and word games in the storybook to stimulate children. Also, the local books do educate children to throw trash in the right place but they do not specify the different types of trash that can be separated; which is an issue the author had gained through interview and questionnaire. For these reasons, the author can produce an illustration book about the different types of trash with an interactive feature of match-the-following and crossword game to the book to stimulate activity in children which specifically educates children on the different types of trash that can be separated.

## **1.2 Problem Identification**

From the research above, several problems can be identified and are listed below:

1. The lack of awareness and education of parents on the effects of improper waste management can affect the cleanliness of their home and surrounding areas which then affects the health of young children in Indonesia who are more vulnerable to diseases.
2. The behavior of littering can be formed in young children if not properly guided by parents or teachers from a young age which further affects their discipline, mindset, and responsibility to keep the environment of their home or school clean.
3. The waste management system in Indonesia generally does not recycle garbage into different types (paper, glass, metal, organic waste, etc.) which results in waste not being processed properly in landfills which causes it to be a breeding space for disease-carrying animals like rats, flies, cockroaches, etc. that can affect the health of Indonesian citizens.

## **1.3 Problem Formulation**

Based on the identification of existing problems, it can be concluded that the formulation of the problem is:

1. What are the efforts made to educate children on waste management, waste categorization, and the effects of improper waste disposal from an early age?
2. How to communicate and implement the importance of proper waste management into effective media that can be used by parents and teachers to educate children on waste management?

## **1.4 Problem Scope**

Based on the background and problems above, the research scope is as below:

## **1. What**

The focus in this topic is to consider the existing waste management problems that can be used as a design concept in order to educate young children on waste management using learning media.

## **2. Who**

The intended target audience is:

- a) Age: 3-6 years
- b) Gender: All gender
- c) Demographics: Bandung
- d) Education: Pre-school
- e) Economy Class: Upper Middle Class

## **3. Where**

Data collection is conducted at Cendekia Leadership School (Bandung) for primary data and HEI Schools Senayan (Jakarta) for supporting data.

## **4. When**

Data collection and design studies is conducted from February 2023 to August 2023.

## **5. Why**

Education on waste management is important because littering and improper waste disposal can affect our environment which in turn affects the human health.

## **6. How**

By conducting qualitative and quantitative research such as literature study, interview, observation, and questionnaire, the author can design a learning media to educate children on waste management.

### **1.5 Research Purpose**

In consideration of these problems, the objective of the research aims to produce an effective media and supporting visual prompts that can be helpful for parents and teachers to educate young children on waste management at home and school. This book can also be used to improve English skills, and in the development of cognitive skills such as reading and writing.

## **1.6 Research Benefits**

### **1. For Campus**

- a) Can be used as a source of reference in the Visual Communication Design major.
- b) Can be used as an insight into the field of Visual Communication Design and understand the design process.

### **2. For Author**

- a) Author is able to think critically and apply knowledge that has been learnt while studying Visual Communication Design at Telkom University.
- b) Author can understand and improve the ability to perform research at university level.
- c) As one of the conditions to obtain a Bachelor's Degree in Visual Communication Design at Telkom University.

### **3. For Readers**

- a) Add insight to readers on waste management education and bring awareness.
- b) In hopes for readers to also practice proper waste disposal and become eco-conscious citizens.

## **1.7 Collecting Data and Analysis**

In preparing the research, the author can conduct mixed method. Qualitative research is the process of understanding social phenomena in regards of unique direct experiences, whereas quantitative research is the process of understanding data through numeric patterns (Ahmed et al., 2019).

### **1. Literature Study**

A literature study is the study of books, articles, journals, and other sources that is relevant to a specific problem to provide description and summaries (Ramdhani et al., 2014). The author can conduct this study to understand the phenomena of waste problem in Indonesia and supporting theories to create a design concept.

## **2. Interview**

Interview is a method of data collection that requires two people in order to exchange information through questions and answers, so that the relevant problem can be narrowed down into a conclusion (Esterberg, 2002). The author can conduct an interview with the school staff at a specific school to get their insight on waste management education and the most effective way to educate young children.

## **3. Observation**

Observation is a data collection technique to observe the behavior of a subject to gain insight (Kumar, 2022). Observation can be carried out at a school to observe the environmental care and facilities that the school may provide to children of ages 3-6 years, to gain insight on whether they understand the importance of waste management. The author can also find out what learning media is being used at the school, so that the author can create a design using a similar type of media.

## **4. Questionnaire**

Questionnaire is a data collection technique that uses a series of questions to obtain results of statistical data of a specific topic (Roopa & Rani, 2012). The author can use this method with parents aged 20-35 who have children aged 3-6 to gain insight on waste education at home.

