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PROMOTING CONSERVATION VALUES FOR PRESCHOOL
CHILDREN THROUGH PLAY-BASED LEARNING IN ECOTOURISM

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Abstract:

Ecotourism provides a favourable context for raising environmental awareness and promoting conservation through education and interpretation and by affording experiences in nature. Experiences in nature are believed to lead to increased concern for the environment and pro-environmental behaviour. There is a considerable amount of research on ecotourism's impact on pro-conservation knowledge, attitudes, and behaviour but not much research on ecotourism's role in contributing to conservation values in children. Research on connecting early childhood environmental education with play-based learning is growing. The benefits of play-based learning are grounded in research and play and learning are considered interrelated phenomena.

This multidisciplinary thesis connects tourism research and education, aiming to understand how preschool children can learn about the natural environments and the importance of conservation in the ecotourism context. Drawing upon the notions of ecotourism and play-based learning, the main research question of the study is: How can play-based learning promote conservation values for preschool children in an ecotourism site?

The thesis explores what are suitable methods and tools to familiarise preschool children with the environment and nature, and promote conservation values for them through play. It also aims to find out what is the role of adults in play-based learning that promotes conservation values. The empirical data was collected through qualitative research consisting of eleven semi-structured interviews with professionals and experts in the fields of education, tourism and conservation, as well as participant observation with preschool aged children in three different nature-based play settings.

The findings indicate that for preschool children to learn about the environment and establish conservation values requires developing a love for nature through regular experiences in natural environments. The message of the interconnectedness of nature is something that preschool children need to understand to develop an interest in protecting the environment. Ecotourism places should provide opportunities for unstructured nature play for preschool children and communicate the message of interconnectedness in their education and interpretation. The role of parents and other close adults in preschool children's lives have an important role in supporting and facilitating the learning of conservation values through play. Evidently, ecotourism providers should consider ways of attracting more families with young children, especially local families, to build future advocates of conservation.

Keywords: ecotourism, education, play-based learning, conservation values, preschool children.

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1. INTRODUCTION

1.1 Background of the Study

Human activity has disturbed and deteriorated earth's ecosystems, resulting in half of the planet's surface being utilised for human land uses (Massingham, Fueller, & Dean, 2019, p. 828). Ecosystems and species are impacted from several different directions, such as climate change, expanding urbanisation and mining activities, invasion of natural ecosystems by feral animals and weeds, as well as increases in visitor numbers to national parks (Green, 2014, p. 71). It is argued that the protection and conservation of nature is essentially important to environmental sustainability and thus, advocating lifelong pro-environmental knowledge, attitudes and behaviour is crucial (Ting & Cheng, 2017, pp. 1212–1213). Sadly, detachment from nature due to increased urbanisation, and decreased experiences in and connections with nature has led to reduced support for conservation (Massingham et al., 2019, p. 828). Davis (1998, p. 142) argues aptly that “ultimately, it is children, with the biggest stake in the future, who will bear the consequences of economic, social and environmental decisions and actions that are currently being made or avoided”. Therefore, it is important that children are provided with the right attitudes, values, knowledge and skills to change the current actions, support nature protection, and make the future more sustainable. Teaching children about the environment and its protection can encourage a deeper connection with the environment and promote children's belief in themselves to be able to have a positive impact on the world.

It is believed that experiences in nature can lead to increased concern for the environment and pro-conservation behaviour (Massingham et al., 2019, p. 827) and that empathy with, and love of nature develop of regular contact with nature (Wilson, 2011, p. 1). There is evidence of the relationship between childhood experiences in nature and the formation of pro-environmental attitudes and behaviour later in life (Edwards & Cutter-Mackenzie, 2011, p. 52). Environmentally friendly practices empower children and lay the foundations for a relationship with the environment, as well as an environmentally responsible adulthood (The Spoke, 2016; Wilson, 2011, p. 1). Early childhood years are considered to impact children's development most significantly and be the basis for the construction of the rest of their lives (Sawitri, 2017). According to Fortino, Gerretso, Button and Masters (2014, p. 156), an increasing body of research supports the argument that in their early years, children learn predominantly through their senses and direct experiences,

comprehending the world through play, exploration, creative activities, and by watching and imitating others.

The importance of environmental education in early childhood curriculum has been emphasised in recent years, and arguments about play-based learning and environmental education in early childhood curriculum are outlined e.g. in the Australian Early Years Learning Framework (Edwards & Cutter-Mackenzie, 2011, p. 51). Many researches argue for the various benefits of play-based learning (Fesseha & Pyle, 2016, p. 364), and play and learning are considered as two interrelated phenomena and included in many national early childhood curricula (Pramling Samuelsson & Johansson, 2006, pp. 48–49). Play is considered as an important part of children’s development and wellbeing. Play is often referred as a child’s work. Play promotes learning (Michnick Golinkoff, Hirsh-Pasek, & Singer, 2006, p. 9) and is the most natural way children learn (Moyles, 2010b, p. 1). Also, the role of adults is considered important. It is argued that play-based learning requires adult support and intentionality in the planning of play context (Fesseha & Pyle 2016, p. 373). There is an increasing amount of evidence that adult interaction and engagement in play support young children’s learning (Cutter-Mackenzie & Edwards 2013, p. 197). As such, play-based learning can be assumed an effective approach in promoting conservation values in young children.

Ecotourism provides an ideal context for learning about the environment and conservation values. As Kimmel (1999, p. 41) argues, “helping people learn to love the earth is a high calling and one that can be carried out through ecotourism”. Children can benefit from ecotourism experiences, as they provide an occasion to learn about wildlife and environmental degradation, participate in conservation efforts, and be exposed to different cultures (Biosphere, 2019). Ecotourism activities are becoming more popular world-wide (Kimmel, 1999, p. 40), ranging from hard-core ecotourism activities such as scientific observation and recording of species to soft ecotourism activities such as whale watching (Hughes, Packer, & Ballantyne, 2011, pp. 307). One of the reasons for the increase in ecotourism is growing environmental awareness of the general public. According to Gale and Hill (2009, p. 3), nature-based tourism, including ecotourism, was growing three times faster globally than the tourism industry altogether. Powell and Ham (2008, p. 467) explain that because tourism is one of the world’s largest economic sectors, it can contribute considerably to sustainable tourism, especially in naturally sensitive areas that engage in tourism.

Ecotourism focuses on raising public awareness of the environment and promoting conservation, and interpretive activities are often included in ecotourism tours to teach about conservation and cultural-history of the area, as well as human-environment interaction (Mbaiwa & Stronza, 2011, p. 337). Gale and Hill (2009, p. 9) characterise ecotourism as small-scale, based on sustainable ideas, non-consumptive, ethical and of benefit to local people. For tourism business to qualify as ecotourism, it must have the following elements: a nature-based product or setting, active management to reduce environmental impacts, an environmental education element, and a contribution to the conservation of the natural environment in close cooperation with local communities (Buckley, 2003, p. 1). International Union for Conservation of Nature (IUCN, p. 13) defines conservation as “the protection, care, management and maintenance of ecosystems, habitats, wildlife species and populations, within or outside of their natural environments, in order to safeguard the natural conditions for their long-term permanence”. According to Buckley (2010, pp. 3–4) conservation encompasses all actions and attempts to conserve biodiversity and ecosystem services in all kinds of land and water tenures, including public and private properties, landscape-scale connectivity approaches, and national parks and other public protected areas.

The educational dimension is a key element of ecotourism and characterises ecotourism experiences (Blamey, 2001, p. 9). It has been argued that well-designed and communicated interpretation during an ecotourism experience can increase visitors’ knowledge of the protected area, conservation attitudes towards the protected area, as well as general pro-environmental attitudes and behaviour (Powell & Ham, 2010, p. 467) Ecotourism can be considered as a vehicle to support biodiversity conservation and according to Powell and Ham (2008, p. 467), a tool in balancing between tourism development and resource protection with proper tourism management and protected area management. It is a preferred conservation approach for many endangered species conservation programmes for its ability to concurrently meet the needs of local communities and biodiversity (Pegas, Coghlan, & Rocha, 2011, p. 1). Ecotourism can also be a tool for getting local people to understand the value of their natural resources and protect them (Stronza, 2008, p. 5), and for preserving sensitive human cultures (Dimitriou, 2017, p. 26). This multidisciplinary thesis that connects tourism studies and education, assumes that ecotourism can provide an ideal context for promoting conservation values for preschool children, and studies how those values can be promoted through play-based learning. The study considers

conservation values as personal beliefs and awareness (see Schwartz, 2012, pp. 3–4) about the importance of nature conservation, and closely related to environmental values.

1.2 Previous Research

Ecotourism phenomenon has been vastly studied over the past decades and there is a large body of research on ecotourism's impacts on the environment, local people and their cultures, both positive and negative. Tourism's relationship with biodiversity conservation (Green, 2014; Gössling, 1999; Hudson & Lee, 2010; Krüger, 2005) and the environmental education element of ecotourism (Coles, Poland, & Clifton, 2014; Fennell, 2015; Kimmel, 1999; Mondino & Beery, 2018; Ross & Wall 1999; Weaver, 2005) are studied considerably in both, tourism studies and environmental studies. Krüger (2005, p. 597) indicates that ecotourism can benefit protected areas and local communities, and contribute to conservation if it is small-scale and locally operated and owned. For ecotourism to contribute to conservation, thoughtful planning and management prior to and during development of the ecotourism initiative, as well as side-by-side to the running of any ecotourism project are required (Krüger, 2005, p. 597). According to Hudson and Lee (2010, p. 42), tourism can provide an opportunity for biodiversity to gain economic value and thus, provide political support for governments to conserve biodiversity and opportunities for people to gain non-economic values of biodiversity through nature-based tourism experiences. According to Kimmel (1999, p. 41), as people participate voluntarily, the sites are exciting and participants learn in an enjoyable manner, ecotourism provides an ideal context for learning about the environment.

There is a quite considerable body of research on ecotourism's role in and impact on pro-conservation knowledge, attitudes and behaviour of the visitors (Hughes et al., 2011; Mann, Ballantyne, & Packer, 2018; Massingham et al., 2019; Peake, Innes, & Dyer, 2009; Pegas et al., 2011; Powell & Ham, 2008; Ting & Cheng, 2017). However, there is not much research on ecotourism's role in contributing to pro-environmental and conservation values in children. There also seems to be little research on ecotourism and children in general. Massingham et al. (2019, p. 829) indicate that ecotourism experiences such as visiting national parks can create greater understanding of authenticity and thus, foster pro-conservation attitudes and behaviour, and that reflecting on and connecting with nature can raise stronger concern about it. Ting and Cheng (2017, p. 1213) argue that

learning through participation and guided learning experiences can communicate a strong and positive educational message to participants, as individuals form a continuous interest in protecting and conserving things. Massingham et al. (2019, p. 827) indicate that different types of ecotourism experiences may result in different types of conservation engagement, and that negative emotions about the predicament of species can promote stronger commitment in conservation.

Peake et al. (2009, p. 123) suggest that interpretation and interaction should be considered holistically in effective conservation communication, and believe that ecotourists have potential to develop and have a shared responsibility for the conservation of the environment. However, there is limited empirical evidence in the ecotourism literature of ecotourism's impact on actual conservation engagement after the visit. It is argued that the actual engagement in environmental behaviour is one of the most difficult features of environmental education to test. Mann et al. (2018, p. 859) explain that there is a lack of studies on long-term changes in environmentally responsible behaviours after visiting a wildlife tourism setting. Powell and Ham (2008, p. 468) and Hughes et al. (2011, p. 308) discuss that the arguments that ecotourism can enhance visitors' knowledge on social and natural environments and increase their support for conservation remain untested, and the connections between ecotourism and changes in visitors' pro-environmental knowledge, attitudes and behaviours are rarely studied. Massingham et al. (2019, p. 829) and Ting and Cheng (2017, p. 1213) argue that environmental awareness and concern alone may not foster pro-environmental behaviour among individuals. Mann et al. (2018, p. 859) also argue that despite visitors' conservation intentions after the ecotourism activity, it has a limited impact on their long-term adoption of environmentally responsible behaviour. In light of the previous studies, there appears to be a gap in research on connecting ecotourism's environmental education and conservation values in young children.

1.3 Purpose of the Study

This multidisciplinary study aims to understand how play-based learning can help ecotourism companies to promote conservation values for young children, and connects tourism research with educational studies. There are little, if any, studies on conservation values and preschool children in the ecotourism context. The study concentrates on promoting conservation values to preschool children and finding out what are suitable

methods to familiarise them with natural environments and the importance of protecting them.

As ecotourism experiences can enhance visitors' environmental knowledge and promote pro-environmental attitudes and behaviour (Hughes et al., 2011, p. 308), ecotourism can be considered as an ideal context to introduce biodiversity conservation to preschool children. According to Pegas et al. (2011, pp. 1–2), environmental education, as part of ecotourism, can improve local understanding about and concern for conservation, and long-term environmental programmes can promote environmental changes that last throughout the youth and adulthood. Also, Sawitri (2017) argues that environmental education is more interesting for young children when it is delivered in an informal learning environment.

