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‘’THREATENED AND THREATENING SEAS’’

Children’s Perceptions of the Marine Environment and Environmental Attitudes towards Marine Pollution in Kuta, Lombok.

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Master’s thesis:	30 credits
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Supervisor:	Bethanie Carney Almroth
Examiner:	Irma Brkovic

Abstract

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Aim: The aim of this study was to investigate early childhood learners' (5-8 years old) perceptions of the marine environment (beach and sea) and their environmental attitudes towards marine pollution through an educational intervention consisting of a drawing exercise and an in-class discussion.

Theory: Social-cognitive theory was used from which to explore environmental perspectives environmental attitudes, and the human-nature relation/connection.

Method: Early childhood learners' perceptions towards the marine environment and environmental attitudes in relation to marine pollution are researched by collecting qualitative primary data through children's narratives, self-created drawings and an in-class group discussion.

Results: The children in this study perceived the beach as a place for entertainment, a place for recreation, and a place for consumption, entailing positive thoughts. The sea evokes, in contrast to the beach, negative thoughts and is viewed as a threatening part of the marine environment. Children were simultaneously, however, fascinated by the beauty of the marine environment and marine life. Forms of marine life were humanized, which resulted in the emergence of selective empathy, exclusively shown towards animals in the marine environment that are perceived as 'beautiful' and/or 'large'. Plants were considered of less importance compared to animals. The children showed moral concern towards the way in which marine pollution impacts animals and the environment and reported solutions to help solve the issue. However, socio-cultural factors entailed by the Islamic culture withhold girls from connecting to the sea and may contribute to the emergence of negativistic, ecologistic, and utilitarian attitudes among the participants in this study. At the same time, Allah's contradictory trust in his followers to protect the environment might offer opportunities for the development of religion based environmental education programmes in the field of education for sustainable development.

List of Abbreviations

EE	Environmental Education
ECEE	Early Childhood Environmental Education
EA	Environmental Attitudes
PEB	Pro-environmental Behaviour
ECEE	Early Childhood Environmental Education
SLT	Social Learning Theory

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Foreword

The motivation for executing this research was based primarily on the frustration entailed by my personal experiences. As a surfer, I regularly encounter plastic waste floating on the ocean surface and witness children and adults carelessly disposing plastic rubbish on the beach while having picknicks. This made me wonder whether and how environmental education was implemented in the curriculum at the local primary schools in the surrounding area and how children view the marine environment and marine pollution. Having the desire to contribute to scholarly literature in early childhood environmental education and the compassion to save our flora and fauna enriched oceans through education, I decided to explore this issue.

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Introduction

The twentieth century has been a century fostering an increasing awareness of human-induced global environmental destruction. Among the numerous environmental issues that characterise our contemporary era, marine pollution has been identified as one of the most concerning crises due to the diversity and magnitude of its impacts. In fact, the environmental crisis surrounding marine pollution is often considered as a sustainability issue inseparable from other issues associated with biodiversity loss, climate change, and human health (Jambeck, et al., 2015).

Worldwide, the environmental degradation effects of marine pollution are becoming apparent as rivers and beaches become more and more visibly filled with plastic debris (Chakrabarty, 2014). This plastic debris may enter coastal waters by beach littering, inland waterways, wastewater outflows and wind or tide transport, and is widespread. Aquatic wildlife consumes plastic waste products, or become entangled in them, resulting in the death of birds, fish, turtles and even large mammals such as dolphins and sharks. Microplastics are being found in fish worldwide, which is caught and distributed for human consumption (Sharma & Chatterjee, 2017).

Despite the increasing visible magnitude of this issue and the uncountable warnings that have been raised for ocean environmental awareness, human behaviours often seem to move in the opposite direction (Chakrabarty, 2014). Several studies reported that Asian nations, especially China, Indonesia, the Philippines, Thailand and Vietnam, are contributing significantly to marine pollution (Coleman & Wehle, 1984; Sigler, 2014; Jambeck, et al., 2015). In Kuta, Lombok (Indonesia), beach littering continues to heavily contribute to marine pollution. According to Cordova, Hadi, and Prayudha (2018) the marine pollution in Kuta mainly originates from land-based sources caused by anthropogenic activities such as tourism (near beaches and waterways) and fisheries (in the ocean).

There is an abundance of quantitative empirical research on children's environmental attitudes and behaviours when it comes to littering behaviours (Bonnett & Williams, 1998; Camargo & Shavelson, 2009; Al-Khatib, 2009; Naquin, Cole, Bowers, & Walkwitz, 2011; Collado, Staats, & Corraliza, 2013). However, qualitative studies assessing children's understanding and environmental attitudes towards marine pollution appear scarce (Hartley, et al., 2018), especially when it comes to children living in low-socio-economic environments (Evans, et al., 2007a). Given the current global environmental crisis regarding marine pollution, researching this sphere is crucial as it potentially raises awareness amongst children about sustaining the marine environment.

1. Background

1.1 Problem Statement and Research Questions

Although marine pollution is an apparent environmental concern in Kuta, Lombok, primary schools pay little attention to the teaching of environmental values. Sustainable development topics related to marine plastic pollution, such as consumerism, are non-existent in the curriculum of primary schools in Kuta. This, while the coastal area of Kuta is highly impacted by plastic pollution.

The aim of this study was to investigate early childhood learners' (5-8 years old) perceptions of the marine environment (beach and sea) and their environmental attitudes towards marine pollution through an educational intervention consisting of a drawing exercise and an in-class discussion. For this research project, the following research question was formulated:

How do early childhood learners perceive the marine environment (beach and sea) and what environmental attitudes do early childhood learners' in Kuta have towards marine pollution?

To answer this question, the following sub-questions were formulated:

1. How do early childhood learners in Kuta, Lombok perceive the marine environment (beach and sea)?

2. How can the human-nature relation/connection between early childhood learners and the marine environment (beach and sea) be characterised?

3. What environmental attitudes do early childhood learners in Kuta, Lombok, have towards plastic pollution?

1.2 Statement of Relevance

The contribution of this study is an attempt to address the gap in the literature regarding how early childhood learners perceive and attach meaning to the marine environment and to marine pollution. With a focus on the human-environmental relation in this research, i.e. the relationship between humans and their natural, social, and built environments, the (problematic) relation between humans and their ecological environment is addressed, which is at the core of most environmental issues. This study can ultimately help to understand the underlying reasons, thoughts, and narratives behind the way in which the ecological environment is (mis)treated (Jensen, 2002). A better understanding of environmental perceptions and attitudes can, in turn, be utilised to instigate pro-environmental behaviour and can contribute to improving education for sustainability in Kuta and perhaps other areas in Indonesia and the world.

1.3 Structure of the thesis

This thesis is divided in seven main chapters. After just having introduced the topic of research, the problem statement, and the research questions, chapter 2 provides an overview of relevant literature concerning the research topic. In chapter 3, the theoretical framework of the social-cognitive theory of Bandura (1989), the categorization of symbols from drawings by Trend, Everett, & Dove (2000), and Kellert's (1985) environmental attitudes categorization theory are displayed and explained, which was used for data interpretation in this research project. Thereafter, in chapter 4 the method utilised for this research project is outlines, including relevant topics such as the participants, research instruments, data collection, data analysis, account for participation and collaboration, and ethical considerations. The results of this research are presented in chapter 5. These results are then discussed in chapter 6, while referring to and elaborating on previous literature. Ultimately, conclusions and recommendations are provided in chapter 7.

2. Literature review

In this literature review, previous scientific knowledge related to children's connection to nature, perceptions of the marine environment and attitudes towards marine pollution in the field of early childhood environmental education (ECEE) is reviewed. Although the participants in some of the reviewed studies are slightly older than the early childhood learners in this study (aged 5-8), these studies might still be useful to gain insights into children's perceptions, since the current study may produce similar results.

2.1 The Connection between Children and Nature

The overall quality of environmental education[1] (EE) for young children determines how young children perceive themselves in relation to the natural world. This knowledge is the key both to their understanding of themselves and to developing an orientation toward respecting and caring for the natural environment (Hughes, Richardson, & Lumber, 2018).

Within ecopsychology[2] it is posited that children feel connected to their environments when they are born (Phenice & Griffore, 2003). However, according to Phenice and Griffore (2003), this connection can be compromised, since the sense of 'self' often becomes separated from the natural environment as a result of the process of modern socialization. Phenice and Griffore (2003, 168) mention that if this outcome continues and is reinforced as a child develops, nature can become a concept perceived as something subject to domination and manipulation for human gains.

Taking the assertions from ecopsychology into consideration, academics such as Louv (2005) call the emerged separation between children and nature a 'nature-deficit disorder', which refers to the estrangement between children and nature. According to Louv (2005), this divide can have negative outcomes for children, such as decreased use of the senses and difficulties regarding attention. In addition, the divide between children and nature may even cause increased numbers of mental and physical disorders according to Louv (2005). It is therefore imperative to inform children about nature and encourage them to foster a connectedness to nature in order to create an appreciation for nature (Phenice & Griffore, 2003; Bakir-Demir, Berument, & Sahin-Acar, 2019).

This separation between children and nature might, among other causes, stem from an emerging pattern of children spending increasingly less time outdoors (Kahn & Kellert, 2002; Kaplan & Kaplan, 2002). This trend has continued with contemporary literature reporting similar patterns of decreased outdoor time (Louv, 2005; MacDougall, Schiller, & Darbyshire, 2009). The culture of children playing outside appears to come to an end, and daily living has shifted indoors. The direct, unstructured, and spontaneous contact with nature is rapidly becoming a non-existent aspect of a child's childhood (Malone & Tranter, 2003; Mullenbach, Andrejewski, & Mowen, 2019).

The connection between children and nature is, however, not inherently similar in different countries and can deviate between cultures. In Kuta, Lombok, the Islam is the largest religion, heavily affecting people's socio-cultural behaviour (Hauser-Schäublin & Harnish, 2014), potentially influencing environmental behaviour (Cacanoska, et al., 2019). In the Quran, the earth, heaven, animals, plants, and trees are repeatedly ascribed importance to. Two contradicting perceptions of nature preservation are mentioned in the Quran. On the one hand, it is stated that humans are granted trust by Allah to look after the earth and that if anyone misuses the earth and it resources, that person shall be punished. These conceptions that promote ecological preservation are included in the Syariah (Islamic law) (Cacanoska, et al., 2019).