## 1.8 Research Framework

A research framework can be used to elaborate and evaluate the variables in research, and how to collect the necessary data (Kinuthia, 2022). Through this framework, the author summarizes the background, phenomena, problem identification and formulation, and the relevant theories and research methods to make a design concept.

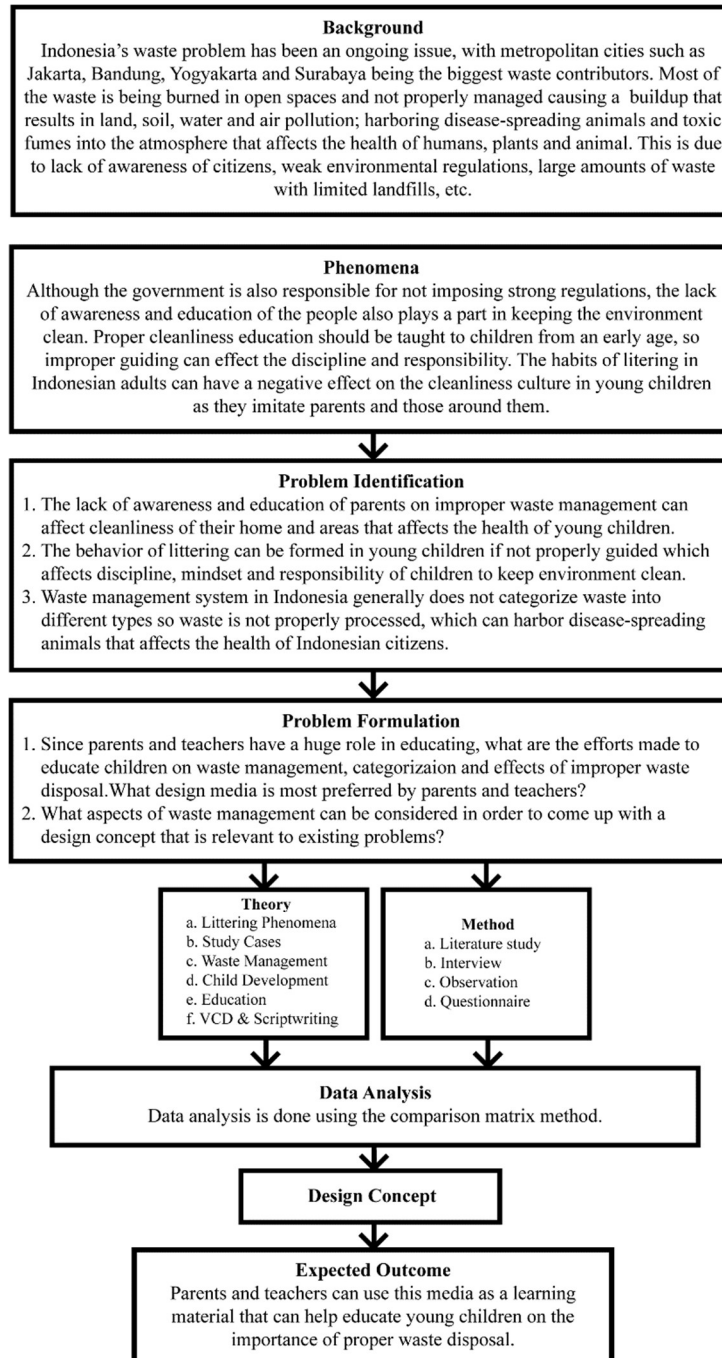


Figure 1.1 Research Framework

(Source: Private Document, 2023)



## **1.9 Chaptering**

The following is the chaptering used in writing research reports:

### **CHAPTER I: INTRODUCTION**

This chapter describes the background, problem identification, problem formulation, scope, benefits of research, methods of data collection and analysis, as well as the framework of the Final Project.

### **CHAPTER II: THEORETICAL FOUNDATION**

In this chapter, the relevant theoretical basis is explained as a basis for making designs.

### **CHAPTER III: DATA AND PROBLEM ANALYSIS**

In this chapter, the results of the data collected is structured and ready to be analyzed such as data observation, interviews, questionnaires, data analysis and drawing conclusions.

### **CHAPTER IV: DESIGN CONCEPT AND RESULTS**

This chapter describes all the concepts of the design starting from the idea concept, determining the target audience, conducting data collection, and making book illustration designs.

### **CHAPTER V: CLOSING**

This chapter contains the conclusions regarding the results of research and design related to the Final Project.