As play-based learning is considered a beneficial method and a preferred approach to learning in many early childhood learning discussions, and because play is the most natural way of learning for children (Moyles, 2010b, p. 1), this study applies play-based learning theory as a theoretical approach to learning. Learning is regarded as a socio-cultural construct, and the theoretical framework for play-based learning in this study stems from sociocultural theory. Sociocultural theory understands learning as an active process of the environment and interaction between children, their families, educators and the community (Pollock et al., 2017, p. 14).

Drawing upon the notions of ecotourism and play-based learning, the main question of the study is: How can play-based learning promote conservation values for preschool children in an ecotourism site? The sub-questions of this study are formulated as follows:

- SQ1: How do children learn about the environment through play-based learning?
- SQ2: What is the role of adults in play-based learning that promotes conservation values?
- SQ3: What type of interpretive tools can be used to promote conservation values for children in an ecotourism site?
- SQ4: What issues should be considered and included when designing these interpretive tools?

The thesis study joins a discussion on ecotourism's ability to enhance visitors' understanding about the environment and promote pro-conservation attitudes and behaviours. The justification for the study arises from the growing urgency in protecting the

environment and nature due to climate change and other current threats to ecosystems and species, as well as the increasing interest in ecotourism as a form of travelling. It provides valuable insights for ecotourism industry to understand how young children can learn about the environment and conservation through play and what issues, tools and methods are important to take into consideration in promoting the learning. The commissioner of the thesis study is Binna Burra Lodge, a heritage listed ecotourism property located in Lamington National Park. The results of the study will be used to design an outside play area for Binna Burra Teahouse which is part of the property.

1.4 Methods and Data

The study aims to understand the connection between ecotourism and learning conservation values among preschool children by using qualitative research methods within an interpretive social sciences paradigm. In social sciences, qualitative research is used to explore, describe, or explain social phenomenon, and can be considered as a scholarly, practical, and creative inquiry (Leavy, 2014, pp. 2, 6). The research philosophy of the present study is interpretivism, regarding that a single phenomenon can have multiple interpretations and understanding it in its unique context (Pham, 2018, p. 3). The study recognises that people's knowledge of reality is a social construction by human actors (Chowdhury, 2014, p. 433) and thus, a deep understanding of children's learning experiences can be gained through semi-structured interviews and participant observation.

The empirical data consist of 10 semi-structured in-depth interviews with 11 professionals and specialist in the fields of ecotourism, conservation and education, as well as participant observation with preschool children in three different play settings in natural environment. Interviewing was chosen, because it is a method of enquiring knowledge and documenting factual information about people's lives, but also to gain an insight into their experiences, feelings, opinions, values, attitudes, and beliefs about personal experiences and social world, with a degree of openness (Saldaña, 2011, p. 32; Scholstak, 2006, p. 10). Participant observation was chosen, as it can reveal information that may be left unexplored from interviews and other data collection methods (Saldaña, 2011, p. 46). Data was collected between June and August 2019. Interviews were recorded and later transcribed, and fieldnotes were taken during the observations.

The empirical material is analysed by using a thematic analysis and the theory developed in an inductive way, from the particular to the general based on the evidence and gathering of knowledge (Saldaña, 2011, p. 93). Thematic analysis is considered suitable for this multidisciplinary study, as it is a qualitative research method that can be employed generally across a scope of epistemological and research questions (Nowell, Norris, White and Moules, 2017, p. 2) and is not limited to a particular epistemological or theoretical perspective (Maguire and Delahunt 2017, p. 3352). The content of the data directed how the themes in the analysis were developed.

1.5 Structure of the Study

The following two chapters, *Promoting Conservation through Ecotourism* and *What is Play-Based Learning*, form the theoretical framework of this study. The *second* chapter discusses the phenomenon of ecotourism and the connection between ecotourism and conservation. It starts by explaining what is ecotourism: its definition, the concept, as well as some issues of substance in ecotourism. The second chapter then discusses the relationship between ecotourism and conservation, as well as the educational element of ecotourism. The *third* chapter, and the second part of the theoretical framework, deliberates what is play-based learning by conceptualising play-based learning, defining play, and explaining how learning through play occurs and how to construct the environment for play-based learning. The third chapter also elucidates the theories behind the concept of play-based learning.

The *fourth* chapter includes the research methods and design of this study. It introduces the research context and addresses how qualitative research method of semi-structured interviewing and participant observation were employed to collect data, and how the empirical material was analysed by using thematic analysis. The *fifth* chapter deliberates the analysis of the study, explaining the findings. The *sixth* chapter discusses the implications of the findings for the commissioner Binna Burra Lodge. The *seventh* chapter outlines the salient elements from the findings, as well as presents the limitations of the study and its application for future studies.

2. PROMOTING CONSERVATION THROUGH ECOTOURISM

2.1 What Is Ecotourism?

Ecotourism Australia defines ecotourism as “ecologically sustainable tourism with a primary focus on experiencing natural areas that fosters environmental and cultural understanding, appreciation and conservation”. However, there seems to be a lack of universally accepted definition of ecotourism and generally, the existing definitions can be divided into positive (what is) and normative (what should be) (Gale & Hill, 2009, p. 5). Fennell (2015, p. 13) discusses that the various definitions, each intend to find the right mix of terms and often, make a distinction between ecotourism and nature-based tourism. Ecotourism differs from nature-based tourism as it includes conservation of the environment, strong commitment to nature, and a sense of social responsibility (Fennell, 2015, p. 13). Ecotourism is nature travel that contributes positively to conservation and sustainable development (Rai, 2011, p. 10). Table 1. presents seven different definitions of ecotourism which are discussed more closely next.

Hector Ceballos-Lascuráin, is regarded as a creator of the formal definition of ecotourism. His definition from 1987 is that ecotourism is:

Environmentally responsible travel and visitation to relatively undisturbed natural areas, in order to enjoy, study and appreciate nature (and any accompanying cultural features – both past and present). It is a type of tourism that promotes conservation, has low visitor impact and provides for beneficially active socio-economic involvement of local populations. (Mbaiwa & Stronza 2011, p. 337).

Gale & Hill (2009, p. 5) present three criteria that definitions of ecotourism in general include: 1) nature-based attractions/activities, 2) visitor interactions focused on learning and education, and 3) application of principles and practices of ecological, socio-cultural and economic sustainability. Similarly, Blamey’s (2001, p. 6) analysis of ecotourism favours the emphasis on principles associated with sustainable development and presents three dimensions of the concept: 1) nature-based, 2) environmentally educated, and 3) sustainably managed. Blamey notes that the last dimension includes both, natural and cultural environments. The analysis is coherent with Buckley’s conception of ecotourism that defines ecotourism as nature-based, environmentally educated, sustainably managed and supporting conservation (Blamey, 2001, p. 7). Also, Fennell (2015, p. 15) discusses

that the emerging core principles of ecotourism are education, sustainability, a nature base, and a conservation orientation.

Mbaiwa & Stronza (2011, p. 336) define ecotourism as nature-based tourism that aims to minimise the negative environmental, social and economic impacts of conventional tourism, to contribute positively to environmental conservation, and to improve the lives of local communities. Honey (1996, as cited in (Mbaiwa & Stronza 2011, p. 337) defines ecotourism as “responsible travel to natural areas that conserves the environment and sustains the well-being of local people”. Whereas, Gale and Hill (2009, p. 4) summarise the definition of ecotourism as travel to natural areas that involves local people, contributes financially to local environmental protection and contributes to the conservation of the local environment and biodiversity through minimising visitor impact and promoting tourist education. Fennell (2015, p. 272) mentions that many authors acknowledge that for ecotourism to succeed it must aim to reach noble goals and argues that those goals are needed to accomplish holistic ends. He defines ecotourism as “travel with a primary interest in the natural history of a destination. It is a form of nature-based tourism that places about nature first-hand emphasis on learning, sustainability (conservation and local participation/benefits), and ethical planning, development and management” (p. 17). According to Fennell (2015, p. 17) this more rigorous definition assists in determining what is and what is not ecotourism. It emphasises the importance of an ethical component in ecotourism and excludes culture as a fundamental principle (but not as a secondary motivation and benefit), arguing that if culture was a primary principle of ecotourism, then it would be cultural tourism. (Fennell, 2015, p. 17).

Powell & Ham (2008, p. 468) define ecotourism as “tourism to natural areas that supports environmental conservation, social equity and environmental education in an effort to maintain economic viability without degrading the host environment”. They argue that the interdependent relationship between the 4 Es, environmental conservation, equity, education and economic benefits, have an impact on the sustainability of ecotourism, and none of them can exist alone in isolation. According to Powell and Ham (2008, p. 468), on one hand, sustainable profits cannot exist continuously without a robust and attractive physical environment, equitable social environment, and educate hosts and guests willing to protect the local environment and culture. On the other hand, ecotourism cannot contribute to environmental conservation, social equity and education if there are no profits (Powell & Ham, 2008, p. 468). However, Romeril (1994, as cited in Dimitriou, 2017, p.

28) argue that “what does it matter if the definition is not strictly appropriate if the activity is environmentally sensitive and sound? Surely it is the philosophy and not the semantics, that is important”.

Table 1. Definitions of Ecotourism

Source	Proposed Ecotourism Definition
Hector Ceballos-Lascuráin (1987)	“Environmentally responsible travel and visitation to relatively undisturbed natural areas, in order to enjoy, study and appreciate nature (and any accompanying cultural features – both past and present). It is a type of tourism that promotes conservation, has low visitor impact and provides for beneficially active socio-economic involvement of local populations” (Mbaiwa & Stronza 2011, p. 337).
Honey (1996)	“Responsible travel to natural areas that conserves the environment and sustains the well-being of local people” (Mbaiwa & Stronza 2011, p. 337)
Powell and Ham (2008)	“Tourism to natural areas that supports environmental conservation, social equity and environmental education in an effort to maintain economic viability without degrading the host environment” (Powell & Ham, 2008, p. 468).
Gale and Hill (2009)	Travel to natural areas that involves local people, contributes financially to local environmental protection and contributes to the conservation of the local environment and biodiversity through minimising visitor impact and promoting tourist education (Gale & Hill, 2009, p. 4).
Mbaiwa and Stronza (2011)	Nature-based tourism that aims to minimise the negative environmental, social and economic impacts of conventional tourism, to contribute positively to environmental conservation, and to improve the lives of local communities (Mbaiwa & Stronza, 2011, p. 336).
Fennell (2015)	“Travel with a primary interest in the natural history of a destination. It is a form of nature-based tourism that places about nature first-hand emphasis on learning, sustainability (conservation and local participation/benefits), and ethical planning, development and management” (Fennell, 2015, p. 17).
Ecotourism Australia	“Ecologically sustainable tourism with a primary focus on experiencing natural areas that fosters environmental and cultural understanding, appreciation and conservation” (Ecotourism Australia).

Due to the great amount of literature on ecotourism, the origin of the term has caused confusion. According to Blamey (2001, p. 5), ecotourism was developed within the environmental movement in the 1970s and 1980s when growing environmental concern of mass tourism contributed to a demand for alternative nature-based experiences. He adds that concurrently, less developed countries realised that nature-based tourism can provide a way of earning foreign exchange and be less harmful to natural resources. Fennell (2015, p. 9) explains that some researchers claim the term originates only from the late

1980s, while others argue it derives from Miller's work on ecodevelopment in the late 1970s. However, there is evidence that the term ecotourism can be traced back to 1960s to Hertzler who defined four fundamental pillars of responsible form of tourism as a result of discontent with negative means of development (Fennell, 2015, p. 10). Fennell (2015, p. 10) also argues that Lothar Machura's paper *Nature Protection and Tourism: With Particular Reference to Austria* published in 1954 was the first academic work to present the connection between tourism and conservation. Hence, ecotourism seems to have been feasible in practice long before the 1980s (Fennell, 2015, p. 11). However, the first formal definition of ecotourism was created by Ceballos-Lascuráin in 1987 emphasising the nature-based experience that tourists seek (Blamey, 2001, p. 6; Fennell, 2015, p. 9).

The idea of ecotourism became known more to the public in the 1990s after the term sustainability emerged as a result of the publication of the Brundtland Report in 1987 (Krüger, 2005, p. 579). According to Weaver (2004, p. 440) evidence of the formalisation and institutionalisation of ecotourism includes the declaration of 2002 as the International Year of Ecotourism by the United Nations, and the publication of the peer-review *Journal of Ecotourism* in the same year. Stronza (2008, p. 5) argues that ecotourism has gained substantial degree of attention and become an important issue of study and policy debate. She adds that financial institutions and development agencies are supporting potential ecotourism destinations, and conservation organisations are promoting ecotourism projects in biodiversity rich areas around the world. Also, research on ecotourism is flourishing and more national policies of ecotourism are drafted (Stronza, 2008, p. 5). Today, ecotourism is promoted as a sustainable alternative to mass tourism (Beaumont, 2001, p. 317) and is regarded by some as a panacea for nature protection (Krüger, 2005, p. 579). Mbaiwa & Stronza (2011, p. 338) argue that ecotourism can provide several different outcomes, e.g. environmental conservation, social justice, economic development and environmental education. However, conservation remains the primary focus of ecotourism which can be achieved by creating economic and social benefits to local people (Mbaiwa & Stronza 2011, p. 338). Ecotourism emphasises on discovering flora and fauna, understanding their value and contributing to their protection (Rai, 2011, p.9).