[1] Environmental Education (EE) is an educational process through which learners are encouraged to learn about the environment and allows for learners to explore environmental issues. This may result in a deeper understanding of environmental issues, necessary to foster the skills to make informed decisions in a responsible manner

[2] Ecopsychology is a relatively young type of psychology, which explores the psychological dimension of the relationship between humans and the natural environment and attempts to treat phycological issues by bringing people closer to nature (Davis J. , 1998).

On the other hand, a utilitarian point of view characterising the human-nature relationship it is also stated in the Quran: "The one who cultivates the earth will be rewarded." (Quran 3:513). Acknowledging such cultural environmental values is particularly imperative in Kuta due to the fact that Kuta is a relatively poor area with high seasonal unemployment rates due to the distinct surf seasons (Schwidder, 2016). A utilitarian view is believed to be highly apparent in poor areas, since high unemployment and poverty levels can result in increased dependence on inexpensive resources, such as plastic, for economic, social, and cultural purposes (Nili, 2019).

In the light of this socio-cultural background, there is a lack of research concerning the connection between Muslim children and nature, although several academic sources point out the difficulties for Muslim girls in engaging with the natural environment through swimming (Limoochi & Le Clair, 2011; Evolvi, 2019). Limoochi and Le Clair (2011) mention that it is difficult for Muslim girls and women to swim in Burka's. According to Limoochi and Le Clair (2011) girls and women do not engage in activities at the beach due to uncomfortable situations entailed by burkas. For this reason, the 'burkini[3]' was designed by Aheda Zanetti, a Lebanese-born Australian fashion designer, in order for Muslim girls and women to engage in activities at the beach without physical discomfort (Limoochi & Le Clair, 2011).

2.2 Children's Perceptions of the (Marine) Environment

Early childhood learner's environmental attitudes towards marine pollution have not been researched with much frequency. Nevertheless, a number of international quantitative and qualitative studies have examined and explored children's perceptions of the natural environment and natural aspects within their neighbourhoods. These studies found that children perceive nature as a significant factor in their lives, associating the natural environment with both positive and negative outcomes (Simmons 1994; Wals 1994).

In a qualitative research project carried out by Wals (1994), children's perceptions of the natural environment were explored in four primary schools located in Detroit, USA. Wals (1994) found that the children ascribed meaning to the natural environment through their own experience of nature. The participants articulated eight experiences of nature as: a place for entertainment, a place for reflection of the romantic past, background to activities, a place to reflect or think, a place for learning, a challenging place, a threatening place, and a place that is threatened. In Wals' (1994) study, especially the perception of nature being a threatening place was a recurrent topic. The children in this study emphasised the fact that they feel unsafe in the community, restricting them from discovering and exploring nature. This finding in Wals' (1994) study is consistent with several other studies (Phenice and Griffore 2003; Evans et al. 2007a; Evans, Juen, Corral-Verdugo, Corraliza, & Kaiser, 2007b; Adams & Savahl, 2017), in which nature is perceived as both a fascinating and a threatening place.

Research from Hartley, Thompson, and Pahl (2015) examined British schoolchildren's (aged 8-13 years) understanding of marine littering and their self-reported actions. They also tested the impact of an educational intervention. This study found that children were concerned about marine litter and signified several causes and impacts of marine litter. The children in this research project also mentioned a willingness to take a number of actions to help solve the problem. After the learning activity, the children had a better overall understanding of the negative impacts and causes, were significantly more involved and concerned, and reported actions to reduce the impact of marine pollution.

Furthermore, Bonnett and Williams (1998) investigated children's conceptions of the environment amongst children who were at the end of their primary school education. Bonnett and Williams' (1998) study found that the children had strong concern towards nature and the environment. Furthermore, the children saw nature as an aspect that is separate from life and yet, they felt like they

[3] A swimsuit designed for Muslim women and girls to engage in activities at the beach. This swimsuit covers the same areas that are covered with a burka and consists of light-weight thin material (Limoochi & Le Clair, 2011).

were part of nature to some extent. The children associated nature with wilderness and freedom. Natural places were perceived as an escape from the ‘normal busy life’ (Bonnett and Williams, 1998)

Moreover, the children in the study of Bonnett and Williams (1998) showed empathy towards trees and animals, and expressed strong protective feelings towards these aspects. A strong urge for humanizing regarding their relationship with aspects of nature also appeared. This arose from a notion that the life of living things, such as animals and plants, have aspects in common with humans and therefore deserve equal consideration to the life of humans and is of intrinsic worth. However, although the children in this study were aware of potential conflicts of interest between human needs and nature preservation, this awareness was perceived abstract, with little attention to possible causes and solutions (Bonnett & Williams, 1998).

According to Bonnett and Williams (1998), the understandings of the children regarding environmental issues tended to be holistic and emotionally charged. Bonnett and Williams (1998) even called it 'syncretic', since the children often did not differentiate different strands of interconnectedness within their overall general conceptions. The aesthetic qualities of nature were not mentioned by the children in this study, although they might have been implicitly mentioned to some extent in the description of natural environments as being 'peaceful' (Bonnett and Williams, 1998).

However, due to the complex interplay of environmental or cultural factors, perceptions regarding the environment can differ between countries. In a survey carried out in 2008, children (aged 5-13 years old) from Italy connected the sea with positive feelings (e.g. “the sea gives me dreams”, “the sea is funny”). To the contrary, children from the UK ascribed negative thoughts to the sea (e.g. “the sea is dark”, “the sea has dangerous animals in it”) (4SEAS, 2010).

Whilst numerous studies researched adult’s environmental attitudes and behaviour in the international literature (Steel, 1996; Chawla, 2002; Broom, 2017), there is a lack of studies exploring children’s perceptions in low-socio-economic status environments (Evans, et al., 2007a). An exception is the qualitative study of Adams and Savahl (2015), who studied the way in which adolescents (aged 13-14) in South-Africa perceive nature. Adams and Savahl (2015) found that some children showed signs of indifference towards environmental pollution. This notion of emotional non-involvement could turn into a ‘culture of inconsideration’ according to Adams and Savahl (2015) and could explain a lack of environmental preservation and care for the environment by community members. This ‘culture of inconsideration’ can be associated with the ‘shifting baseline theory’ or ‘shifting baseline syndrome’ (Soga & Gaston, 2018). The shifting baseline syndrome refers to the loss of knowledge about the state of the natural world. In this situation, individuals do not have an accurate conception of how much of the natural world has been degraded due to the fact that our ‘baseline’ shifts with every generation. Marine pollution could therefore be perceived as ‘part of the environment’ (Soga & Gaston, 2018).

Studies have also found that humans have higher preference, visual detection, and superior recall of animals compared to plants (Sundberg, et al., 2002; Balas & Momsen, 2014). This phenomenon is referred to as 'plant blindness' by Wandersee and Schussler (1999; 2001). Nyberg, Brkovic, and Sanders (2019) found, however, that the participants in their study (aged 8-16) showed appreciation for both animals and plants when provided the opportunity to state their favourite animal and plant. It is therefore suggested by Nyberg et al., (2019), that the way in which children perceive plants is often based on pre-existing experiences with plants in their early childhood instead of an ‘inability’ of children to see plants and perceive plants as important.

2.3 Children's environmental Attitudes and Behaviours in Environmental Education

An attitude is a learned tendency to evaluate aspects in a particular way and refers to a range of beliefs, emotions, and behaviours toward a certain event, object, or person. An attitude is often the result of experience and can potentially influence behaviour (Kurisu, 2015).

When it comes to environmental conservation, environmental education (EE) is often considered a key aspect, believed to increase knowledge (Vaughan, Gack, Solorazano, & Ray, 2003; Otto & Pensini, 2017; Maurer & Bogner, 2020), causing environmental attitudes to improve (Aipanjiguly, Jacobson, & Flamm, 2003), and to potentially even change behaviour. The way in which EE affects behaviour specifically is, however, a challenging concept to research, because of the uncertainties surrounding the effect of socio-cultural factors on behavioural expression and psychological determinants of behaviour (Ajzen, 1991). Keen (1991) revealed, for example, that an education programme, called 'Sunship Earth', increased the ecological knowledge of children but did not increase more positive environmental attitudes. Nevertheless, although a causal relationship has not yet been proven, an association has been found between receiving EE and changes in the level of knowledge, attitudes or behaviours (Bride, 2006; Otto & Pensini, 2017; Liefländer & Bogner, 2018).

Environmental attitude (EA) is an important aspect of the human-environmental relation and is described by Hines, Hungerford, and Tomera (1987) as the feelings, with some degree of favour or disfavour, regarding particular aspects of the ecological environment. EA can be divided into two main levels: general environmental attitude and attitude toward the pro-environmental behaviour (PEB). General environmental attitude is usually considered to be of environmental concern, which represents the actor's concern with regard to environmental problems. Attitude towards the pro-environmental behaviour is the actor's specific attitude toward the target behaviour. It represents whether an actor recognises pro-environmental behaviour as positive or negative (Hines, et al., 1987). In this thesis, the focus is laid upon both levels.

Understanding the attitudes and behaviours of children is crucial as they represent current and future actors and a potentially important source of social influence among their peers, parents and community. Whilst children may not have direct control over purchasing and disposal behaviours, indirect influence via parents and other adults may be highly effective. Research on environmental education and intergenerational learning indicates that children can influence the environmental knowledge, attitudes and behaviours of adults in various domains (Ballantyne, Connell, & Fien, 1998; Damerell, Howe, & Milner-Gulland, 2013; Straub & Leahy, 2017).

To effectively address environmental problems, a thorough understanding of the extent to which individuals hold certain attitudes needs to be acquired, that might cause or avoid behavioural intentions to display pro-environmental behaviours (Kaiser, Ranney, Hartig, & Bowler, 1999; Martin, et al., 2020). Overall, preservation attitudes and utilization attitudes are necessary to dissect when it comes to environmental attitudes. Preservation attitudes prioritize preserving the natural environment and the diversity of flora and fauna, attempting to oppose human alteration and the general negative influence of human beings. In contrast, utilization attitudes foster the right and necessity for flora and fauna to be utilized and altered for human gains. These two opposing attitudes are intertwined with sustainability, since environmental sustainability implies that it is necessary for humans to utilise the earth's natural resources for human survival. However, at the same time, the environment also needs to be protected for the same reasons (Milfont, 2007; Le Grange, 2019).

Previous research suggests that children are aware of various environmental problems, such as pollution, litter, and hazardous waste, but have difficulty understanding the causes of and solutions to environmental issues (Cohen & Horm-Wingerd, 1993; Kahn & Lourenço, 2002). There is also evidence that children worry about environmental issues and tend to report behaving in an ecologically responsible manner (Evans et al., 2007a).

Overall, children's littering behaviour can be influenced for numerous reasons, such as: unwillingness to search for a suitable way for disposal, perceiving the item as not being litter, a lack of social pressure to preserve and respect public areas, a lack of knowledge concerning the environmental impacts of littering, social rebellion, the site being already littered, and placement and/or number and

appearance of garbage disposal facilities at a particular site (Kapoor, 2001; Hasan, 2004; Santos, Friedrich, Wallner-Kersanach, & Fillmann, 2005).

Kahn and Lourenco (2002) examined children's moral reasoning about environmental problems, including the impact of throwing garbage into a local river. Findings of Kahn and Lourenco (2002) suggest that Portuguese children (aged 6-8) display anthropocentric moral reasoning (i.e., that polluting the environment affects humans). Children from the age of 11 showed a more biocentric attitude, by understanding the intrinsic value and rights of nature. Kahn and Lourenco (2002) indicate, however, that whilst adolescents and young adults may be capable of biocentric reasoning, they may seldom employ it. The persistent problem in this field is, nevertheless, that awareness and concern about environmental issues alone is often ineffective unless it can be translated into action.

An important aspect to keep in mind here, is that within ESD especially, children are often directed towards to becoming 'moral agents'. Ideland and Malmberg (2015) have researched this concept and analysed how 'eco-certified children' are constructed as desirable participants in teaching materials addressing education for sustainable development. Ideland and Malmberg (2015) advocate that pastoral power is used to govern human beings, through their souls. Living sustainably through new technologies is governed as contributing to ´´the good´´. Opposing sustainable development is governed as betrayal of 'Mother Earth's' eco-system (Ideland & Malmberg, 2015). In ethics education, this transgressive picture of what it means to be a moral agent, is far too often implemented in class according to Biesta (2015).

3. Theoretical Framework

This chapter presents the theoretical framework that is used in this thesis and provides grounds for justification of these choices. This chapter consists of three sections. In section 3.1 the social-cognitive theory is outlined. In section 3.2, techniques for interpreting drawings and narratives are described. Finally, in section in 3.3 Kellert's theoretical framework for categorizing environmental attitudes is explained.

3.1 Social-Cognitive Theory

The social-cognitive theory provides a useful base from which to explore environmental perceptions and attitudes, according to Sawitri, Hadiyanto, and Hadi (2015). The social-cognitive theory was firstly coined by Bandura (1989) as a Social Learning Theory (SLT).

According to the social-cognitive theory, both personal factors and environmental factors play a role in shaping behaviours (Phipps, Ozanne, & Luchs, 2013; Bandura, 1989). Personal factors refer the processes shaped by one's values, beliefs, and perceptions. When it comes to waste disposal behaviours, personal factors might include perceptions about the main cause of the problem and perceived ability to implement effective solutions (Bandura, 1989).

Environmental factors include sociocultural and physical contexts that influence behaviour, such as social norms, situational influences, or infrastructure (Bandura, 1989; Phipps et al., 2013). Yet, behaviour is not merely an automatic output determined by personal and environmental factors (Bandura, 2001). Instead, human agency is a central component of social-cognitive theory, meaning behaviours are intentional actions that include complex interplay between context-specific influences, encompassing past behaviours (Bandura, 2001). This means that, personal, environmental and behavioural factors are mutually determinant, and interact in shaping behaviours and actions (Bandura, 1989; Phipps et al., 2013). Social-cognitive theory is drawn upon for this study since it involves the complexity of the environmental decision-making process of the participants.

3.2 Interpreting Drawings and Narratives

Numerous research techniques have been utilised to analyse children's thought process about the natural environment, including interviews and questionnaires (Grreaves, Stanisstreet, Boyes, & Williams, 1993), analysing responses to photographs (Dove, Everett, & Preece, 2000), and word-association exercises (Anderson & Moss, 1993). In addition to these techniques we can also find the interpretation of drawings (Trend et al., 2000).

The interpretation of children's drawings has a lengthy and honourable background, with its roots mostly being in the fields clinical therapy and psychology. The extent to which outcomes are exclusively dependent on children's use of either drawing or narratives is a relevant issue here. Present research suggests that the one informs the other and that, for this reason, the interpretation of children's drawings is more reliable when combined with children's narratives (Hope, 2013).

Malchiodi (1998), stresses the importance of the combination of children's drawings and narratives too. Malchiodi (1998) advocates that this combination allows for a certain openness to emerge, towards range of possible interpretations. Each drawing should be interpreted as a unique piece, influenced by both transient and permanent factors. Simply asking the children questions regarding their drawings stimulates the children to provide explanations beyond the obvious content of the drawing.

Drawings and interviews were utilised to investigate perceptions related to forests of 6-year-old primary school children in a research project carried out by Strommen (1995). However, Strommen (1995) found that such studies are possible of limited value in revealing children's perceptions towards nature, since children use their imagination constantly and extensively. Some children drew animals (e.g. cheetahs) that do not live in the forests in question.

Furthermore, Trend, et al., (2000) categorised children's conceptions of a natural environment (mountains). In this study, drawings of mountains, created by primary school children (aged 7-11), were

examined. Trend, et al. (2000) categorised the content of the drawings by environmental elements (sand, water, people, and trees), and for human elements (people and buildings). This is an indictive approach, with the range of elements arising from the drawings and each drawing generating a different profile.

Trend, et al. (2000) found that the children view mountains as secure, accessible and welcoming natural environments, populated by humans engaged in a range of enjoyable activities as well as non-threatening animals. Trend, et al., (2000) also found, however, that research based solely on the interpretation of children's drawings is shown to be problematic and somewhat unreliable, since interpretation is done by the researcher. Additional interviews to gather children's interpretations of the symbols of the drawings.

3.3 Measuring Environmental Attitudes

Environmental attitudes (EA) are latent and complex constructs and cannot be observed directly. Instead of being measured directly, attitudes have to be interpreted from responses (Himmelfarb, 1993). The techniques of attitude measurement can be organized into direct self-report methods and implicit methods (Krosnick, Judd, & Wittenbrink, 2005). Studies measuring EA have generally used direct self-report methods (e.g., interviews and questionnaires), and much less frequently implicit methods (e.g., observation), due to the fact that self-report methods are allowing participants to narrate personal experiences instead of inferring answers from observing participants.

Kellert (1985) developed nine types of environmental attitudes to describe the broad range of approaches to animals in the society of the Unites States (see table 1). In column 1 of table 1 you can find the attitude value. Column 2 displays the relevant question for data interpretation concerning the value.

Table 1

Attitudes towards animals

Category	**Attribute**
Aesthetic	Value given to the artistry, symbolism, and beauty of animals
Dominionistic	Concern for the environment as a system, for interrelationships between wildlife species and natural habitats?
Ecologistic	Interest in the mastery and control of animals
Humanistic	Strong interest in and affection for individual animals, principally pets
Moralistic	Concern for the right and wrong treatment of animals, with strong opposition to exploitation or cruelty
Naturalistic	Interest in and affection for wildlife and the outdoors
Negativistic	Avoidance or killing of animals related to indifference, dislike, or fear
Scientistic	Interest in the physical attributes and biological functioning of animals
Utilitarian	Practical and material value of animals given importance

Note. Reprinted from ''Toward animals: Age-related development among children'', by Kellert, S. R., 1985, *The Journal of Environmental Education, 16(3),* p. 48.

Kellert (1985) developed these categories to describe attitudes toward animals, but the categories are also useful in understanding broader attitudes towards the environment. Table 1 has been adapted and used for this research (see appendix 2 and appendix 4). This is further explained and outlined in the method chapter of this thesis.

4. Method

In this chapter, the method for carrying out the research is described. Relevant topics, such as the participants, research instruments, data collection, data analysis, account for participation and collaboration, and ethical and methodological considerations are thoroughly discussed in this chapter. The aim of this study was to investigate early childhood learners' perceptions of the marine environment and their environmental attitudes towards marine pollution through an educational intervention consisting of a drawing exercise and an in-class discussion.

4.1 Data Collection

In this research project, early childhood learner's perceptions towards the marine environment and environmental attitudes in relation to marine pollution are researched by collecting qualitative primary data through children's narratives of self-created drawings and an in-class group discussion. Since children's personal environmental perceptions and attitudes are sought in this study, qualitative data gathering can be considered appropriate, allowing for underlying reasons, patterns and perceptions (i.e. environmental attitudes) to be detected (Bryman, 2012).

The research for this study was carried out at two primary schools in Kuta, Lombok, Indonesia. The main reason for choosing Indonesia as a research site, was that several studies reported that Asian nations, especially China, Indonesia, the Philippines, Thailand and Vietnam, are contributing significantly to marine pollution (Coleman & Wehle, 1984; Sigler, 2014; Jambeck, et al., 2015). Seen the fact that I am based in Indonesia, it seemed therefore feasible to carry out this research in Indonesia.

4.1.1 Participants

In total, 10 schoolchildren, aged 5 to 8 years old, participated in this research project. Two primary schools in Kuta were selected. The selection process of the schools was based on the fact that in Kuta only two primary schools exists. These schools each have 6 grades with 1 class per grade. Every class consists of 20 to 25 children, totalling about 120 to 150 children per primary school. Grade 1 consists of children aged 5-7. Grade 2 consists of children aged 7-8. Grades 3 until 6 are made up of children aged 8-12. Only early childhood learners from grade 1 and 2 were selected for this study. Early childhood learners are generally aged 3 to 8 years old (Punch, 2002). However, since children in Indonesia start school at the age of 5, children aged 5 to 8 were selected. The choice for early childhood learners is based upon the fact that children start developing attitudes and agency in their early childhood (Punch, 2002).

The sample was selected based on specific criteria, referred to as purposive sampling by Bryman (2012). All participants were: early childhood learners (1), aged 5-8 (2), and attending classes at a primary school in Kuta (3). The number of children attending the learning activity was not larger than 5 children per group to ensure feasibility of the research. The 10 participants that were eventually selected from grade 1 and 2 from every school were chosen randomly by the teacher.

4.2 Research Process and the description of Instruments

4.2.1 In-class Learning activity: Children's Drawings and in-class Discussions

Two in-class learning activities were organised at two different primary schools in Kuta, to research early childhood learner's environmental perceptions and attitudes. These learning activities were organised by me. I went to each school, explained my research project, and asked if a learning activity could take place at their school. After having explained the specifics, both schools accepted my request.