According to Mbaiwa and Stronza (2011, p. 336) ecotourism is seen as a practice that is oriented towards the achievement of sustainability, and considered as a tool for conservation and development, and a viable alternative to more traditional and harmful rural development processes. The advocates of ecotourism believe that it can alleviate the

negative repercussions of tourism, promote environmental conservation and social improvements (Powell & Ham, 2008, p. 467), as well as reduce poverty (Mbaiwa & Stronza, 2011, p. 336). The World Tourism Organisation (UNWTO) also advocates ecotourism as a tool for governments to alleviate poverty and protect the environment, emphasising ecotourism's ability to contribute to sustainable development and biodiversity conservation. Ecotourism can minimise the negative impacts and enhance the benefits of tourism to sustain the increasing numbers of tourists to natural environments (Gale & Hill, 2009, p. 3). Also, it has been argued that ecotourism, through well-designed programmes and interpretation, can improve visitors' environmental knowledge and promote conservation attitudes and behaviour (Hughes et al., 2011, p. 307). Rai (2011, p. 11) argues that for ecotourism to be a successful tool for conservation and economic development, different actors such as governments, protected area personnel, local communities, tourism industry, NGOs, financial institutions, and tourists must participate in the process.

According to Stronza (2008, p. 4), the three broad characteristics of ecotourism are: 1) to minimise negative environmental, social and economic impacts of mass tourism; 2) to deliver a net positive contribution to environmental conservation; and 3) to improve the livelihoods of local people. She explains that ecotourism is argued to raise foreign exchange and investment on a national level, as well as generate new jobs for local people and new markets for local products and services. In addition to economic benefits, ecotourism can enhance the valuation of cultural heritage, improve community organisation and leadership, increase self-esteem and community pride, promote new skills and languages, and create better networks and support for local people (Stronza, 2008, p. 4).

Ross and Wall (1999, p. 124) argue that ecotourism is a complex phenomenon involving several actors, and unifying natural environments and local people in a symbiotic relationship through tourism activities. There are discrepancies in the criteria and different perspectives of ecotourism which has led to confusion between ecotourism and other forms of tourism (Ross & Wall, 1999, p. 124). Fennell (2015, p. 161) argues that, studying the arguments that ecotourism is a more ethical and responsible form of tourism compared to other types of tourism, and whether ecotourists are more ethical than other tourists is important for ecotourism to be successful. According to Ross and Wall (1999, p. 124), to clarify the distinction between ecotourism and other types of tourism, proponents of ecotourism have developed value-laden ethical principles for it. Some definitions emphasise the requirement of intrinsic values (as opposed to extrinsic values), indicating a biocentric

philosophy. (Ross & Wall, 1999, p. 125.) Fennell (2015, p. 133) argues that the ethical imperative is an essential component of ecotourism and critical in understanding it both, in theory and practice. He argues that ecotourism and sustainability are not synonymous, and if ecotourism is not driven by an ethical imperative, it can be as unsustainable as other more invasive forms of tourism (p. 271). The connection between ethics and tourism is said to originate from the sociology of development studying human-human interactions, to more recent studies on human-environment interactions emphasising ethics in relation to the natural world. (Fennell, 2015, p. 133).

Ecotourism is often seen as an integrated conservation and development project, and various social and economic benefits of ecotourism are considered to encourage protecting of the natural environment that tourism depends on (Stronza, 2008, pp. 4–5). However, there are conflicting arguments over ecotourism and its benefits, and the proponents of ecotourism advocate the benefits, whereas the opponents emphasise the costs (Johnston, 2006, p. 3). While ecotourism is argued to contribute to local economies and conservation, as well as bring benefits to local people, it has been criticised for being capable of damaging the natural environment (e.g. the environmental cost of air travel, accommodation and activities on site), for the genuineness of the motivations of ecotourists, for endangering the future of indigenous tourism by the increased utilisation of sensitive natural areas, and for overemphasising its significance by global scale (as ecotourism constitutes only two to four percent of global tourism) (Gale & Hill, 2009, p. 4). Disagreements on ecotourism's benefits for local communities exist and there are arguments that the benefits have been explained mostly as employment and income, or resource use and conservation that derive from economic decision-making rather than from political, cultural and historical values (Mbaiwa & Stronza 2011, p. 337).

Also, it has been argued that ecotourism promotes “green capitalism” which ultimately favours profits over conservation, and is embedded in neoliberalism and economic system which obstructs real respect for local cultures and real opportunities for sustainable development or empowerment of local people (Stronza, 2008, p. 6). Johnston (2006, p. 5) argues that the ecotourism industry severely impacts indigenous people, targeting and selling their sacred cultures and ancestral lands. She criticises ecotourism for using indigenous peoples in marketing and using them to “add value” to tourism products, yet suppressing their point of view and wishes, as well as excluding them from policy developments (pp. 3, 11). According to Johnston (pp. 3, 5), often, indigenous people are poorly

informed about international discussion on standards, and for those indigenous people who benefit from ecotourism, there are many others who do not. Johnston states that yet, some indigenous people embrace the term ecotourism and believe that in the hands of the community, the people can benefit from it (p. 13). However, it must not be forgotten that marketing before thorough community planning is precarious. (Johnston, 2006, p 13).

Fennell (2015, p. 273) argues that understanding that there are few other options for leadership in tourism beside ecotourism is important, not dismissing ecotourism outright. And if ecotourism is value-based in philosophy and application, it can be a useful model for development (Fennell, 2015, p. 275). According to Stronza (2008, p. 6), there are arguments that even if ecotourism was to provide for conservation, the direct impacts of the industry are more damaging than beneficial. Yet, there are still many advocates of ecotourism who argue that it is an effective tool for conservation and sustainable development, as it can connect economic benefits, local people and biodiversity conservation (Stronza, 2008, p. 6).

Hughes et al. (2011, p. 310) state that regardless of the argued benefits of ecotourism to the natural and social environment, the theories remain widely untested, and not much evidence exist on the relationships between ecotourism and positive changes in tourists' environmental attitudes and behaviours. There is a lack of understanding about the connections between knowledge, attitudes and consequent conservation behaviour, and there is no evidence whether interpretation can encourage visitors to be concerned about other places than the actual interpretation site (Hughes et al., 2011, p. 310). According to Powell and Ham (2008, p. 468), research has mainly focused on the potential positive economic impacts and the possible negative bio-physical and social impacts of nature-based tourism, and research on ecotourism's influence on visitors' knowledge, attitudes and behaviours have found mixed results. Predominantly, the research indicates that there can be increase in knowledge but environmental attitudes and behaviours remain the same (Powell & Ham, 2008, p. 469).

2.2 The Relationship between Ecotourism and Conservation

Tourism and biodiversity are in a symbiotic relationship, as both have elements that interact with or are reliant on each other (Hudson & Lee, 2010, p. 39). As interest in ecotourism activities and public awareness of environmental responsibility have grown in recent years, its aspects of environmental education and conservation appear even more important. Environmental education contributes to conservation, as it promotes knowledge about natural environments and encourages pro-environmental behaviour. Conservation is considered to be one of the parameters to define ecotourism, and there are countless examples in the literature of ecotourism supporting conservation initiatives (Fennell, 2015, p. 99). Conservationists generally argue that to sustain a healthy physical environment and to support natural resources requires the preservation of biodiversity, as ecosystems and living organisms in them cannot function without their vital parts (Shani & Pizam, 2010, p. 285). United Nations Environment Programme (UNEP) defines biodiversity (biological diversity) as: “the variety of life on Earth. It includes all organisms, species and populations, the genetic variation among these, and their complex assemblages of communities and ecosystems” (United Nations Environment Programme [UNEP], 2010, p. 2). Biodiversity can be formed into three levels: 1) ecosystems diversity (e.g. rainforest and grasslands) 2) species diversity (individual species of plants and animals), and 3) genetic diversity (genes that compose the heredity of individuals that make up these species) (Fennell, 2015, p. 99; Rai, 2011, p. 23).

Biodiversity is valued on different levels, for example directly through food, medicine and industrial products, indirectly through ecosystem services, aesthetically, and ethically from the stewardship perspective to protect the individuals and species from destructive human actions (Fennell, 2015, p. 99). Hudson and Lee (2010, p. 40) explain that the value of biodiversity is an important discussion in relation to tourism, as ecotourism and nature-based tourism are growing industries and they rely on natural resources. They continue that besides the obvious, that biodiversity is of great value to tourism because distressed natural environment and diminished wildlife would reduce tourism’s value, it needs a clearer value for conservation and management of natural areas to receive public funding. Hudson and Lee also argue that when economic value is placed on biodiversity in terms of conservation and sustainable use of resources, there can be a better understanding between developers and conservationists. However, indicating the value of biodiversity is challenging as it is a non-market good, and economic value is just one value among many

other values related to the natural environment (Hudson & Lee, 2010, p. 40). Also, Fennell (2015, p. 91) argues that it should be understood that the species with which humans share the ecosystems, have an inherent value and should be regarded as important parts of the environment.

Biodiversity conservation results from better understanding the needs for conservation of the biodiversity and is generated from the concepts of conservation of national parks and wilderness, wildlife, landscapes, and ecosystems (Rai, 2011, p. 12). Fennell (2015, p. 100) discusses that the biggest human-impacted contributors to biodiversity losses include habitat destruction, the introduction of invasive species, pollution, population increase and over-harvesting of species. This can manifest e.g. as illegal hunting and exchange of certain species, deforestation, releasing agricultural runoff into water and soil, and as lack of regulations for tourism development (Fennell, 2015, p. 100). Hudson and Lee (2010, p. 40) argue that due to the complexity of tourism industry, the form of the tourism activity, and the different natural environments in which it operates, the concept of biodiversity in the context of tourism is seen complex. The environments where tourism connects with biodiversity are for example National Parks, World Heritage Sites, Conservation Zones, and non-protected areas where activities such as wildlife tours take place (Hudson & Lee, 2010, p. 40).

Tourism is often regarded as a tool for conservation, both as a purpose itself and in financial terms (Jamal & Robinson, 2011, p. 15), as it can create a demand for conservation and motivate funding that enables greater opportunity for conservation (Orbasli & Woodward, 2011, p. 323). Orbasli and Woodward (2011, p. 324) argue that tourism has an important role in what is conserved and how it is conserved. According to Hudson and Lee (2010, p. 39), the tourism industry contributes to achieving sustainable development and promoting protected area management, and tourism and biodiversity are mutually benefitting as they share values and rely on each other. Biodiversity has important value for tourism and tourism can offer valuable tools for preserving biodiversity (Hudson & Lee, 2010, p. 39). Dologlou and Katsoni (2016, p. 2) argue that ecotourism is the most suitable form of tourism in protected areas, as it supports both, environmental conservation and local communities. Tourism should contribute to conservation of biodiversity and cultural heritage, as well as improve the quality of life of local communities, support indigenous people's traditions, customs and values, protect and respect sacred sites, and recognise traditional knowledge (Bushell & McCool, 2006, p. 12).

In order for a tourism activity to be ecotourism, conservation effort in the form of monetary contribution or particular projects must be included in the activity by the ecotourist and/or the service provider (Fennell, 2015, p. 37). Ecotourism is seen to provide economic encouragement for local people to safeguard biodiversity, i.e. to act as a tool for conservation (Mbaiwa & Stronza, 2011, p. 337), and to promote pro-environmental behaviours through interpretation (Gale and Hill, 2009, p. 9). According to UNWTO, ecotourism supports the conservation of natural areas where it takes place by “generating economic benefits for host communities, organisations and authorities managing natural areas with conservation purposes; providing alternative employment and income opportunities for local communities; and increasing awareness towards the conservation of natural and cultural assets, both among locals and tourists”. The International Union for Conservation of Nature (IUCN) has adopted the previously mentioned definition of ecotourism by Hector Ceballos-Lascurain stating that ecotourism is:

Environmentally responsible travel and visitation to relatively undisturbed natural areas, in order to enjoy and appreciate nature (and any accompanying cultural features - both past and present) that promotes conservation, has low negative visitor impact, and provides for beneficially active socio-economic involvement of local populations (Dologlou & Katsoni, 2016, p. 4–5).