Each learning activity took 60 minutes (1 lecture) and consisted of a drawing activity and an in-class discussion. The drawing activity as well as the discussion took approximately 25 minutes. In between the drawing activity, there was a ten-minute break. The children had not previously have not been exposed to any kind of environmental education and were not told the specifics of the study. The children were asked to draw the 'marine environment' according to their own perception of this environment. During the process of drawing, I came by their desks one by one and asked them what they were drawing, which triggered narratives.

A professional independent translator, Jan Hairil Anoar, was hired to attend the in-class learning activities at both schools. During the drawing activity, the translator joined me to listen to the narratives of the children. The translator directly translated the narratives from Indonesian to English, while I wrote down as much as possible in English. The translator and I sat down together in the 10-minute break after the drawing exercise to discuss the responses of the children and to complete the transcript.

After the break, photos of polluted beaches and seas (se appendix 3), printed on A-6 paper (clear enough to see from the seats of the children), were hung up on the white board. I then posed a non-leading discussion question regarding marine pollution (see appendix 2), to start the discussion. The translator translated my question slowly into Indonesian in front of the class in order for the children to understand the question thoroughly.

4.2.1.1 Children's Drawings

In numerous studies, children's drawings have been used for discovering young children's views and experiences (Barraza, 1999; Flowers, Carroll, Green, & Larsonet, 2015; Madden & Liang, 2017). In research with children, drawings can instigate a non-verbal expression of a situation or environment and can encourage children to be active and creative while they draw. Most children are familiar with the activity of drawing and can alter and add to the drawings how they want (Madden & Liang, 2017).

In the book called 'Thinking and learning through drawing: In primary classrooms' Hope (2008) explains that drawing is a powerful means of learning and thinking. Hope (2008) further explains that

> the act of drawing is so powerful that educators may be severely limiting children's ability to think and model complex relationships by not teaching them to draw. The increased pressure on children to be proficient users of written language rather than any other form of communication may be hampering children's ability to think, imagine and reason for themselves. Drawing can provide the tools for thinking, modelling and communicating ideas, concepts, understanding and emotion. It can do so swiftly and efficiently. It can be assigned meaning yet remain open and ready for change. It can make comment through humour, irony and satire. It can move, inspire, speak to the innermost thoughts and feelings. It can model abstract mathematical relationships and communicate complex scientific ideas. To deny children access to this power, simply through neglect, is to deny them a means to contribute to the ongoing creation of human innovation. (p.175)

In addition, drawings often take some time to create, which allows for a more complete thorough depiction of thought where a quick response is not required (Parkinson, 2001; Punch, 2002). Drawings provide visual data that can give insight into how children view certain matters. Several disadvantages of drawing as a data-gathering method have, however, occurred, such as imitating the drawings of others and disliking drawing as an activity (Parkinson, 2001).

In groups, the children who participated in the study were asked to draw pictures of a marine environment. During the drawing process, the participants were asked what they are drawing, including

other relevant questions (appendix 2). Replies were written down for data analysis and complemented together with the translator after each learning activity. Emphasis was placed on listening to children while they draw, instead of attempting to interpret the drawings by myself without additional narratives. This was important, as the children's narratives concerning their own drawings can provide a more accurate reasoning behind the drawing, which, in turn, contributes to a more accurate analysis (Punch, 2002).

4.3 Data Analysis

In this section of the thesis, the method for analysing the acquired data is clarified. The first part, section 4.3.1 to 4.3.2. explains what type of data is collected and how this data is collected. In the second part, section 4.4 to 4.7, the challenges, limitations, risks and ethical considerations are described.

4.3.1 Narrative Analysis

The children's oral descriptions of their drawings, as well as the the in-class discussions, were analysed through a narrative analysis. A narrative analysis focuses on the ways in which people tell stories to interpret the world (Frank, 2002). In retelling events in narratives, the tellers (interviewees) directly or indirectly provide their own narratives and explanations of events and symbols and thereafter evaluate, according to their own terms, the main protagonists and others appearing in narratives, the meaning of events and wider relevant contexts (Bryman, 2012). Seen the fact that children's attitudes, and herewith their perceptions, underlying thought and narratives, towards the marine environment as well as towards marine pollution were requested, a narrative analysis seemed appropriate for analysing this data.

The narratives of the children's own drawings and the responses and narratives during the discussions, were then coded through several stages. The first step in the data analysis was to code the data from the narratives regarding the drawings. The coding practice 'open coding' was firstly utilised. Open coding is defined by Bryman (2012) as ''the process of breaking down, examining, comparing, conceptualizing and categorizing data'' (p. 569). Prior to thoroughly analysing the data obtained from the interviews, I read the noted text of the children's narratives once, while highlighting specific repetitive and relevant words or sections of the text. Thereafter, I read the text again to ensure no relevant information was missed. After this, the relevant data was categorised, and patterns were detected. This coding practice was repeated to code the data from the in-class discussion.

4.3.2 Content Analysis

Two different content analyses were used to further analyse the content of the drawings and the content from the in-class discussions. A content analysis can be defined as a method for analysing any form of content by counting aspects of the content. This method enables a more objective evaluation of the data (Elo & Kyngäs, 2008).

The first content analysis that was use in this study, was inspired by the content categorisation of Trend, et al. (2000), described in section 3.2. Representations of the marine environment were analysed for content by environmental elements (e.g. sand; water; people; trees), and for human elements (e.g. people, buildings). This approach being essentially inductive, with the range of elements arising from the drawings or from comments in the in-class discussions. Each drawing generated a different profile based on the environmental elements and the human elements. A third category was added by the researcher, named 'symbols associated with animals', to analyse the children's care for animals, an important aspect seen the fact that ocean life is severely impacted when it comes to marine pollution (Hartley et al., 2015).

4.3.3 Analysis of Environmental attitudes

All data was also scanned in order to detect signs of elements belonging to environmental attitude categories towards marine pollution. For this, the theoretical framework presented by Kellert (1985) was elaborated on, described in section 3.3. The value categories that were used consisted of: aesthetic value, dominionistic value, ecologistic value, humanistic value, moralistic value, naturalistic value, negativistic value, scientistic value, and utilitarian value. The narratives concerning drawings and the outcomes from the group discussion were thus scanned for these 9 different attitude values (categories).

4.3.4 The Social-Cognitive Theory

The social cognitive theory, described in section 3.1, is also drawn upon in the current study. All findings were labelled as either 'personal factor(s)' or 'environmental factors'. (Bandura, 1989). These labels are also indicated per research question in the discussion section of this thesis. The first research question (*How do early childhood learners in Kuta, Lombok perceive the marine environment (beach and sea)?)* addresses personal factors, shaped by one's values, beliefs, and perceptions. The second research question (*How can the human-nature relation/connection between early childhood learners and the marine environment (beach and sea) be characterised?*) shows results regarding environmental factors, which include sociocultural and physical contexts that influence behaviour, such as social norms or situational influences. The third research question (*What environmental attitudes do early childhood learners in Kuta, Lombok, have towards marine pollution?*) addresses both personal and environmental factors.

4.5 Limitations and Demarcation

The sample in this research does not represent all early childhood learners Indonesia, however, it does provide an example and can be useful in understanding how early childhood learners understand the marine environment and marine pollution. Instead of generating results that are applicable for the rest of the population, this research aimed to provide an in-depth understanding and therefore targeted a specific group, commonly done in qualitative research (Bryman, 2012).

A second limitation in this research is the lack of resources required to research children's perspectives and attitudes in different areas in Lombok, how these perceptions and attitudes develop over a longer period of time, or compared with different age groups in order to provide a more complete picture concerning this matter.

4.6 Ethical Considerations

The Swedish Research Council (2017) established ethical guidelines which are expected to be carried out during field research by all Master students in Asian Studies. This guideline specifies how data collection during field research ought to integrate ethical considerations such as transparency, anonymity, free will, and confidentiality (The Swedish Research Council, 2017). And I followed this advice.

Ethical matters, including informed consent, access, relationships, confidentiality and protection, are fundamental in all research, but when researching children these might take on an additional substance (Einarsdóttir, 2007). In researching early childhood learners' perceptions towards the marine environment and environmental attitudes towards plastic pollution, I have to keep the ethical considerations in mind that belong to this target group specifically.

First of all, children are potentially more vulnerable to unequal power relations with the adult researcher than other target groups. In the case of this research project, unequal power exists in terms of age, status, cultural privilege, competency and experience. In some cases, certain children might not be accustomed to adults who are interested in their perceptions and who ask for their opinion. These children may perceive the adult researcher (me) as an authority figure to 'obey', and consequently might try to please me out of fear of my reaction when they do not provide a 'desirable answer' (Coyne, 1998; Balen, Holroyd, Mountain, Wood, 2001).

The power difference caused by the different positions, experiences and competencies of the child and me as an adult researcher is an apparent and constant challenge throughout this research project. The research is my initiative, and it is me, as an adult, who chose the research topic. The children involved in this project rarely have an opportunity to contribute to the research plan or the research process. For this reason, Einarsdóttir (2007) advocates that when children's consent is obtained and data is gathered from children, it is crucial to find ways to empower the children, so their real perspectives surface. Besides deriving data, the interpretation of research results is also my hands as a researcher,

and therefore it is important to continuously ask myself whether I am certain that my understanding reflects the children's ideas, experiences, and actions. It is also of importance to constantly consider the ethical dimensions of the research, which should question what I am doing and search for the limitations of the methods and interpretations in an attempt to accurately present what the children are doing and saying. Creating an atmosphere that invites empathy and trust where children can be comfortably vulnerable, in order to open up their minds and be perceptive towards others is of importance here (Wals & Peters, 2017).

4.7 Methodological Considerations

As a researcher, it is important to allow for sufficient personal reflexivity before deriving data for this research project. Reflexivity explores the awareness of the ''necessary connection'' between the researcher and the research situation including the researcher's effect upon the situation (Bryman, 2012). In Indonesia, a Caucasian person is called a 'Bule'. The literal translation of this is 'albino'. Some Indonesians indicate that 'bule' is a neutral word, referring to a Caucasian white person, which can have positive or negative meanings attached to it. Others maintain that 'bule' is a functional word, i.e. a way to describe a white foreigner (Oktadiana & Pearce, 2017). When walking into one of the schools in Kuta, children started yelling 'bule, bule' and laughter arose. It remains uncertain to me as a researcher whether positive or negative meanings were attached to the word 'bule'.

Nevertheless, this did raise awareness concerning reflexivity in my research project. What difference does it make that I am a young, white, female, western interviewer, interviewing Indonesian, Muslim, young children about their environmental perceptions and attitudes? Regarding the difference in age, I as a researcher should be aware of the difference in development between the participants and me. These matters are of importance, given the fact that the interpretation of results still allows for a certain level of subjectivity.

Although having lived in Indonesia for several years and having learned about the Muslim religion and societal relations, when talking to an Indonesian, Muslim child, potentially from the margins of society, it is of importance to be conscious and alert, since Muslim societies, social constructions and perceptions are constructed differently than in western societies, in which I was raised and spent most of my lifetime in while constructing a personal world views. For example, as a researcher, I might view aspects such as swimming in the sea as an activity that is 'common', entailing enjoyment. Swimming in the sea might, however, not be seen as 'common' in the Islam culture due to societal norms entailed by that culture.

To diminish the risk of biased interpretations, the results were discussed with the Indonesian Muslim translator and scholar, Jan Hairil Anoar, who grew up in an Indonesian Muslim family himself and who assisted during the learning activities. Although this, in turn, could influence research results, I argue that discussing the results with Jan Hairil Anoar was useful is understanding more about societal norms entailed by the Muslim religion in Kuta.

Furthermore, although the children and I do not share the same identity, we do share affinities that help the interviewee and I have some common ground (Haraway, 1991). One of these commonalities is the fact that the participants and me were brought up in a coastal area with an abundance of flourishing flora and fauna (beaches, ocean, trees, grass, and wildlife). Another commonality is having experienced the same age at some point in our lives. Cultural, social, and educational distance nevertheless remains apparent.

In addition, when interpreting drawings and narratives, it is also of importance to correctly interpret the concept and its word label, due to the risk of attaching incorrect importance to children's utilization of a given term. This is a difficult aspect, since the link between grasping what is understood by the child and the referring term used by the child may be difficult to elucidate (Trend, et al., 2000).

4.8 Account for Participation and Collaboration with Others

The children were provided with information in their native language concerning the nature of this study to allow them to make an informed decision concerning participation in the learning activity. This information was verbally explained a few days before the learning activity took place and was repeated just before the learning activity started. The purpose of the research was explained, as well as what the research involved, what was going to happen in which order, how long every component would take and how the data and the results would be utilised. This way, it was made clear what exactly was to be expected of them. The children were also notified that participating is not obligatory and that they were allowed to withdraw at any time.

When conducting research involving children, collaboration with gatekeepers also needs to be considered. These gatekeepers are in most cases an adults, who decide if the children are provided with the choice to decide if they want to participate or not (Hope, 2008). When research is conducted involving primary school children, the gatekeepers include teachers, parents, principals, and the school authorities. The parents and other gatekeepers were informed about the purpose of the study, the learning activity, the way in which the data would be used, and the voluntary nature of the study. This information would enable the gatekeepers to make an informed decision concerning the participation in the learning activity. The children's parents were presented with a parental form of consent (appendix 1), which they were asked to thoroughly read and voluntarily sign. This form was given by the teacher to the parent that came to pick their child after school. To avoid misconceptions due to illiteracy and other factors, the teacher explained the details of the study and the voluntary nature of participation when handing over the forms. The parents were asked to fill in the form and bring it back within three days when dropping off their child. All the parents agreed upon the participation of their child.

During my first visit to the schools, the responsible teachers and the headmaster were notified verbally that they could choose to say "no", if they did not want the research to be carried out at their school. However, the headmaster and responsible teachers of both schools in Kuta agreed on the research project as they viewed it as an opportunity for their pupils to learn.

Besides informed consent, it is important to critically study this environment that adults created for them, since children's voices reflect the environment of which they are part of (Kjörholt, 2005; Kjörholt, Moss, Clark, & Clark, 2005).

4.9 Closing Comments

Despite the numerous ethical challenges entailed by research with children, the aim of this research is to contribute to the children's welfare in both the short and the long term, either directly or indirectly. If these aims are accomplished, research with children in which children's perspectives can give valuable information and contribute to future research, policy, individual situations and education for sustainable development. However, research with children is a delicate process that raises many methodological and ethical questions. Balance between participation and protection are, for instance, are dilemmas that one faces when researching young children. Broström (2005) has addressed such ethical questions and suggested that perhaps adults should distance themselves from the children instead of trying to enter their world and secret spaces, since children's right to protection and are more important than deriving new data and new insights concerning teaching. This stand is well worth considering within the delicate process of obtaining information from young children.

5. Results

In this chapter of the thesis, the main results are outlined. The first part of this chapter displays the results of the children's drawings, analysed by using a content analysis and a narrative analysis. The second part shows the results of the in-class discussion about marine litter that took place after the drawing exercise. The third part displays the results regarding the analysis of all data regarding the children's environmental attitudes.

5.1 Drawings of the Marine Environment

5.1.1 Narrative Analysis

The narrative analysis was used for the children's narratives of their own drawings and for the in-class discussions (see method section 4.3.1). In this section, the outcomes of the children's narratives of their own drawings are displayed.

First of all, the children in this study perceived the beach as a place meant for recreation, such as family picnics, scooter rides and barbecues. The beach is seen as a place suited for consumption. Numerous children talked about consuming their favourite food at the beach and explained why this kind of food is so tasteful.

The sea was often described as a dangerous part of the marine environment, being something to be careful of. However, the usefulness of the sea for catching fish was regularly stressed, being a good source for food supply (fish). Especially fish barbecues seemed to be popular amongst the children in this study.

Although the children in this study do not restrict themselves from eating fish, they do to some extent empathize with the fish. The right of a fish to have a house was mentioned, as well as the opinion that not all fish should be killed for consumption. The children showed signs of selectivity when it comes to empathy towards preserving (sea)life. Children mention that aspects such as the size of the animal and, kind of animal, and the level of perceived beauty of the animal determine whether the animal matters and/or have the right to live a 'good life' before being consumed by humans. Plants are considered less important compared to animals.

This study also found that it is viewed as uncommon and undesirable for girls to swim in the sea. Girls experience negative consequences when they wish to swim in the sea, such as punishment from their dad. In addition, when their burka gets wet, they are not allowed to take it off and are obliged to walk around in wet clothes for the rest of the day. To the contrary, the male family members engage in activities such as swimming, fishing, and surfing.

Finally, this analysis found that animals were sometimes depicted in an incorrect manner. For example, a goat going for a swim in the sea or the notion of having seen a whale near the shore (whales do not appear in this area).

A place for consumption (beach)

The beach is perceived by 8 out of 10 children as a place to get together during weekends with friends and family. Consumption plays a major role in these get-togethers.

Participant 3 drew a variety of pots and pans filled with food (appendix 4, drawing 3), which together form a picnic. Participant 3 talks about picnics on the beach with her family: ''We are having a picnic here. I like picknicks. My mom makes very good food. We all sit together in the shade, because the sun is hot. And then we eat.''

Participant 2, 4, 8, 9, and 10 also mention how they organise picnics with their friends or family members on the beach sometimes.

Participant 6 drew what appears to be a little house on the (appendix 4, drawing 6). Participant 6 states: ''That is a 'warung' (restaurant). I eat there usually when I go to the beach with my friends.''

Participant 5 drew fire with people standing around it (appendix 4, drawing 5). He enthusiastically talks about the fish barbeque on the beach: ''Me and my family are having a fish barbeque. We do that sometimes on the weekend. My dad will catch fish and then we grill it. It is very tasty. I use a lot of sambal sometimes.''

A place recreation (beach)

This study found that 3 out of the 5 male participants in this study mention riding their scooter on the beach sometimes. Participant 6 drew a scooter with himself on it. He explains, passionately, how he drives the scooter of his uncle on the beach sometimes:

> My friends and I drive on the beach sometimes, with a scooter. I love driving. My friend showed me how to do it. I am really good at it now. After we have a lot of fun, we eat nasi goreng (fried rice) on the beach. I love the beach.''

Participant 4 did not draw a scooter or the activity of driving around on a scooter on the beach in any way. He did, however, talk about the fact that he sometimes sits on the back of the scooter while his brother is driving. The fumes that come from the scooter do not bother him: ''I also sometimes drive on the beach with my brother. I tell him go faster, go faster. My brother can drive really fast. The scooter is a bit smelly, like petrol. But it is OK.''

A dangerous place (sea)

This study found that 7 out of 10 children described as the sea 'dangerous' or 'threatening'.

Participant 7 drew an angry looking fish (see appendix 4, drawing 7). She stated: ''That is a fish that will bite you. There are lots of fishes like that in the sea. You better stay away from the sea.''

Participant 1 drew shark fins popping up from the sea (see appendix 4, drawing 1). Similar to participant 7, participant 1 also views the sea as a dangerous, threatening place, he explains:

> Those are sharks. My dad says there are sharks in the sea. I do not know, because I never go swimming. Just sometimes. So, I do not know if there will be sharks. But I believe my dad. He is a fisherman. But he should be careful too my mom says. The sea is just dangerous.

A place for fishing (sea)

In this study, 4 out of the 10 children drew a fishing boat. In addition, 7 out of 10 children mentioned 'fishing' when being asked about their drawing. Participant 10 drew a boat with a girl who is fishing. Participant 10 explains:

> That is me fishing. I love fishing. My dad catches fish every day. I am not sure if I can fish when I am older, because not many girls go fishing when they are older. I think it is because it is more for boys maybe.

Participant 8 also drew a fishing boat with himself fishing in it. He explains, in detail, how he perceives fishing and eating fish:

> I am fishing there [points at the boat in the drawing]. There are a lot of different fish in the sea. They have a lot of different colours. Many fish look so beautiful. I think I like to eat tuna most or mahi-mahi. I eat it with a lot of salt. I put it on the barbeque first. I really like to have my own boat someday or at least my own speer fishing gun. My older brother has a spearfishing gun. Maybe I can use it when I am older.

Selective empathy towards living things

Participant 5 drew little houses underwater for the fish. He explains how fish have the right to have a house too:

> Those are houses for the fish [points at drawing]. Fish need a place to live, like us. I know people like to eat fish. I like fish too. Fish is just so tasty. But we do not have to eat all fish. And they can have houses if they want to.

The houses that participant 5 drew looked like houses for humans, consisting of a block-shaped centre with a door in the middle and a roof on top.

Participant 9 expressed that empathy towards animals, but only those who are perceived by her as 'beautiful':

> Every fish is different, I think. My brother and my father go fishing sometimes and the fish they bring back look funny in different ways. I do not really like that the fish gets killed, but I do like to eat fish. Sometimes we eat turtle. I think we can eat fish and turtle. It is okay. Shrimp is also okay to eat. But we cannot eat the beautiful fish, like the fish with all the different colours. The parrot fish!''