Ecotourism promises to promote conservation goals and improve the livelihoods of local communities by minimising the negative impacts of tourism and contributing positively to different environmental and social challenges (Stronza, 2008, p. 4). Also, it can be an advocate for biodiversity conservation by influencing national policy; e.g. resisting natural resource exploration in certain biodiversity-rich areas, or establishing conservation areas as part of tourism development (Kiss, 2004, p. 233). Kiss (2004, p. 233) explains that conservation through ecotourism is often funded to reduce local threats to biodiversity (e.g. expanding agriculture, unsustainable harvesting of wild plants and animals, and killing of animals that threaten agriculture and farming). Thus, it can be argued that ecotourism offers both, “an incentive for conservation and an economic alternative to destructive practices” (Kiss, 2004, p. 233). Table 2. indicates the benefits of ecotourism to biodiversity conservation.

Table 2. Ecotourism's contribution to conservation. Source: Rai, 2011, p. 17

How ecotourism can contribute to biodiversity conservation:
<ul style="list-style-type: none"> • Offer less destructive livelihood alternatives to local communities and land-owners in buffer zones and conservation corridors
<ul style="list-style-type: none"> • Encourage public and private land owners in critical ecosystems to permanently conserve biodiversity-rich properties by offering revenue-producing, low-impact economic use
<ul style="list-style-type: none"> • Provide additional financial resources to protected areas from visitation and donations
<ul style="list-style-type: none"> • Raise environmental awareness, promote community involvement and conservation, and create political support in conservation through environmental education

However, Kiss (2004, p. 234) also argues that there are many claims on conservation benefits in the literature, but they lack of data and quantitative analysis. Stronza (2008, p. 7) argues that the relations between ecotourism and conservation have been criticised for being inadequate and defective. There is evidence that economic benefits from ecotourism are insufficient to provide for conservation, and in many protected areas tourism revenues cannot cover even the basic management costs (Stronza, 2008, p. 7). Also, ecotourism has gained criticism for its market-based conservation strategies, claiming that they do not advise “how to protect aspects of nature that conflict with, or are neutral to human interests”, and arguing that ethics and aesthetics should have the most important role in conservation in order to have long-lasting benefits in conservation (Mondino & Beery, 2018, p. 2). In some cases, tourism is not a significant improvement to existing land uses (e.g. extensive pastoralism), because if substantial changes over a large area are required to achieve conservation benefits, ecotourism is not likely to be an effective tool, as it rarely displaces existing land uses or economic activities on a significant scale (Kiss, 2004, p. 233).

When discussing biodiversity in the context of tourism, the role of protected areas and the contribution of tourism to conservation are the central topics (Hudson & Lee, 2010, p. 41). National parks and other protected areas play an important role in slowing down the loss of biodiversity by conserving sensitive ecosystems (Green, 2014, p. 68; Scanavis

& Giannoulis, 2010, p. 50). Park visitation and nature-based tourism contribute to promoting conservation of the natural environment and cultural heritage, and tourism should raise awareness of important values associated with protected areas, such as ecological, cultural, sacred, spiritual, aesthetic, recreational and economic values (Bushell & McCool, 2006, p. 12). Regarding biodiversity as both, a local common resource and a global heritage is vital to the conservation of national parks and protected areas, and to its role in development decision-making. (Rettie, Clevenger, & Ford, 2011, p. 397).

Increased visitor numbers can strain the conservation of protected areas (Rettie et al., 2011, p. 396). However, Ross and Wall (1999, p. 129) mention that tourism revenues can contribute significantly to the costs of managing protected areas. The amount of revenues directed to conservation depends on the type of management objectives and the type and amounts of revenues sought. (Ross & Wall, 1999, p. 129). Government funding for conservation often tends to endorse sites that are or can be popular tourist attractions (Orbasli & Woodward, 2011, p. 324). Bushell and McCool (2006, p. 12) argue that the success in conservation requires involvement of local people, the tourism industry, natural resource management agencies, the scientific community, as well as governments and international agencies involved in natural and cultural heritage. All stakeholders involved should accept and endorse tourism opportunities that aim to benefit conservation (Bushell & McCool, 2006, p. 12). Rettie et al. (2011, p. 397) also argue that public support is needed to address the conservation challenges in national parks. They believe public involvement and understanding is critical. Shared knowledge promotes the public's awareness of management actions and involvement and support in decision-making in natural resource management (Rettie et al., 2011, p. 399). According to Kiss (2004, p. 234) ecotourism can support conservation among communities if they benefit from it at some level, and if it does not endanger their primary source of livelihood. She argues that effective conservation and successful ecotourism require some sacrifice, as well as existing knowledge and experience.

2.3 Ecotourism from an Educational Perspective

Many of the definitions of ecotourism (as discussed in chapter 2.1) include the aspect of environmental education, focusing on improving visitors' as well as locals' environmental knowledge. Providing environmental education through increasing opportunities to appreciate nature is an important factor in ecotourism (Ross & Wall, 1999, p. 129). Learning is an essential part of ecotourism, and also an attribute that differentiates it from other forms of nature-based tourism (Fennell, 2015, p.110). Economic revenues gained from ecotourism activities contribute to conservation of the protected area (Ross & Wall, 1999, p. 129). It is argued that genuine ecotourism promotes education and ensures that visitors are committed to the protection of the area visited (Beaumont, 2001, p. 320). Environmentally responsible individuals are knowledgeable and concerned about the environment, and avoid engaging in behaviour that could damage the environment (Chiu, Lee & Chen, 2014, p. 879). Fennell (2015, p. 91) argues that to protect the environment efficiently, it is necessary to understand the scientific relationships and processes taking place in those environments. According to Beaumont (2001, p. 317) the environmental education element of ecotourism promotes appreciation and knowledge of natural environments and encourages pro-environmental attitudes and behaviour. Environmental education together with first-hand nature experiences are argued to foster these attitudes and outcomes (Beaumont, 2001, p. 318). Chiu et al. (2014, p. 879) also emphasise the role of experience and participation in nature in promoting environmentally responsible behaviour.

Blamey (2001, p. 9) explains that learning in ecotourism includes education and interpretation about the natural and cultural environment. He adds that education is based on learning objectives and is a conscious, planned, subsequent and systematic process (p. 8). Interpretation in turn, is an educational activity explaining meanings and relationships by using objects, experience and illustrative media (Blamey, 2001, p. 8–9). According to Beaumont (2001, p. 320), the experiential nature of education in ecotourism is regarded more efficient in changing attitudes than conventional learning methods. It is argued that pleasant experiences in nature while learning about the natural environment, can create a positive relationship with it, and enhance the valuation of and desire to protect it, as people tend to understand the values connected to nature better when they experience it first-hand (Beaumont, 2001, p. 320). An ongoing interest in protecting and preserving things can be acquired through experiences which have a strong influence on attitude formation

(Ting & Chen, 2017, p. 1213). Ross and Wall (1999, p. 129) state that environmental education in protected areas should introduce “transformative values”, i.e. values that generate greater environmental awareness and respect for nature, to promote environmental stewardship for both, locals and visitors. According to Hughes et al. (2011, p. 309), environmental education researchers argue that the importance of emotions should be included when studying conservation attitudes, as attitudes are largely affective in nature. Engaging visitors on an emotional level can stimulate conservation intentions. (Hughes et al., 2011, p. 310).

According to Blamey (2001, p. 9), there are two main purposes of environmental education in the ecotourism context: 1) satisfying tourist demand for information on natural and cultural attractions while providing a satisfying recreational experience, and 2) promoting pro-environmental knowledge, attitudes and behaviour aiming to minimise negative impacts and create more environmentally and culturally conscious visitors. These are often related, but education can also be environmentally informative without being environmentally supportive (Blamey, 2001, p. 9). Ecotourism providers and guides play an important role in learning, but so do interpretation (signs, viewing platforms, brochures), ecolodges, word of mouth, and personal observations among others (Fennell, 2015, p. 110). Weaver (2004, p. 441) explains that learning opportunities can involve the provision of rigidly formal product interpretation through, e.g. permanent signage and scripted lectures delivered at prescribed times, or they can involve informal opportunities that entail the maintenance of conditions (e.g. trails designed to minimise exposure to others) that facilitate highly personal and unstructured interactions with and appreciation of the natural environment. Learning can also include options such as informal and interactive guided tours, as well as brochures and guidebooks concurrently with interactions with nature (Weaver, 2004, p. 441).

Blamey (2001, p. 9) states that the primary motivation of tourists to participate in an ecotourism activity is learning about the plants, animals and the landscape of the area. The second purpose of environmental education, promoting pro-environmental knowledge, attitudes and behaviour, is accomplished e.g. by educating tourists about how to minimise impacts while on site and presenting code of ethics for tourist conduct, or by providing information on ecological relationships and threats (Blamey, 2001, p. 9). Knowledge must be communicated in a way that promotes positive attitudes and behaviour in ecotourists, and should include educational information on the natural, cultural and historical

aspects of the site, as well as appropriate behaviour in the area (Fennell, 2015, p. 115). Weaver (2004, p. 441) argues that interpretation should provide at least a basic understanding of the particular natural and cultural attraction. Also, local communities can be involved in ecotourism education regarding sensitive natural areas and how to best protect these areas (Blamey, 2001, p. 10). Fennell (2015, p. 115) states that ecotourism sites must be sensitive to learning and behavioural and emotional sides of interpretation both, as art and science to manage the site effectively.

Interpretation plays an important role in ecotourism sites and can evoke more interest in broader environmental issues and conservation (Fennell, 2015, p. 116). It is used as a tool for educating visitors and managing visitor behaviours towards important resources (Powell & Ham, 2008, p. 468), and for minimising the environmental impact of visitors in protected areas (Littlefair, 2004, p. 297). Littlefair (2004, p. 297) explains that interpretation is often used as a management tool in natural areas for its cost-effectiveness, gentle approach allowing visitors the freedom of choice, and for enhancing visitor experiences and satisfaction. Freeman Tilden (as cited in Scanavis & Giannoulis, 2010, p. 50) first defined environmental interpretation as: “an educational activity which aims to reveal meanings and relationships through the use of original objects, by first hand experiences and by illustrative media, rather than simply to communicate factual information”. According to Scanavis and Giannoulis (2010, p. 50) interpretation derives from the need to conserve and manage natural environments, while improving visitor experiences, and the purpose is to promote responsibility and stewardship toward the natural resource. In addition to supporting conservation of the specific natural environment or resource, definitions of interpretation often include supporting conservation values and principles in general (Beaumont, 2001, p. 320).

Littlefair (2004, p. 297) describe that the objectives of interpretation are categorised generally into: *promotion, recreation, education, and management/conservation benefits*. Encouraging a behavioural change to minimise one’s own impacts on the environment, provoking an environmental consciousness in visitors, and increasing the motivation to commit to conservation are all conservation benefits (Littlefair, 2004, p. 297). Interpretation can be non-personal (e.g. self-guided walks with signs and displays) or personal (e.g. guides providing information) (Blamey, 2001, p. 9; Scanavis & Giannoulis, 2010, p. 50). Protected areas provide learning opportunities through conservation education (Scanavis & Giannoulis, 2010, p. 52) and can offer both, formal and informal learning opportunities

(Weaver, 2004, p. 441). According to Blamey (2001, p. 9) education and interpretation can be delivered in different forms, depending on the cognitive needs of the tourists. Learning can be passive or emphasise more on active learning and formalised education (Blamey, 2001, p. 9). Fennell (2015, pp. 116, 118) argues that the content of the message and the style of interpretation matters in interpretive design, and interpretation efforts need to correspond with the type of activity, as too much interpretation may be ineffective for visitors who are after an aesthetic and less trivial experience. Also, for interpretation to promote pro-environmental attitudes and behaviour, it should emphasise affective processes and contribute to self-discovery, participation, and sensory involvement (Beaumont, 2001, p. 321). Littlefair (2004, p. 305) argues that environmental interpretation reduces visitor impacts only when it specifically addresses those impacts during interpretation and when a positive role modelling of the appropriate behaviour is provided. The connection between the ecotourism activity and the interpretation objectives is important, as conflicting interests, such as consumptive outdoor activities in areas of ecological integrity, can produce negative feelings toward the site and its management practices (Fennell, 2015, pp. 117–118).

Fennell (2015, p. 110) argues that learning is a continual process and it has situational value. Ecotourists may or may not change their attitudes and behaviour during their ecotourism holiday, and switch back to their ordinary behaviour at home (Fennell, 2015, p. 110). Whereas, according to Hughes et al. (2011, p. 310), there is no evidence whether interpretation can encourage visitors to be concerned about other places than the interpretation site. However, there is evidence (based on the few long-term studies conducted in this area) that well-designed nature-based interpretive experiences can have an impact on visitors' consequent conservation behaviour (Hughes et al., 2011, p. 310). The effectiveness of interpretation in ecotourism settings has been criticised to be quite minimal compared to the number of messages and amount of time spent to deliver the messages (Fennell, 2015, p. 116). Also, Beaumont (2001, p. 320) states that there exists scepticism about ecotourism's capability through short interpretive programs to change environmental attitudes and behaviour. Research show that attitude change depends on various intervening factors with respect to the individual and the experience (Beaumont, 2001, p. 320). A continuous issue that remains in ecotourism is the impact of environmental education programmes on the adoption of long-term environmental responsibility, that is,

whether they have a long-lasting effect on visitors' environmental attitudes and behaviour (Fennell, 2015, p. 121).

According to Beaumont (2001, p. 322) there is a belief that the visitors participating in ecotours and interpretive programmes already hold pro-environmental knowledge and attitudes, and are involved in the natural environment, and thus, aiming to change their attitudes seems pointless. She argues that ecotourists generally are motivated to view or experience nature, and to learn about it. However, there is evidence that not all ecotourists are environmentally knowledgeable or sensitive (Beaumont, 2001, p. 322). Fennell (2015, p. 122) argues that even though, the hard-path ecotourists' environmental attitudes and behaviours are in place pre- and post-trip due to existing environmental ethics, the majority of visitors modify their attitudes and behaviours conforming to what they think is expected in the situation (during the ecotourism activity). When back home, they return to their conventional, less environmentally friendly behaviour (Fennell, 2015, p. 122). Beaumont (2001, p. 232) explains that those tourists participating in short interpretive programmes and diverse nature-based activities are less involved in conservation. In addition, intentions do not always lead to actions (Fennell, 2011, p. 122). Also, there is evidence that tourists whose major destination is a national park are more eccentric in their views than those who visit the park in large groups as part of the overall trip (Beaumont, 2001, p. 323). Hughes et al. (2011, pp. 310–311) accordingly note that it is important to take into account how the majority of ecotourists can be encouraged to adopt conservation behaviour, what tools are needed to stimulate and support visitor learning, and which messages and actions are the most effective.

3. WHAT IS PLAY-BASED LEARNING?

3.1 Conceptualising Play-based Learning

“In their play, children are a head taller than themselves”
(Vygotsky as cited in Pound, 2006, p. 75)

The impact of play on children’s learning and development, and the overall importance of play in childhood are emphasised in many global discourses (Skolnick Weisberg, Hirsh-Pasek, Michnick-Golinkoff, Kittredge, & Klarh, 2016, p. 177; Wood, 2010, p. 14) and grounded in the substantial body of research (Bento & Dias, 2017, p. 157). According to Moyles (2010a, p. 3), research shows that play, exploration, talk and interaction with others, contribute fundamentally to children’s sensory, cognitive and linguistic growth. She explains that each child learns differently and the cultural background impacts children’s development and learning (p. 3), and argues that children have a natural inclination to play, to be curious and inventive, and to learn (p. 291). Many researches argue for the various benefits of play-based learning (Fesseha & Pyle, 2016, p. 364). Moyles (2010a, p. 293) presents that play allows children to understand that learning is enjoyable, personally rewarding and beneficial, and challenging. Research shows that children who are free to develop their own ideas and learning through play become more motivated and competent in cognitive and social skills (Moyles, 2010a, p. 293).

From an educational perspective, play-based learning is widely discussed in early childhood research and its implementation supported in early childhood educational settings (Fesseha & Pyle, 2016, p. 364). A significant amount of the research on play and play-based learning is discussed in the context of early childhood pedagogy and early childhood education settings. According to Pramling Samuelsson and Johansson (2006, p. 48), play has an important role in early childhood education as it is highly valued and considered as an expression for children’s actions, their own creation of meaning, their work, and a natural way of acting in their environments. They argue that today, play and learning are considered as two interrelated phenomena. Play is an essential part of the learning process and included in many national early childhood curricula (Pramling Samuelsson & Johansson, 2006, p. 49). For example, Finland, Sweden and Australia have a national learning framework for early childhood education that emphasises the importance of play in the curriculum (Australian Government Department of Education and Training [DoE], 2019; Finnish National Agency for Education [OPH], 2018; the Swedish National

Agency for Education [Skolverket], 2010). Moyles (2010a, p. 2) explains that there are several initiatives that place play in the centre of the early childhood curriculum, and play-based, child-initiated curriculum has become one of the leading pedagogical approaches in early learning across the world, e.g. Reggio Emilia and Te Whāriki approaches (see Pound, 2006, pp. 54, 68). These kinds of approaches are described as “the antithesis of the one-size-fits-all model of learning” (Moyles, 2010a, p. 2).

Cutter-Mackenzie and Edwards (2013, p. 197) discuss that the basis for research and discussion in early childhood education is the understanding, positioning and defining of play in relation to pedagogy. Open-ended play has been considered the core of pedagogy, arguing that it enables exploration and discovery, both essential in supporting learning (Cutter-Mackenzie & Edwards, 2013, p. 197). Moyles (2010a, p. 8) explains that play-based learning values children’s input in their own learning and supports them to take ownership of the activities, resulting in better outcomes in learning. According to Jordan (2010, p. 98), through play, children also learn who they are as individuals and how they should interact with others in different contexts. Children learn cultural tools (e.g. activities, interactions, and understandings that are appropriate and acceptable in everyday settings) in their families, communities and early childhood settings (Jordan, 2010, p. 98). Wood (2010, p. 14) argues that in education, play and capacity to play are considered significant for children’s immediate and future development in relation to social, educational and economic goals. Early life experiences impact the way children are able to play and those who cannot play can face difficulties in forming relationships and learning new things (Wood, 2010, p. 14). It is said that children who play together learn to work together (Michnick Golinkoff, Hirsh-Pasek, & Singer, 2006, p. 4). Even though, play is not the only approach to learning, it is an important pedagogical strategy for developing deeper learning in children (Moyles, 2010a, p. 8). Play as a tool for learning in early childhood education has dominated since the early twenty-first century in Europe, America and Australasia (Brooker, 2010, p. 40).

The theory that well-planned play is a key to children’s learning stems from several fields (Brooker, 2010, p. 40). However, early childhood practice in Western societies has been shaped primarily by a constructivist philosophy of learning and play, originating from the works of Piaget and Vygotsky, and other academics influenced by their work (Trudell, 2010, p. 198). According to Smith (2010, p. 32), both, Piaget and Vygotsky examined the nature of play, the immediate psychological mechanisms for playing, and the

relationships between play, thought and language. Their work concentrated mainly on object and pretend play, as they were considered particularly more human forms of play and regarded as educationally relevant (Smith, 2010, p. 32).

Fesseha and Pyle (2016, p. 363) explain that play-based learning can be viewed from multiple theoretical perspectives (e.g. cognitive, emotional and pedagogic). The implementation of play-based pedagogy can be challenging and confusing due to the different foundations of these perspectives (Fesseha & Pyle, 2016, p. 364). According to Jordan (2010, p. 96) socio-cultural-historical theories have contributed to the understanding of children's play and adults' role in it, reflecting the cultural and socially constructed nature of learning. Shared and collective use of tools (physical and psychological) in children's play impact how they are socialised, how they learn to use signs and concepts, and how they pass this knowledge forward to the next generation (Jordan, 2010, p. 96). Fesseha and Pyle (2016, p. 364) argue that the socio-cultural perspective focuses on the classroom environment and students' interaction with the environment through play-based pedagogy, removing accountability from the teacher and curriculum. They further discuss that education theoretical perspective views play-based learning in relation to academic content and "its ability to extend the learning of subjects taught in the classroom". Whereas, from the psychological perspective, the benefits and disadvantages of play-based learning are studied within the context of human behaviour and mental processes (Fesseha & Pyle, 2016, p. 364).

According to Cutter-Mackenzie and Edwards (2013, p. 197), play, as a tool for learning, has been discussed in relation to concepts such as sustained-shared thinking, co-constructing knowledge, and the development of contextual inter-subjectivity between children and adults during play. There are three factors in play-based learning that research increasingly refers to: 1) the importance of interaction and relationships between children and adults to support learning, 2) play and play-based learning are culturally and contextually negotiated, and 3) play is not gender or value neutral, and power relationships between children and teacher prevents it being "free". (Cutter-Mackenzie & Edwards, 2013, p. 197). Wood (2004, as cited in Fesseha & Pyle, 2016, p. 363) defines play-based pedagogy as:

The ways in which early childhood professionals make provisions for play and playful approaches to learning and teaching, how they design play-based learning

environments, and all the pedagogical decisions, techniques and strategies they use to support or enhance learning and teaching through play.

Fesseha and Pyle (2016, p. 373) explain that child-directedness and enjoyment are common elements in most definitions of play-based learning. However, they argue that play-based learning requires adult support and intentionality in the planning of play context. They explain that research shows that play becomes play-based learning only if academic skill development occurs. Hence, teachers' involvement in creating a purposeful environment and extending children's play is crucial (Fesseha & Pyle, 2016, p. 373). Also, according to Cutter-Mackenzie and Edwards (2013, p. 197) research has challenged the extent that open-ended play can contribute to engaging and building knowledge. They argue that there is an increasing amount of evidence that adult interaction and engagement in play support young children's learning.

For their part, Skolnick Weisberg and Zosh (2018, pp. 1–2) argue that research on the role of play in children's learning is still divided as science has not proved the benefits of play in learning, particularly for improving problem-solving and teaching content knowledge. Furthermore, Fesseha and Pyle (2016, p. 362) argue that despite the benefits of play-based learning and its incorporation into early years education, its implementation is inconsistent and unclear. They add that often, the implementation does not equal proper play practices and is applied separately from actual learning. Part of the reason behind the lack of proper application of play in learning is the confusion of the definition of play and teachers' misunderstandings about their role during play (Fesseha & Pyle, 2016, p. 363). It has been suggested also, that open-ended play is socio-culturally bound and therefore, not familiar to all children (Cutter-Mackenzie and Edwards 2013, p. 197). In addition, there are some researches who argue that even though play-based learning is beneficial, play should only be the work of children (Fesseha & Pyle, 2016, p. 363). However, Bruce (2010, p. 288) argues that if play is encouraged, supported and extended, it can contribute greatly to the development of children, and to humanity as a whole.

3.2 Defining Play

Free-flow play is conducted by children in all parts of the world and is part of being human (Bruce, 2010, p. 285). The National Core Curriculum for Early Childhood Education and Care by Finnish National Agency for Education (OPH) (2018, p. 38) explain that for children, play is a way of being and understanding the world, and it is primed by emotive, interesting and inquisitive experiences, and brings pleasure and joy for children. Children are the active agents in play (OPH, 2018 p. 38). According to Elkonin (1978, as cited in Moyles, 2010b, p. 2), “play prepares the child’s mind for the learning tasks of today”. Through play, children can structure and explore the world around them, create social relationships, and gain understanding of themselves and other people (OPH, 2018, p. 38). Wood (2010, p. 18) argues that play can be seen as collective, relational activity determined by its social, cultural and historical context, and influenced by individual’s experiences and identity. Moyles (2010a, p. 5) argues that play should be considered as a process that includes various behaviours, dispositions, motivations, opportunities, practices, skills, and understandings, and that children, individually and together, display essential cognitive and physical abilities through play.

Play is a complex concept and phenomenon, and it has more than one meaning in terms of its context, social interactions, symbolic meanings, communicative languages and accessibility (Fesseha & Pyle, 2016, p. 362; Wood, 2010, p 19). Bruce (2010, p. 285) argues that because play is studied through different lenses, and viewed differently, it can be encouraged, discouraged, constrained or valued in different ways which in turn, affects children’s access to play. The psychological understanding of play as a voluntary process stimulated by emotional experiences and pleasure, is generally agreed upon (Fesseha & Pyle, 2016, p. 362.). Play is considered an effective mechanism to access symbolic and physical functioning of high level (Bruce, 2010, p. 285). According to Michnick Golinkoff et al. (2006, p. 6), play is important to children’s mental health and it offers both, social and cognitive benefits for children’s development. Play contributes to building social competence and confidence in dealing with other people, and is essential in self-regulation and children’s ability to manage their own behaviour and emotions (Michnick Golinkoff, et al., 2006, p. 7). As play is safe, children can address difficult experiences, try, experiment, and fail (OPH, 2018, p. 39).

The way play is perceived and valued differs over time and between cultures (Sandberg & Vuorinen, 2010, p. 55). Vygotsky viewed play as a combination of affective and cognitive aspects of development, and regarded it as the principal source of development (Smith, 2010, p. 32). According to Fleer (2010a, p. 67), Vygotsky perceived play in a way that psychological functioning and external activity formed together. He argued that the cognitive dimensions of play cannot be disconnected from the affective dimensions of play (Fleer, 2010a, p. 67) because in pretend play, a child can free him/herself from the immediate constraints of the situation and embrace the world of ideas (Smith, 2010, p. 32). According to Vygotsky's theory (as cited in Smith, 2010, p. 32), in pretend play, an object is used to represent another (e.g. a stick as a horse) and the substitute object separates the meaning from the object itself. The child is freed from restraints relating to that specific situation through the activity in an imaginary situation (Smith, 2010, p. 32). According to Jahreie, Arnseth, Kränge, Smørdal and Kruge (2011 p. 3), Vygotsky argues that through play, children participate in institutional life as when they are playing, they switch to a conceptual world and embrace the premises of the play activity. Vygotsky (1978, as cited in Jahreie et al., 2011 p. 3) explains:

In play thought is separated from objects and action arises from ideas rather than things: a piece of wood begins to be a doll and a stick becomes a horse. Action according to rules begins to be determined by ideas and not by objects themselves.