Participant 4 feels that animals should have a good life before being consumed by people, but that plants play a less important compare to animals, are small and ''do not really live'':

> I really like animals, but I do not really care about plants. Plants cannot talk to each other and they do not do much. Animals can talk to each other, I think. Animals should have a good life until we eat them. Plants or underwater plants are not so important. They [plants] do not really live and they are very small.

A challenging place for girls (sea and beach)

This study found that cultural boundaries keep girls from connecting with the marine environment. The male family members are the ones fishing, surfing, and swimming in the sea. Girls have a more distant connection towards the marine environment based on culturally formed traditional gender constructs.

Participant 7 drew crosses [XX] through the waves (appendix 4, drawing 7). She explains how swimming comes with discomfort being a Muslim girl:

> I do not really like the waves. I do not want to get my hijab (burka) wet. As a girl, I cannot go in the sea without my hijab. If I get wet, I have to be wet all day until I get dry.

Participant 1 drew a surfer on a wave (appendix 4, drawing 1). He expresses the perceived privilege of boys being allowed to surf: ‘’That is a surfer. There are a lot of surfers here. Only boys, like me, can surf. Not girls.’’

Participant 3 also mentions that her brother plays in the waves sometimes, but that she does not play in the waves herself. If she plays in the waves, she might get punished by her dad. Participant 3 explains:

> My brother plays in the waves sometimes. Not me. I learned that girls should not do that. Some parents are OK with it. but they are not real Muslims. Some of the other girls did it before, but they got punished by their dad. I do not want to get punished by my dad. I do not want to cry.

Unrealistic scenario’s

Several children (4 out of 10) in this study mentioned or drew unrealistic scenarios. Participant 4 explains why he drew a goat in the sea: ‘’That is a goat. He is going for a swim. He is probably just feeling hot.’’

Participant 3 explains how she once saw a whale in the sea: ‘’I saw a big whale once when I was standing on the beach. It went up and down. There was a big splash. ‘’

5.1.2 Content Analysis

In this section, the content analysis described in section 4.3.2 was used to identify different symbols in the drawing. Each drawing generated its own distinctive profile based on symbols incorporated in the drawing that have a link to the environment (1), are associated with human occupation or intervention (2) or Associated with animals (3).

1. Link to the natural environment

All children in this study included a beach and a water (sea) section in their drawing. However, the beach section and the sea section were divided differently in the drawings. In total, 5 out of 10 children drew a larger sea section compared to the beach section, 3 out of 10 children drew a beach section and an sea section that took up an equal amount of space, and 2 children drew a beach section that was bigger than the sea section.

Moreover, 6 children did not include any vegetation on their drawing, and 4 children did include vegetation in their drawing, either on the beach or underwater. Participant 9 and 7 were the only ones including mountains in their drawing. Only participant 9 included coral in her drawing.

2. Association with human occupation or intervention

Overall, 9 out of 10 children included some kind of human intervention. Remarkably, 5 out of 10 children included boats in their drawing. Of these 5 children, 4 children included the act of fishing. Furthermore, 3 out of 10 children drew the act of consuming (BBQ, picknick) and 2 out of the 10 children included a restaurant on the beach in their drawing.

3. Association with animals

Amongst all 10 children in this study, 7 children included animals in their drawing, 3 children did not include any animals whatsoever.

5.2 In-class Discussions about Marine pollution

5.2.1 Narrative analysis

For the data from the in-class discussions, both a narrative analysis and a content analysis was used (see sections 4.3.1 and 4.3.2). This section shows the results of the narrative analysis used to extract the narratives from the in-class discussion. This analysis found that the children in this study have thoughts about marine pollution and show concern about the environment and the affected animals. Some children recognised some of the causes and impacts of the problem. Other children make indifferent remarks about the rubbish on beaches. Children also reported taking a number of actions to reduce the potential causes of marine litter.

Children mention causes of marine pollution

The children in this study mentioned several causes of marine pollution during the in-class discussion, such as:

1. People

I think it is because people do not care how the beach looks (participant 10).
I do not know where to put my chocolate milk when I finish it. I didn't see any bins. If there are no bins, people will throw it on the beach (participant 7).
People should not buy plastic (participant 2).
People are stupid (participant 10).
It is our fault. We need to stop putting plastic on the beach (participant 2).
I think people don't know how bad plastic is (participant 8).

2. The distribution of plastic

Everything in Indomaret (local supermarket) is in plastic. Why do they put it in plastic? They do not know about pollution in the ocean maybe (participant 2).

Indifferent Attitudes towards marine pollution and animals

Signs of elements of indifferent attitudes of children were found in this study. Participant 4 stated, for example: ''It is normal [throwing rubbish on the beach]'' Participant 3 agreed with participant 4 and argued: ''It is always like this here, it's OK'' [that people throw rubbish on the beach here in Kuta] Participant 5 showed an indifferent attitude towards the killing of animals. He stated: ''We eat the animals anyway. They will get hurt at some point.''

Self-reported actions to reduce marine litter

Actions were reported by the children in this study to contribute to reducing marine litter. Participant 7 reported: ''Next time I am on the beach, I will pick up some plastic.'' Participant then argued that there are not enough rubbish bins on the beach for rubbish disposal. Participant 7 therefore stated: ''We need more rubbish bins on the beach. We need to make more rubbish bins.'' Participant 7 suggested to start recycling herself. She suggested: ''I can maybe use my plastic bottles again.''

Concern for animals

Some children (4 out of 10) in this study were concerned about the consequences of marine pollution for animals. Participant 6 stated: ''We need to stop this. Look at that animal [pointing at the photo on the whiteboard]. He is hurt. Participant 10 also expressed her concern regarding the animal's faith and mentioned that too many animals are getting hurt.

Selective empathy for animals

Some species of animals were ascribed less importance than other species. Participant 9 explained: ‘’I don’t care about the fish, but I don’t want other animals to get hurt.’’ Participant 5 also showed selective empathy towards animals, Participant 5 stated: ‘’We already eat fish. The fish will die anyway. But I think the big sea animals, like dolphins, should not die.’’

5.2.2 Content Analysis: The children’s Environmental Attitudes toward Marine Pollution

This section provides an overview of environmental attitudes towards the marine environment and marine pollution. The framework used for this analysis is based on Kellert’s (1985) categorizations of environmental attitudes, see section 3.3 and 4.3.3 The narratives of the drawings and the responses from the group discussion were scanned for 9 different values (categories). In table 2 below, the results per category are outlined. In column 1 you can find the value. Column 2 displays the relevant question for data interpretation concerning the value. Column 3 provides the number of children whose answers belonged to the value (category). Column 4 shows an example of a statement belonging to the category. The children in this study showed signs of elements within all environmental attitude categories. However, the children mostly showed signs of elements belonging to the following environmental attitude categories: ecologistic, moralistic, negativistic, and utilitarian. Furthermore, half of the participants showed signs of elements belonging to the naturistic category.

Table 2

Categorization of Environmental Attitudes Based on All Data

1. Category	**2. Relevant question for data interpretation**	**3. Number of children who showed signs of elements belonging to category**	**4. Examples of statements**
Ecologistic	Interest in the mastery and control of the environment/animals?	8	We need the ocean, because we need to eat the fish that live in the ocean.
Moralistic	Concern for the environment/animals, with strong opposition to the way plastic hurts the environment?	7	Why is this happening? This is just stupid. Animals die for nothing. They did not decide to die. We should stop throwing plastic on the beach
Utilitarian	Practical and material value of the environment given importance?	7	I just want to be able to drive my scooter on the hard-white sand, but I will not throw rubbish on the beach.
Negativistic	Avoidance of the environment related to indifference, dislike, or fear?	6	I think the sea is nice. We should keep the sea clean. But I don’t want to play in the sea. The sea can pull you towards her, and then you are gone.
Naturalistic	Interest in and affection for wildlife and the outdoors?	5	I just love the beach and the sea. There are many crabs in the evening usually. I like crabs.

Aesthetic	Value given to the artistry, symbolism, and beauty of the environment?	4	The beach is a beautiful place. The sand is really soft. I really like to play with sand.
Dominionistic	Concern for the environment as a system, for interrelationships between wildlife species and natural habitats?	4	We cannot pollute the sea anymore, too many animals will die, and the sea and beaches will look bad
Humanistic	Strong interest in and affection for individual animals/beauty of the environment?	3	I sometimes just go to my secret spot on the beach and listen to the waves for 10 min, before I go back to my family. I love to listen to the sound of the waves.
Scientistic	Interest in the physical attributes and biological functioning of animals?	3	I wonder sometimes how a fish can swim so fast. And how do fish breathe underwater?

Note. Adapted from ‘’Toward animals: Age-related development among children’’, by Kellert, S. R., 1985, *The Journal of Environmental Education*, *16(3)*, p. 48.

5.4 Summary of the Main Results

In this summary, the main results this study are summarized and displayed in table 3. In the first column, the research instrument is showed. In column 2, the analysis that was used to extract data from the instrument was is mentioned. Column 3 displays the main outcomes.

Table 3

Summary of the Main Research Outcomes

1. Research Instrument	**2. Analysis**	**3. Main outcomes**
Drawings (narratives)	Narrative analysis	• A place for consumption (beach) • A place for recreation (beach) • A place for fishing (sea) • A dangerous place (sea) • A challenging place for girls (sea and beach) • Children showed signs of elements of selective empathy towards living things • Children described unrealistic scenario's
Drawings (symbols)	Content analysis	1. Link to the natural environment • Most children drew a larger sea section compared to the beach section, • The majority of the children did not include any vegetation on their drawing. 2. Association with human occupation or intervention • Almost all children included some kind of human intervention in their drawing (e.g. fishing, BBQ, picknick, restaurants) 3. Association with animals • The majority of the children included animals in their drawings.
In-class discussion	Narrative analysis	• Children mention causes of marine pollution • Children showed signs of elements of indifferent attitudes towards marine pollution and animals • Children reported actions to reduce marine litter • Children showed concern for animals • Children showed signs of elements of selective empathy for animals
Drawings and in-class discussion	Content analysis	• The children mostly showed signs of elements belonging to the following environmental attitude categories: ecologistic, moralistic, negativistic, and utilitarian.

6. Discussion

The aim of this study was to investigate early childhood learners' (5-8 years old) perceptions of the marine environment (beach and sea) and their environmental attitudes towards marine pollution through an educational intervention consisting of a drawing exercise and an in-class discussion. In this chapter, the sub-questions formulated in the first chapter of this thesis (section 1.1) serve as anchor points in relating to and contributing to previous literature on this topic. The findings may overlap in some cases, seen the fact that children's perceptions towards the marine environment, their attitudes towards marine pollution, and their human-nature relationship are often intertwined.

In discussing the findings, the social-cognitive theory was drawn upon as described in section 3.1. The first research question addresses personal factors, shaped by one's values, beliefs, and perceptions. The answer to the second research question shows results regarding environmental factors, shaped by socio-cultural factors. The third research question addresses both personal and environmental factors. The main question will hereafter be answered in the final chapter.

6.1 Sub-question 1

How do early childhood learners in Kuta, Lombok perceive the marine environment (beach and sea)?

Personal Factors

The children in this study perceived the beach as a place for entertainment, recreation, and consumption. The sea entailed feelings of danger, being viewed as a threatening part of the marine environment. These outcomes are in line with the findings of Wals (1994), who found that children held such perceptions. These results also consistent with the findings from the study carried out by 4SEAS (2010), in which children from the UK perceived the sea as threatening too.

Nevertheless, the children in this study also express fascination regarding the marine environment and marine life (e.g. ''I love the sound of the waves'', '' I wonder sometimes how a fish can swim so fast''). Therefore, the results of this study are conforming the outcomes of several former studies (Phenice & Griffore, 2003; Evans et al., 2007a, 2007b; Adams & Savahl, 2017) in which nature is perceived as both a fascinating and a threatening place.

The children in this study show selective empathy towards animals in the marine environment. 'Beautiful' and 'large animals' were criteria mentioned for animals to be left alone, while consuming any animals outside of those criteria was seen as morally permissible. Plants were considered less important than animals and even sometimes considered to be ''too small'' to be considered important. Plants being considered as ''less important'' also can be implied from the exclusion of vegetation in the drawings. There were more symbols included that were linked to animals than symbols associated to the natural environment. This is in line with the theory of 'plant blindness', coined by Wandersee and Schussler (1999). Another reason for this could be the pre-existing experienced-based human-plant bond (Nyberg et al., 2019). Children in this study might not have had much interactions with plants or have not learned about their value within the ecosystem.

6.2 Sub-question 2

How can the human-nature relation/connection between early childhood learners and the marine environment (beach and sea) be characterised?

Environmental Factors

This study also found that the connection between girls and the sea is obstructed due to cultural boundaries. It is not seen as common for girls to swim in the sea. In addition, swimming with a burka meant that they would have to wear a wet burka for the rest of the day, as taking off the burka during the day is culturally restricted for a Muslim girl. For this reason, girls avoid swimming in the sea, and are withheld from discovering and exploring nature and connecting to the sea, which is conform the assertion of Limoochi and Le Clair (2011). To the contrary, the male family members engage in activities such as fishing, surfing, and swimming in the sea, having a closer relationship to the sea.

The children in this study humanized forms of marine life, which resulted in the emergence of selective empathy (e.g. '' Fish need a place to live, like us'' [depiction of a house similar to those of humans instead of coral/a reef]). This finding is conforming the outcome of the study of Bonnett and Williams (1998) in which children stated that animals have aspects in common with humans and therefore deserve equal consideration to the life of humans and is of intrinsic worth.

In addition, children sometimes drew or mentioned unrealistic scenarios regarding appearing animals such as a goat going for a swim or the appearance of a whale (whales are not apparent in this area). From this can be implied that children have limited knowledge when it comes to different species and their natural habitats, which, in turn, could characterise their weak connection to the marine environment. From this finding could also be implied that children use their imagination while drawing and telling stories, which entails the questioning of the reliability of the method of children's drawings and their narratives in itself. Strommen (1995) found similar results (e.g. children drew cheetahs that do not live in the forests in question). Strommen (1995) found that studying children's narratives are possible of limited value in revealing children's perceptions towards nature since children use their imagination constantly and extensively.

However, Hope (2013) argues that drawing is instead a powerful method for developing agency. Hope (2008) explains that Drawing can provide the tools for instigating an important thought process through which the child can communicate ideas, concepts, and emotion. It is even argued that denying children's access this power of expressing themselves and their thoughts through drawings, restricts them from contributing to controversial issues and crises (Hope, 2013), including environmental issues.

6.3 Sub-question 3

What environmental attitudes do early childhood learners in Kuta, Lombok, have towards marine pollution?

Personal factors and environmental factors

Overall, the learning activity executed for this research appeared to be meaningful in engaging early childhood learners in a sustainability learning experience. Students were able to verbalise their environmental perceptions (''the sea is dangerous'', ''You better stay away from the sea''), express attitudes towards marine pollution (e.g. ''Too many animals are getting hurt''), mention several causes of marine pollution (e.g. ''It is our fault '', ''Everything in Indomaret local supermarket is in plastic''), and outline their behavioural intentions and actions to improve the environment (e.g. ''Next time I am on the beach, I will pick up some plastic''). These results are in contrast with findings from previous research from Bonnett and Williams (1998), who found that the researched children spent little attention to possible causes and solutions.

The above-mentioned finding of the current study is, however, consistent with evidence that children worry about environmental issues and tend to report behaving in an ecologically responsible manner (Evans et al., 2007), which the children in the current study did. The results are also similar to the outcomes of Thompson and Pahl's (2015) study, in which British schoolchildren's (aged 8-13 years old) understanding of marine littering and their self-reported actions were studied. Similar to the results of the current study, Thompson and Pahl (2015) found that children were concerned about marine litter and signified several causes and impacts of marine litter and showed willingness to take a number of actions to help solve the problem.

Nevertheless, some children also appeared to have an indifferent attitude towards marine pollution (e.g. ''It is normal [throwing rubbish on the beach]''), consistent with the 'shifting baseline syndrome'. In this theory, it is argued that individuals do not have an accurate conception of how much of the natural world has been degraded due to the fact that our 'baseline' shifts with every generation. Marine pollution could therefore be perceived as 'part of the environment' (Soga & Gaston, 2018).

Although the children in this study showed signs of elements within all environmental attitude categories, children mostly showed signs that belong to ecologistic, moralistic, negativistic and utilitarian attitudes. This means that the children in this study were interested in the mastery and control of the environment/animals (ecologistic), were concerned for the environment and animals, with strong opposition to the way plastic hurts the environment (moralistic), avoided the environment related to indifference, dislike, or fear (negativistic), and stressed the practical and material importance of the marine environment (utilitarian). These attitudes are consistent with the perceptions found in this study, described in section 6.1.

Contradicting Values

The sharp contrast between strong moralistic values on the one hand and ecologistic, negativistic and utilitarian values on the other hand, characterises this study. Due to this contradicting outcome, children might not act on their moralistic feelings concerning environmental preservation. This contradiction stems perhaps from the way in which the human-nature relationship is described and ascribed importance to by the Quran, which is strongly intertwined with socio-cultural etiquettes. Although the Quran states that Allah has granted humans trust to look after the earth and its flora and fauna, the Quran also repeatedly refers to the power of nature and its dangers (negativistic), as well as to the control over animals (ecologistic), and the utilitarian value of nature (Quran 3:513). The utilitarian could have been aggravated by high poverty levels, which can result in increased dependence on relatively cheap resources, such as plastic resources for economic, social, and cultural purposes (Nili, 2019).

A socio-cultural factor that could have aggravated utilitarian, negativistic, and ecologistic attitudes and affected the human-environmental relation is modern socialization, through which nature became a concept perceived as something that is subject to domination and manipulation (Phenice & Griffore, 2003).

From this can be implied that, even though the children in this study have moralistic values towards environmental preservation, which perhaps stems from the feeling of connectedness between themselves and nature at birth (Phenice & Griffore, 2003), socio-cultural factors might obstruct moralistic values of children from translating thee values into pro-environmental behaviour.

7. Conclusions and Recommendations

In this chapter, the main research question *How do early childhood learners perceive the marine environment (beach and sea) and what environmental attitudes do early childhood learners' in Kuta have towards marine pollution?* is answered. In addition to this, suggestions for future research are provided in this chapter.

Based on the findings of this study, I argue that although unrealistic scenarios were extracted form children's narratives and drawing in this study due to extensive use of their imagination, children's drawings and stories are powerful and meaningful for extracting environmental perceptions and attitudes and for developing children's agency.

In the eyes of the children in this study, the beach is a place for entertainment, a place for recreation, and a place for consumption, and generally entailed positive thoughts. The sea evoked, in contrast to the beach, negative thoughts and was viewed as a threatening part of the marine environment, something to be careful of. Children were simultaneously, however, fascinated by the beauty of the marine environment and marine life. Forms of marine life were humanized, which resulted in the emergence of selective empathy, exclusively shown towards animals in the marine environment that are perceived as 'beautiful' and/or 'large'. Plants were considered less important than animals and even sometimes considered to be too small to be considered important.

The girls in this study found it particularly challenging to engage in activities at the beach due physical restrictions entailed by socio-cultural rules stemming from the Islamic culture (wearing a burka). This constrains girls in Kuta from enjoying the marine environment and results in a disturbed connection between girls and the sea as they keep physical distance from the sea. The introduction of a burkini in this area might make beach activities more enjoyable for girls and would perhaps allow for a better connection between Muslim girls and the marine environment in this area. This connection is necessary since a healthy human-nature connection improves a foundational orientation toward concern for the natural environment.

Since a primary school influences, amongst other factors, the formation of environmental perceptions and attitudes of children substantially, the researches schools in this study are advised to encourage the development of moral reasoning and agency through environmental education programmes. Within these programmes, the pre-existing experience-based background of children should also be taken into account when teaching about sustainability to children in Kuta, as some schildren may not have substantial experience with animals, plants, and natural environments in general.

Although the children in this study have not been exposed to environmental education before, they appeared to have a 'natural urge' and willingness to share thoughts about causes and solutions to contribute to the discussion surrounding marine pollution and help solve the issue, which, sadly, was not heard before this learning activity due to a lack of environmental education despite the importance of the development of agency and moral reasoning, necessary to instigate behavioural change concerning pressing environmental issues, such as marine pollution.

Despite the children's moralistic attitude towards animals and the environment, being the driving force of the children's willingness to help solve marine pollution, this attitude might not necessarily translate into pro-environmental behaviour. Dependency on cheap plastic products due to poverty, as well as socio-cultural behaviour stemming from the Islamic culture and the way in which the Quran characterises the human-nature relation, might obstruct moralistic values and withhold children from showing pro-environmental behaviour.