Piaget in turn, viewed play as an activity in which children present established behaviours and adjust reality to fit them, i.e. play is assimilation (Smith, 2010, p. 34). Piaget (1999, p. 104) explains that imitation is a continuation of accommodation, play is a continuation of assimilation, and intelligence is a balanced combination of the two. He describes:

Play in its initial stages being merely the pole of the behaviours defined by assimilation, almost all the behaviours... in relation to intelligence are susceptible of becoming play as soon as they are repeated for mere assimilation, i.e., purely for functional pleasure (Piaget, 1999, p. 89).

Smith (2010, p. 34) argues that Piaget saw pretend play as negative in essence and something that needed to be conquered by adaptive coping as the child gets older. Smith also argues that Vygotsky had a more positive perspective on pretend play, describing it as a liberative source of imagination and creativity. As children get older, pretence has a positive part in the cognitive functioning of adults (Smith, 2010, p. 34). Vygotsky's theory of play distinguishes how play development is endorsed by teachers and applied by children (Fleer, 2010b, p. 122). According to both, Piaget and Vygotsky, children can learn

more about their world, learn to adapt new ideas and foster their imaginations through play (Michnick Golinkoff et al., 2006, p. 8).

Smith and Pellegrini (2008, p. 1) define play as activity in which the process holds more importance than the end or goal. They explain that play is flexible and it has a positive impact on the children. According to Smith (2010, p. 4) in the functional approach to play, it is seen as not having an apparent end or an external goal. Hence, if an external goal (e.g. need to eat or to seek comfort) is present, then the behaviour is not play (Smith, 2010, p. 4). Developmentally, play is very frequent between the ages two and six, (Smith & Pellegrini, 2008, p. 1) and when children develop more, play becomes more abstract and rules have a more significant role in it (Jahreie et al., 2011 p. 3).

According to Wood (2010, p. 14), from philosophical idealism and humanitarianism perspective, play is seen in an existentialist way, as a state of mind and being. She argues that through play, children can reveal and realise their inner power and potential and are receptive to spontaneous development of ideas and opportunities creating their own meanings, symbols and rules. However, the philosophical idea of free play has been criticised as restrictive definition as it does not take into account sufficiently the socio-cultural-historical context in which play happens as well as the power relationships elemental to play (Wood, 2010, p. 15). Van Oers (2010, p. 196) also argues that the naturalistic and romantic conceptions of play which dominated the research, theory and practice of play in the nineteenth and twentieth centuries, are inapplicable as they lack the understanding of the cultural dimensions of play and connecting play with culture. He explains that the understanding of play changes across history and cultures, and is dependent on the historical, ideological and economic context in which it occurs. As such, it is understood that play is a socio-cultural-historical construct (Jordan, 2010, p. 96). Also, Elkonin, (as cited in Fleer, 2010b, p. 123) acknowledges that it is essential to perceive the origins of play as both historical and socio-cultural.

Contemporary socio-cultural studies show that culture and play are connected in a strong intrinsic manner, both in relation to the content and frequency of play (Van Oers, 2010, p. 196). The socio-cultural perspective considers play as purposeless action against the perspective of play as a tool for learning (Fesseha & Pyle, 2016, p. 363). The social and cultural contexts affect play with respect to which children's choices are preferred and which children influence the choice of friendship groups, play materials and activities, as

well as their uses (Wood, 2010, p. 15). Play can be considered a cultural invention through which children can access cultural experiences safely and freely to explore different actions (Van Oers, 2010, p. 196). According to Fleer (2010b, p. 21), children engage in activities within the social world, working together with others, and are socially primed to notice certain activities in their social world. They imitate familiar and important activities creating a motive for playing and social meaning about the rules of the play and concurrently, of their social world. (Fleer, 2010b, p. 22).

When children play, they imitate, create something new, and modify already existing knowledge. Imagination enables children to try different roles and ideas that would otherwise be left unexplored (OPH, 2018, p. 39). Also, Fleer (2010b, p. 22) emphasises the importance of the concept of motives in understanding play and how it supports development in children. Leontiev (1978, as cited in Fleer, 2010b, p. 22) explained that:

The object of an activity is its true motive. It is understood that the motive may be either material or ideal, either present in perception or existing only in the imagination or in thought. The main thing is that behind activity there should always be a need, that it should always answer one need or another. (Fleer, 2010b, p. 22)

Leontiev's theory suggests that every activity is driven by distinct motives deriving from the material world, and thus, motives are socially constructed in the human world and individual activities reflect these social processes. Motive is created through observing and participating in an activity and is important in understanding play (Fleer, 2010b, p. 23). According to Moyles (2010a, p. 7), research indicates that children's pretend play (role play) contributes to early literacy skills, mathematical thinking and problem solving, as well as text comprehension, metalinguistic awareness, and understanding of the purposes of reading and writing. There is evidence that play provides strong understanding, enjoyment and disposition for learning (Moyles, 2010a, p. 7). Fleer (2010b, p. 123) argues that role play is the core of the socio-cultural theory of play, the basic unit of play being people and human relations. In play, the role of adults is important to help children to explore human activities and thus, understand general human relations in the society (Fleer, 2010b, p. 123).

Table 3. Types of play. Source: Smith & Pellegrini, 2008, pp. 1–2.

Type of play	Characteristics of the play
Locomotor play	Exercise play
Social play	Playful interactions
Object play	Use of objects
Language play	Talking and using language humorously
Pretend play	Pretending with objects and others, role play

There is no universally agreed typology of the types of play. However, there are commonly recognised children’s plays that can overlap (Smith, 2010, p. 8), listed in table 3. Smith and Pellegrini (2008, p. 1) categorise different types of play into *locomotor play*, *social play*, *object play*, *language play*, and *pretend play*. According to them, locomotor play refers to exercise play that involves body activity and supports physical training of muscles, for strength, endurance and skills. They explain it increases from toddler to pre-school, culminates around early primary school age, and later declines (pp. 1–2). Smith and Pellegrini (2008, p. 2) define social play as playful interactions, between children and caregivers in children up to 2 years, but more with other children from 2 to 6 years when social play increases. They explain that parallel play, when children play next to others not interacting much, is common in children between 2 and 3 years. And add that at the age of 3 or 4, playgroup can consist of three or more people. They state that some play is solitary, and it can be physical, include objects or language, be pretend, or include all three features. Object play is playful use of objects (blocks, puzzles, cars, dolls etc) and allows children to experiment with new combinations of actions and can help develop problem solving skills (Smith & Pellegrini, 2008, p. 2).

According to Smith and Pellegrini (2008, p. 2), at around 2 years, children often talk to themselves before going to sleep or when waking up (playful, repetitive talk with laughter sometimes), and at around 3 and 4 years, children use language humorously (e.g. rhyming). Smith and Pellegrini define this as language play, explaining that language skills develop rapidly in the preschool years and sociodramatic play contributes to it significantly. They define pretend play as pretending an object or action is something else than it is (e.g. a banana is a telephone), explaining that it develops from 15 months of age from simple actions to longer story sequences and role play. Sociodramatic play is pretend play

with others (from around 3 years), with sustained role taking and narrative line, and in which children negotiate meanings and roles and argue about appropriate behaviour (Smith & Pellegrini, 2008, p. 2). Smith (2010, p. 8) includes *social contingency play* and *sensorimotor play* in his typology of the types of play. *Social contingency play* refers to simple games (e.g. peek-a-boo) with enjoyment in the responses of others, contingent on the behaviour or on imitation of one person by another, and *sensorimotor play* refers to activities with objects based on the sensory objects and typical up to 2 years (e.g. sucking or banging objects together).

3.3 Learning through Play

Learning can be viewed as transmission, generally known as pedagogy, adult-led action to generate learning, and as acquisition, child-led spontaneous, voluntary and exploratory play that depending on the context, is or is not regarded as instructional (Brooker, 2010, p. 41). Research on children's learning from the last decades is indisputable: when children are in an environment where learning occurs in a meaningful context, where they have choices and they are encouraged to follow their own interests, learning occurs best (Michnick Golinkoff et al., 2006, p. 9). In a learning process, thinking is combined with experiences to create understanding (Rona, Foster, & O'Neill, 2018, p. 70). Research indicate that play promotes learning (Michnick Golinkoff et al., 2006, p. 9). Play is the most natural way children learn (Moyles, 2010b, p. 1) and the principal elements of learning, enthusiasm, doing together and challenging one's own skills, are all present in play (OPH, 2018, p. 39).

Pramling Samuelsson and Johansson (2006, p. 50) argue that the development and learning are viewed increasingly as interdependent parts of human activities: when children develop, they learn, and when they learn, they develop. Therefore, play and learning can be considered inseparable and related to how children see the world around them (Pramling Samuelsson and Johansson, 2006, p. 50). Play enhances children's learning and understanding as they learn from first-hand experiences, based on what they already know and can do, and it can promote creative, flexible thinking (Moyles, 2010b pp. 1–2). Cutter-Mackenzie and Edwards (2013, p. 197.) also state that early childhood education strongly values experience in children's learning. As children gain more experiences, play

develops and forms (OPH, 2018, p. 39). Pedagogical play considers different types of play as “possible informants to the early childhood curriculum which contribute to children’s capacities to engage in meaning making and develop understandings of their worlds” (Wood 2010, as cited in Cutter-Mackenzie & Edwards, 2012, p. 197). This perspective of understanding play as context specific and personally subjective acknowledges the value of both, experience (including values and action) and engagement with knowledge (Cutter-Mackenzie & Edwards, 2013, p. 198). Learning can occur in formal (e.g. schools and education centres) or informal (e.g. science and children’s museums) learning environments (Rona et al., 2018, p. 70).

According to Follari (2015, p. 84), the theory and practice of education is constantly evolving as educators attempt to create learning environments that maximise children’s skills, knowledge, attitudes, developmental outcomes, and lifelong habits. Various different theories of development and learning have influenced early childhood education for the past two decades (Follari, 2015, p. 84). Theories of learning have evolved overtime from the beginning of modern educational theory of *tabula rasa* (blank slate to be inscribed with adult knowledge), romantic proposals of Rousseau, and the pioneering efforts of child-centred education by Froebel to the free-flow play advocated by late twentieth century educators, and then, to the recent and unconventional theories of play (Brooker, 2010, p. 40). Roussou (2004, p. 4) argues that a shift from highly guided knowledge transfer to a more student-centred, open-ended, activity-based, social learning approach has occurred in education for the last couple of decades. Constructivism which is considered as one of the most influential learning theories (Follari, 2015, p. 84), has overtaken the other traditional behaviourist and cognitive learning theories, offering theoretical foundations for developing open, informal, and also virtual learning environments (Roussou, 2004, p. 5). The most influential in the formation of constructionist learning theories are Piaget and Vygotsky (Trudell, 2010, p. 198).

According to Pound (2006, p. 37), Jean Piaget’s (1896-1980) work has dominated the understanding of children’s thinking and learning since the 1960s. He was interested in the intellectual development of children, perceiving the child as constantly constructing and re-constructing reality. (Pound, 2006, p 39). According to Piaget’s theory of cognitive development, the development of cognitive structures (schemas) in the child’s mind is determined by accommodation, a process in which a child adjusts an existing schema into the nature of the environment, and assimilation, a process in which a child adapts a new

experience into an existing schema (Smith, 2010, p. 33). McLeod (2018a, p. 1–2) explains that Piaget believed cognitive development is a process that occurs due to biological maturation and interaction with the environment. The theory focuses more on development than learning of information or particular behaviour, but it has been applied to teaching and learning subsequently. (McLeod, 2018a, p. 6.) Piaget named four stages of development, from birth to adulthood: *sensorimotor stage*, *preoperational stage*, *concrete operational stage*, and *formal operational stage* (Pound, 2006, p. 39). Piaget does not give play a significant role in learning but he acknowledges that play can strengthen existing skills by repeated execution of known cognitive structures, and give a child confidence and sense of mastery, which he calls “*ego continuity*” (Smith, 2010, p. 34). Children interact with materials in the environment and construct knowledge about the world through play (Tōugu, Marcus, Haden, & Uttal, 2017, p. 10).

Piaget’s work has been criticised for putting too much emphasis on logic and mathematical thinking, and lacking emphasis on social and emotional aspects of thought, as well as over-generalising his observations and experiments (Pound, 2006, p. 39). According to McLeod (2018a, p. 7) Piaget’s methods and interpretations have been considered biased, and his stages of development have received critique for being questionable. For example, Vygotsky does not refer to stages at all, but views development as a continuous process (McLeod, 2018a, p. 7).