This socio-cultural base could, however, also serve as a driving force for sustainability education, especially in a society like Kuta where religion is one of the most essential elements in societal life. The two-sidedness in the Quran, with a moralistic attitude on the one side and utilitarian, ecologistic and negativistic attitudes one the other side, also provides opportunities. Here, the trust that is given by Allah to the earth's inhabitants to preserve what is given to them (moralistic attitude) could be emphasized in environmental education classes and could serve as a starting point for ESD in Kuta. Moral lessons referring to nature and the human-nature relationship contained in the holy books could be used in these

classes for example. Hence, environments can be preserved and protected not only for the sake of (education for) sustainable development, but also for upholding Allah's provision on trusteeship.

Suggestions for Future Research

This study has contributed to discourse concerning the interrelated components of early childhood learners' perceptions of the marine environment, human-nature relationship, and attitudes towards plastic pollution. In order to broaden the scope of future research on education for sustainable development in the light of marine pollution in low-socio-economic status environments, it would be beneficial to research the development of children's environmental perceptions and attitudes over a longer period of time and compare perceptions, attitudes, and the human-nature relationship between different age groups.

More research concerning the socio-cultural influence of the Quran and other holy books, on environmental perception, attitudes and the human-nature relationship is another suggestion for future research and raises the question whether and to what extent moral lessons regarding nature influence pro-environmental behaviour. The socio-cultural influence of factors such as poverty levels and social modernization on environmental perception, attitudes and the human-nature relationship could also be further researched. Understanding the socio-cultural influences that obstruct and encourage pro-environmental behaviour, a healthy human-nature relationships and positive perceptions towards nature amongst children can contribute to an extended and improved understanding concerning the children's learning needs and can, in turn, improve education for sustainable development.

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Appendices

Appendix 1. Parental Consent Form

The study and the learning activity: I would like to ask you for permission for your child to participate in a learning activity for academic research. I aim to research children's environmental perceptions regarding the marine environment and attitudes towards ocean plastic pollution. Ocean plastic pollution pollutes our waterways and threatens our ecosystem. For this reason, learning about this type of pollution can be considered important. I would like to research your children's environmental attitudes through their interpretations of a beach which they are requested to draw. While drawing, children are asked several questions about the drawing. Their answers will be written down and analysed. In addition, I aim for this learning activity to be beneficial for your child when it comes to gaining knowledge about ocean plastic pollution and the natural environment.
Penelitian dan kegiatan pembelajaran: Saya ingin meminta izin kepada anak Anda untuk berpartisipasi dalam kegiatan pembelajaran untuk penelitian akademik. Untuk penelitian ini, saya bertujuan untuk meneliti sikap lingkungan anak-anak terhadap polusi plastik laut. Polusi plastik laut mencemari saluran air kita dan mengancam ekosistem kita. Karena alasan ini, mempelajari tentang jenis polusi ini dapat dianggap penting. Saya ingin meneliti sikap lingkungan anak-anak Anda melalui interpretasi mereka terhadap sebuah pantai yang diminta untuk mereka gambar. Saat menggambar, anak-anak ditanyai beberapa pertanyaan tentang gambar itu. Jawaban mereka akan ditulis dan dianalisis. Selain itu, saya bertujuan agar kegiatan belajar ini bermanfaat bagi anak Anda dalam hal mendapatkan pengetahuan tentang polusi plastik laut dan lingkungan alami.

Confidentiality: Your child's response to questions will be kept confidential. Your and your child's identity will not be revealed at any time. This research is part of the research training course at Gothenburg University. The data collected can only be read by myself and the teacher in charge, and will not be distributed, published or used in any other way. I will not use your/ your child's name or any other personal information to identify you.
Kerahasiaan: Respons anak Anda terhadap pertanyaan akan dijaga kerahasiaannya. Identitas Anda dan anak Anda tidak akan diungkapkan kapan pun. Penelitian ini adalah bagian dari kursus pelatihan penelitian di Universitas Gothenburg. Data yang dikumpulkan hanya dapat dibaca sendiri dan guru yang bertanggung jawab, dan tidak akan didistribusikan, diterbitkan, atau digunakan dengan cara lain. Saya tidak akan menggunakan nama Anda / anak Anda atau informasi pribadi lainnya untuk mengidentifikasi Anda.

Participation and withdrawal: The participation of your child in this study is completely voluntary, and you may refuse for him/her to participate or withdraw from the study without penalty or loss of benefits to which you may otherwise be entitled. You may withdraw by informing the experimenter that you no longer wish to participate (no questions will be asked).
Partisipasi dan penarikan: Partisipasi anak Anda dalam studi ini sepenuhnya bersifat sukarela, dan Anda dapat menolaknya untuk berpartisipasi atau menarik diri dari studi tanpa penalti atau kehilangan manfaat yang berhak Anda dapatkan. Anda dapat menarik diri dengan memberi tahu eksperimen bahwa Anda tidak lagi ingin berpartisipasi (tidak akan ada pertanyaan).

To Contact the Researcher: If you have questions or concerns about this research, please contact me via email: roosvdmeijden2@gmail.com

Untuk Menghubungi Peneliti: Jika Anda memiliki pertanyaan atau masalah tentang penelitian ini, silakan hubungi saya melalui email saya: roosvdmeijden2@gmail.com

Whom to contact about your rights in this research, for questions, concerns, suggestions, or complaints that are not being addressed by the researcher, or research-related harm: bethanie.carney@bioenv.gu.se

Siapa yang harus dihubungi dalam penelitian ini mengenai hak-hak Anda, pertanyaan, masalah, saran atau keluhan yang tidak terselesaikan oleh peneliti, atau bahaya terkait penelitian: bethanie.carney@bioenv.gu.se

Agreement/ Perjanjian :

The nature and purpose of this research have been sufficiently explained and I agree that my child participates in this study. I understand that I am free to withdraw my child from this study at any time without incurring any penalty.
Sifat dan tujuan penelitian ini telah dijelaskan secara memadai dan saya setuju bahwa anak saya berpartisipasi dalam penelitian ini. Saya mengerti bahwa saya bebas untuk menarik anak saya dari studi ini kapan saja tanpa dikenakan hukuman apa pun:

Signature (Tanda tangan): _____

Date (Tanggal): _____

Name (Nama depan): _____

Appendix 2. Questions Drawing Activity and In-class Discussion

Exploratory questions during drawing:

1. Can you tell me what you have drawn?
Bahasa Indonesia: *Bisakah Anda memberi tahu saya apa yang telah Anda gambar?*

2. What is that? (point at symbols)
Behasa Indonesia: Apa itu?

Question posed by the teacher when showing photos about marine pollution:

What do you see in this photo? What do you think about this? Why do you think this?
Bahasa Indonesia: *Apa yang Anda lihat di foto ini? Apa yang Anda pikirkan tentang ini? Mengapa Anda berpikir demikian?*

Appendix 3. Photos learning activity

Appendix 4. Drawings

Drawing 1: boy, 7 years old

Drawing 2: girl, 6 years old

Drawing 3: girl. 5 years old

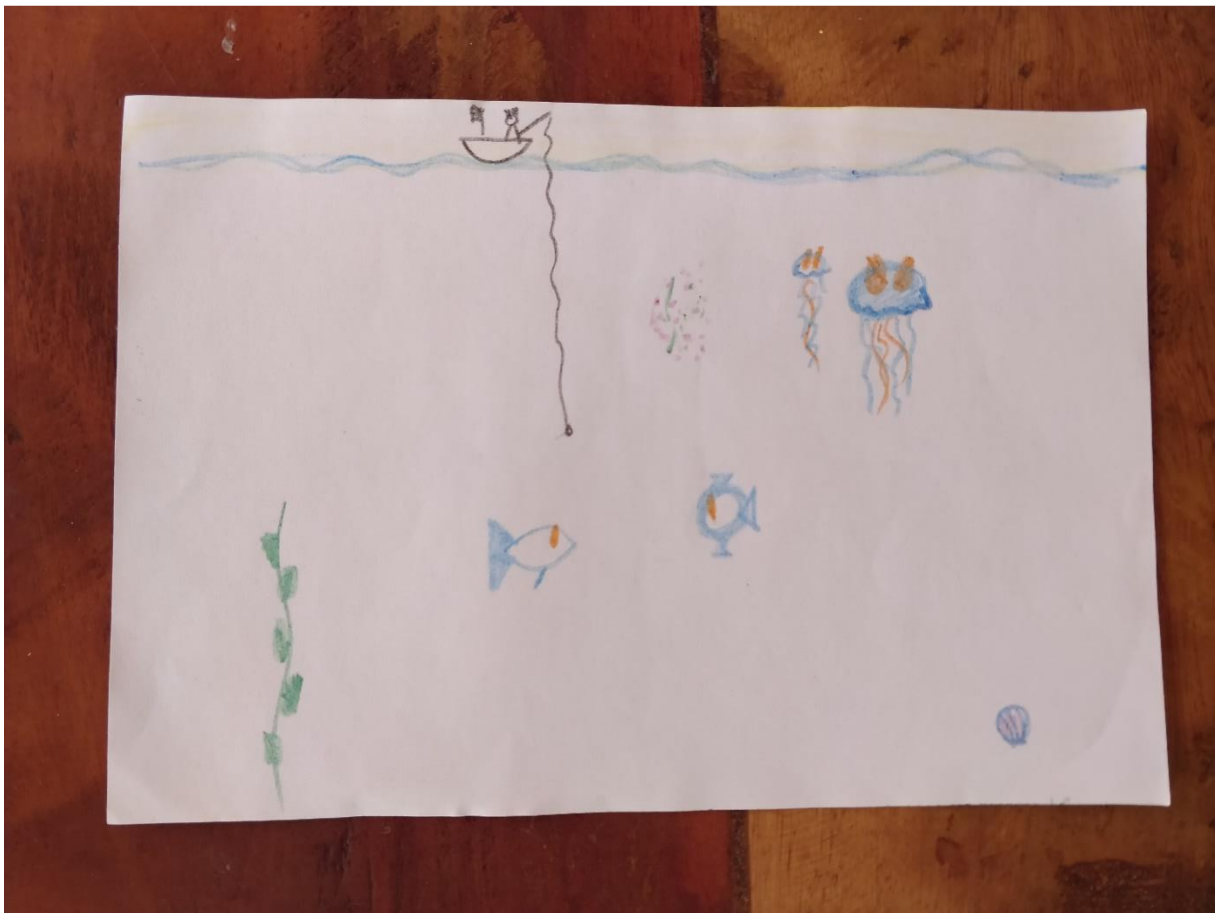
Drawing 4: boy, 5 years old

Drawing 5: boy, 6 years old

Drawing 6: boy, 8 years old

Drawing 7: girl, 7 years old

Drawing 8: boy, 8 years old



Drawing 9: girl, 8 years old

Drawing 10: girl, 7 years old