Pound (2006, p. 40) argues that Lev Vygotsky (1896-1934) has influenced the development of current educational theories significantly. His theory is a social constructivist perspective in which knowledge and understanding are constructed by the learner from their experiences, emphasising the contribution to learning made by others (Pound, 2006, p 41). His socio-cultural theory of learning, which recognises that learners are inseparable from the social and cultural context, has had the most prominent influence on early childhood education (Papatheodorou, 2010, p. 147). According to Pound (2006, p. 42), Vygotsky’s theories changed the way children’s interaction with others is thought in education, and resulted in peer tutoring approaches and apprenticeship view of learning. His theories contributed to Piaget’s theories and assisted others to develop new theories from Piaget’s ideas (Pound, 2006, p. 42).

However, McLeod (2018b, p. 1) argues that Vygotsky’s theories differ from Piaget’s in that he emphasises the role of culture, social factors, and adults in cognitive development

more, contradicting Piaget’s universal stages of cognitive development. According to Vygotsky, learning derives from “social interactions from guided learning within the zone of proximal development as children and their partners co-construct knowledge”. (McLeod, 2018b, p. 2.) The zone of proximal development, ZPD (see table 1.) is a gap between what a child can do alone and what they can do with the help of a more knowledgeable adult or child, *the more knowledgeable other*. Pound (2006, p. 41) explains that Vygotsky refers to this process as scaffolding (learning through instruction). Vygotsky also stresses the role of language in the development of abstract thought, as language is of social origin (Pound, 2006, p. 41). McLeod (2018b, p. 9) argues that Vygotsky’s theory has been criticised for assuming that it is culturally universal, relevant to all cultures. For example, Rogoff (1990, as cited in McLeod, 2018b, p. 9) argues that the concept of scaffolding may not be practical in all cultures for all types of learning, but observation and practice may be preferred. Vygotsky has been criticised also for emphasising the nurture side of learning (the impact of others and scaffolding), understating the role children have in their own development and learning, as well as his methodologies for being untested ideas or hypotheses, not based on empirical evidence (Pound, 2006, p. 42).

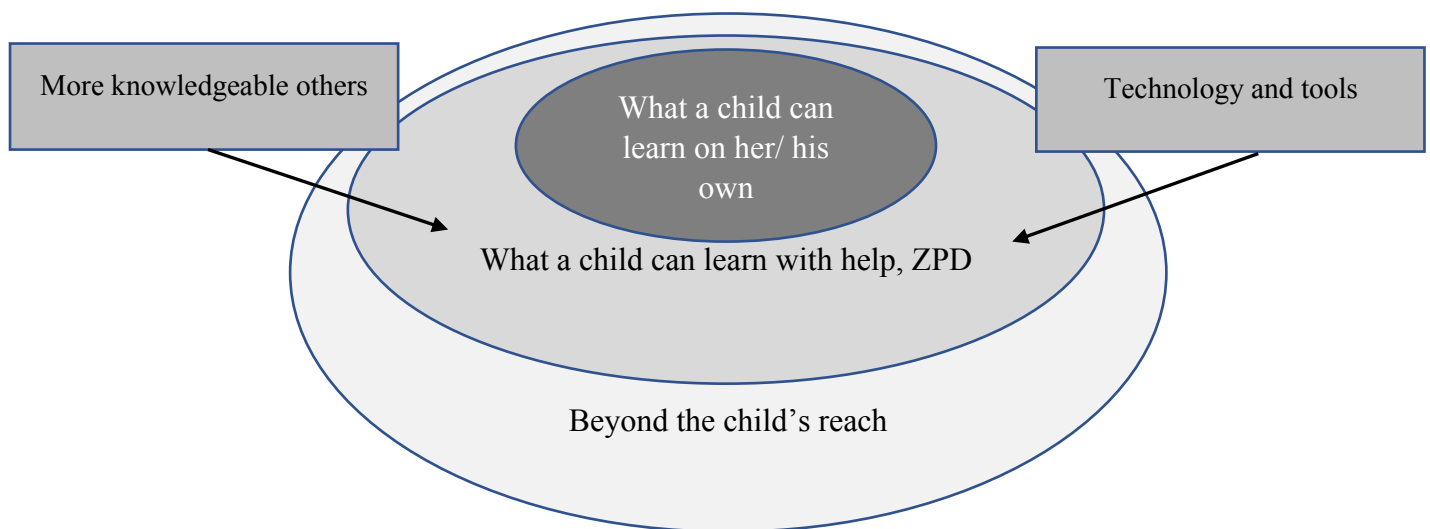


Figure 1. ZPD and scaffolding. Source: McLeod, 2018b, p. 5.

Vygotsky argues that in play, children interact with others and learn from them (Tōugu et al., 2017, p. 10). Vygotsky believed that families, communities and other children are important factors in learning, and play and imagination are significant tools for

development and learning (Pound, 2006, p. 41). Vygotsky's theory of play (1978, as cited in Nilsson & Ferholt, 2014, p. 923) suggest that adults are always part of children's play, and the difference between play and everyday activity creates a zone for proximal development for the child. According to Nilsson and Ferholt (2014, p. 923), Vygotsky argues that unlike in real life in which action dominates meaning, "in play action is subordinate to meaning, and therefore the child is able to move forward because in play subordination to rules is pleasurable". He explains that play gives children a new form of desires, teaching them to desire great achievements in play that will become their basic level of action and morality in real life. (Nilsson & Ferholt, 2014, p 924).

Currently, the understanding of how learning occurs highlights the constructivist approach, arguing that one must actively construct knowledge by gathering it from meaningful and important experiences (Roussou, 2004, p. 4). The socio-cultural perspective on learning suggests that people are regarded as social beings in essence, hence, analysing social interactions (Jahreie et al., 2011, p. 3). Rona et al. (2018, p. 71) argue that the child's socio-cultural community and family have an impact on learning culturally relevant values, rules and behaviours needed to participate and function in everyday life. According to Howe and Davies (2010, p. 156) learning in science is dependable on what learners already know and how they can construct the knowledge through social interaction with others. There is a close connection between cognition, identity and cultural values (Howe & Davies, 2010, p. 157). Roussou (2004, p. 4) argues that knowledge is constructed by testing ideas and concepts based on prior knowledge and experiences, and then applying them to a new situation. She explains that a significant amount of literature supports learning through activity.

According to Sandberg and Vuorinen (2010, p. 55) children's conceptions and way of thinking are formed by the culture as well as intellectual, linguistic and psychological tools typical to that culture. It can be argued that learning is the ability to communicate and interact with others to comprehend the social and cultural environment around (Sandberg & Vuorinen, 2010 p. 55). However, the effectiveness of play in learning, depends on the amount and type of play. (Tõugu et al., 2017, p. 10). Different forms of play serve different goals, and can all support children's learning, depending on the learning objective and the context (Skolnick Weisberg & Zosh, 2018, p. 2).

Fleer (2010b, p. 77) argue that the way teachers build theoretical knowledge in play-based programs is important. Theoretical knowledge is seen as an important cultural tool which is essential for children to acquire (Fleer, 2010b, p. 77). Both, formal and informal education settings use advanced constructivist theories in their curriculum and content design to create understanding through active involvement (Roussou, 2004, p. 4). Fleer (2010b, p. 81) explains that play-based programs offer several opportunities to create theoretical knowledge in children, but require pedagogical skills for framing, as well as consideration of concepts. According to Fleer (2010a, p. 68), Vygotsky argued that concept formation should be thought at two levels: at an everyday level and scientific level. Fleer explains that at an everyday level, concepts are learnt through directly interacting with the world, understanding how the world works (e.g. rules, expectations and social roles) and they form a basis for learning scientific concepts, whereas, at the scientific level, children learn concepts through instruction, i.e. they are examined or taught to children, and often hold little meaning to them. Everyday concepts and scientific concepts should be understood as dialectically interconnected (Fleer, 2010a, p. 68). Fleer (2010b, p. 14) argues that the teachers must acknowledge children's everyday life as a source of knowledge, and connect the subject matters with that knowledge. If everyday learning and schooled learning (scientific concept formation) are kept separate, children cannot conceptualise how different forms of learning are connected. (Fleer, 2010b, p. 14).

Jahreie et al. (2011, p. 4) discuss that in science-focused collaborative activities, children require adult guidance and support to understand the problems encountered and the reason for making mistakes. The degree of adult supervision and instructions is critical in leading the child in the right direction. (Jahreie et al., 2011, p. 4.) Adults contribute to the learning through their relationships with the children, provision of play opportunities, and interactions interpreting "the cultural heritage in support of children's particular funds of knowledge" (Jordan, 2010, p. 96). Wood (2010, p. 5) argues that in educational context, free play is seen often as challenge, associated with chaos, loss of adult control and uncertain outcomes. Adults both, in home and educational settings, often restrain play as they consider it unimportant or are afraid of subversion of rules and norms, or bullying and social aggression as a result of play (Wood, 2010, p. 5). According to Roussou (2004, pp. 5–6), even though play can combine imagination and intellect in various ways helping children discover information at their own pace and in their own way, there are concerns that if learning is "too much fun", it is not taken seriously. The objective of play-based

learning should be to create meaningful tasks for students to learn to do difficult tasks as well (Roussou, 2004, p. 6).

Skolnick Weisberg and Zosh (2018, p. 2) explain that due to free play being unstructured, it is not considered the best tool for children's learning on particular types of content knowledge. However, guided play can support children's content learning by adults providing scaffolding and allowing children's own actions to guide them to the learning goal (Skolnick Weisberg & Zosh, 2018, p. 2). According to Skolnick Weisberg et al. (2016, pp. 177–178), guided play approach derives from Vygotsky's *zone of proximal development*, integrating child-led free play with focus on learning and adult-led instructing. Guided play provides a favourable environment for learning by respecting children's autonomy and pride, encouraging their love of learning and engagement, supporting them in knowledge acquisition, as well as promoting a positive attitude to learning itself (Skolnick Weisberg et al., 2016, p. 179). Adults can support learning by providing a structured environment (e.g. supplying particular types of toy) or sensitively responding to children's actions and offering open-ended instruction during play (e.g. encouraging children to explore materials) (Skolnick Weisberg & Zosh, 2018, p. 2). In guided play, adults either design the setting, emphasising the learning objective and allowing children to explore freely in the setting, or adults observe child-led activities commenting, encouraging children to question, or extending their interests (Skolnick Weisberg et al., 2016, p. 178). Interactions with adults can provide new knowledge and ideas, and later, stimulate children's play, as adults can model the scientific attitudes they want to transmit to children. (Howe & Davies, 2010, p. 158). However, Skolnick Weisberg and Zosh (2018, p. 2) argue that it is essential that during play, children are in charge and can choose their own actions. The orientation toward purposefully framed play suggests children need more than open-ended play to learn in a meaningful way in early childhood settings because experience alone is not enough for allowing children to access the content knowledge embedded in this form of play (Cutter-Mackenzie & Edwards, 2013, p. 210).

3.4 Constructing the Learning Environment

According to Papatheodorou, (2010, p. 146), the way learning environments in early years settings are organised, have been influenced by the pedagogical theories and models in the field of early childhood and education of that time. She explains that the pedagogical model has transformed from a didactic and adult-centred approach to more exploratory and child-centred approach. Play and playful learning became the philosophical foundation in the field of early childhood (Papatheodorou, 2010, p. 147). The arrangement of space, time and resources is important in constructing a learning environment (Trudell, 2010, p. 201), as well as to ensure that all children have an opportunity to participate in play according to their skills and development (OPH, 2018, p. 39). Play should be developmentally appropriate and child-centred, and educators have a role in guiding the children through their learning (Fesseha & Pyle, 2016, p. 363). Learning environments should promote hands-on experiences and encourage children to explore and investigate (Papatheodorou, 2010, p. 147).

Papatheodorou, (2010, pp. 146–147) states that Piaget’s theory of cognitive development linking children’s ages and stages of development has had the most influence on the learning environments in early years settings. Piaget believed that children can understand the principles of phenomena through exploring appropriate and mentally stimulating resources and materials, and viewed them as active agents in their own learning (Papatheodorou, 2010, p. 147). Children need opportunities to explore, investigate, speak and listen, develop ideas and language in their own time and in their own way, playful encounters with others and with different materials, and control their own learning through choice of activities and resources (Trudell, 2010, p. 201). Concentrated exploration, spontaneous creative expressions, and rough and tumble play, all have an important role in children’s learning and wellbeing (OPH, 2018, p.39).

Howe and Davies (2010, p. 157) argue that the practitioners in education settings must create a proper environment and provide adequate resources for children to learn scientific concepts and knowledge. They note that presenting materials in a new way, can stimulate children into new patterns of play. However, research indicate that children do not automatically discover scientific information just by providing a setting and resources, but the settings require careful planning and consideration (Howe & Davies,

2010, p. 158). Thus, as Duffy (2010, p. 133) argues, organisation of the space and resource has an important role in enabling children to be creative, and determining what and how children create and how creative they can be. There must be enough space and time to work, and materials and tools must be easily accessible (Duffy, 2010, p. 133). According to Papatheodorou (2010, p. 156), an environment that is not stimulating and exciting will be perceived as uninspiring by children and thus, will disadvantage their learning. Papatheodorou argue that playful learning environments must include: 1) rich and multiple stimuli and 2) an enabling pedagogy that perceives the child as the main actor of the environment (p. 157). She adds that they should be safe, caring and welcoming, as well as offer variable different play resources that are modifiable and responsive. The learning environments must promote exploration, investigation, gathering of information and implementing ideas, as well as encourage hands-on and multi-sensory experiences, and co-operation and communication (Papatheodorou, 2010, pp. 156–158).

Different types of play can be enhanced by providing different play resources and tools: e.g. paper, crayons and plastic letters can enhance preliteracy skills, climbing apparatus can enhance exercise benefits of play, and Lego-type bricks can stimulate creative construction activities (Smith & Pellegrini, 2008, pp- 3–4). Howe and Davies (2010, p. 157) state that supplying resources for role play can contribute to the scientific potential of *ludic play* (children using their imaginations to create fantasy and amusement). Broadhead and English (2005, as cited in Howe & Davies, 2010, pp. 157–158) argue that the key features of an open-ended role-play setting are: 1) providing play resources that can be used in different purposes and 2) providing extended play periods with regular access.

According to Papatheodorou (2010, p. 150), research has long acknowledged the value of multi-sensory experiences to enhance thinking and memory. The multi-sensorial stimuli, especially spatial, visual, tactile and smell, are connected to memory and recollection of information and early life events (Papatheodorou, 2010, p. 150). Howe and Davies (2010, p. 161) explain that there is a connection between science and communication, language and literacy as building and the use of narrative is an important part of beginning to understand the world. They further explain that scientific knowledge has been passed down through cultures by using narrative, and argue that it is a worthy practice to promote scientific understanding in children, as they can be told stories on how things come into being. According to Howe and Davies, children learn the scientific skill of hypothesising when they follow up the stories with questions and play. The narrative approach to

learning science in the early years is consistent with the socio-cultural understanding of learning (Howe & Davies, 2010, p. 161).

Duffy (2010, p. 124) explains that the importance of creativity has been highlighted in the early years of education, and argues that it is important, as it assists in responding to the rapidly changing world and dealing with the unexpected by developing our current knowledge and using information in new ways. She defines creativity in children as combining or using materials in new ways, making new discoveries, and creating something new or original, and the process of creativity includes curiosity, exploration, play and creativity. Arts can contribute to children's creativity and thus, learning, and is valuable in early years education (Duffy, 2010, p. 127). Also, outdoors is considered an essential part of the learning environment as research highlights the importance of outdoor play for children arguing that it promotes better concentration, better physical and motor development, and diverse and imaginative play (Howe & Davies, 2010, p. 163; Papatheodorou, 2010, p. 152). Howe and Davies (2010, pp. 163–164) explain that in the nature, children can learn about the scientific world through all the senses and develop an interest in the natural world. They argue that, as the future of the planet is a common concern, it is important to teach children the understanding of environmental concepts such as sustainability and conservation. Papatheodorou (2010, p. 152) argues that adults' most favourable memories of childhood often comprise of being and playing outdoors. Outdoor spaces should be available to children and designed in a way that promotes play and meaningful learning (Papatheodorou, 2010, p. 152).

Howe and Davies (2010, p. 159) note that games-play is another type of play that practitioners can use to mediate children's scientific learning. The play focuses on rule making and following by connecting early exploration and more formalised scientific enquiry (Howe & Davies, 2010, p. 159). According to Marksby (2012, p. 175), playing games and learning by playing games is part of the childhood (e.g. peek-a-boo and game of eating and bathing with young children). Play can facilitate children with the process of growing up and learning how to do things in real life (Marksby, 2012, p. 175). Howe and Davies (2010, p. 162) state that one of the ongoing debates on children and learning is the use of Information and Communications Technology, ICT (e.g. laptops, tablets, smartphones, interactive whiteboards and smartboards). On one hand, new technologies are seen as something that transforms learning, and on the other hand, there are arguments that they should be renounced from pre-school settings to focus more on play and hands-

on learning (Howe & Davies, 2010, p. 162). However, today, the Internet, online gaming and mobile technologies are a significant part of children's life as they are constantly exposed to technology, devices and the Internet (Marksbury, 2012, p. 175). Howe and Davies (2010, p. 162) argue that regardless of the debate, ICT seems to have a significant role in the real world of science. Therefore, it is important to consider the role of ICT in the context of preschool learning (Howe & Davies, 2010, pp. 162–163).

4. RESEARCH METHODS AND DESIGN

This thesis aims to explore how conservation values can be promoted to preschool children through play-based learning in the ecotourism context. The study adopts qualitative research methods within interpretative paradigm, regarding that human behaviour is complex and alternative interpretations are applicable, and thus, personal constructions of reality must be acknowledged (Aubrey, David, Godfrey, & Thompson, 2005, p. 33). Aubrey et al. continue explaining that “the approach described as interpretative emphasises the manner in which personal perspectives on the world may influence behaviour and therefore, the importance to the researcher of understanding these”. Hence, this thesis aims to understand human behaviour within the context of their usual manifestation from the perspective of the actors’ in that specific setting (Hatch, 2002, p. 7). According to Saldaña (2011, p. 22), the researcher “initiates, plans, facilitates, and oversees all aspects of the project from start to finish, working in a rigorously curious and ethical manner” to reach the goals of the research. The following figure illustrates the qualitative research process of the thesis study.

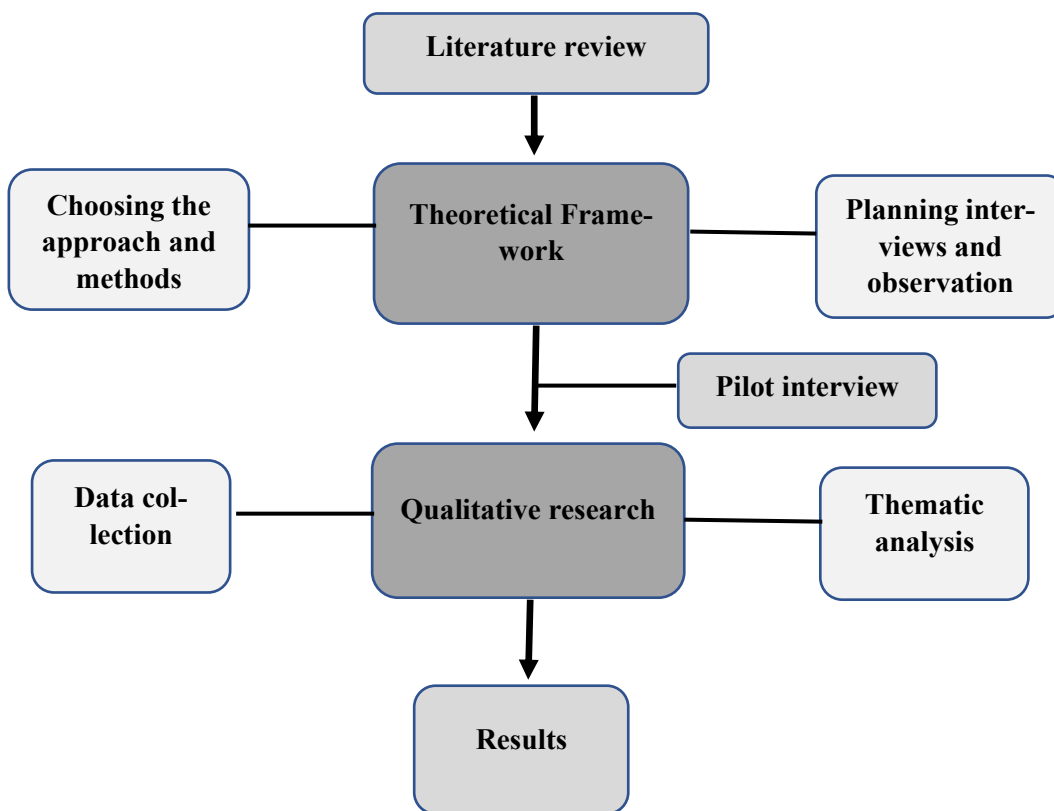


Figure 2. Qualitative thesis process

The process of the qualitative research commenced in October 2018 by defining the theoretical framework of the thesis. The first stage of the thesis process included secondary data analysis, formulating the research question and the sub-questions, and gathering and producing the literature review. The importance of familiarising with and understanding the theory relevant to the study was considered essential before entering the empirical part of the study. Hatch (2002, p. 40) argues that commencing a study without theory is precarious, as the researcher may not notice anything (important) or may feel overwhelmed at seeing everything. Knowing the related theory to the study is important in order to be able to identify and understand essential data when conducting the empirical part. Also, the research and analysis methods were determined during the first stage of the thesis process.

The second stage of the thesis process consisted of developing the semi-structured interview guideline, contacting the potential interviewees, organising the (participant) observations and conducting a pilot interview (during May and June 2019) and then, conducting the interviews and observations (during July and August 2019). The empirical part of the thesis process continued until the end of September 2019 by transcribing the interviews and analysing the interview and observation materials by employing thematic analysis methods. During the final stage of the thesis study in October and November 2019, the primary information was analysed and the main findings of the thesis study were emphasised. This chapter discusses the methodological approaches applied in the study covering four sections: research context, data collection, data analysis and reporting, and research ethics.

4.1 Positioning the Research and Researcher

This multidisciplinary thesis considers that ecotourism can provide an ideal context for promoting conservation values for preschool children, and explores how those values can be promoted through play-based learning. Ecotourism is considered to improve visitors' environmental knowledge and promote the importance of conservation among the visitors through education and interpretation (Hughes et al., 2011, p. 307; Powell & Ham, 2008, p. 467). The empirical context of the study connects tourism with the educational field to understand how preschool children can learn about the importance of conservation in ecotourism settings by applying play-based learning from the perspective of sociocultural

learning theory. Qualitative research explores lived experiences of real people in real settings, assuming that social settings are unique, dynamic and complex (Hatch, 2002, pp. 6, 7). As ecotourism education contributes to conservation by promoting knowledge about natural environments and encourages pro-conservation behaviour, research on the phenomenon is important. It is worth mentioning that the research context of the thesis is an industrialised Western society and play-based learning is studied mostly from the perspective of urbanised Western children. In the context of this research, children from two to six-years-old are referred as preschool children. However, in Australia, preschool children are usually between the ages three and five.

There are several reasons for choosing ecotourism, preschool children and play-based learning as research context. Firstly, there are very few studies on children in ecotourism and none (that the researcher could find) that contributes to young children learning about conservation in ecotourism. Secondly, the commissioner of the thesis study, Binna Burra Lodge, expressed a necessity for understanding how conservation values can be promoted to that age group. The decision to use play-based learning as an approach to learning was made, as play is the most natural way children learn (Moyle, 2010b, p. 1), and play-based learning is generally regarded as an optimal method for young children to learn. Developmentally, play is very frequent between the ages two and six (Smith & Pellegrini, 2008, p. 1) and thus, considered characteristic for preschool children. Finally, the researcher's personal interest in young children's learning as a mother and relationship with Binna Burra Lodge inspired to explore the topic from the context of preschool children.

In qualitative research, a physical setting in which social action occurs is included in the context of the study (Hatch 2002, p. 44). The physical location of this thesis study is South East Queensland in Australia. Tourism is an important industry in Queensland and the state is experiencing growth in both, domestic and international visitors. More than 26 million overnight visitors arrive to Queensland every year and the tourism industry directly contributes 12.8 Billion Australian Dollars to the Queensland economy (Business Queensland, 2019). South East Queensland comprises of Brisbane, the Sunshine Coast and the Gold Coast. The region offers variety of landscapes and activities for tourists, ranging from city life and theme parks to beaches, mountains, rainforests and several national parks.

The commissioner of the thesis study is Binna Burra Lodge, a heritage listed ecotourism property located in Lamington National Park, in South East Queensland, Australia. Lamington National Park is part of the Gondwana Rainforest of Australia World Heritage Area and it comprises two sections: Green Mountains and Binna Burra. The national park contains the largest areas of subtropical rainforest in the world, most of the warm temperate rainforest, and almost all of the Antarctic beech cool temperate rainforest (Department of Environment and Science, 2019a). Lamington is also an important refuge to wildlife and many plant species, some of them endangered and recognised for their World Heritage significance. It has an important role in protecting the rich diversity of globally significant wildlife. Lamington National Park protects 58 plants and 22 animals categorised vulnerable, rare or endangered (Department of Environment and Science, 2019b). The earliest humans inhabiting Lamington National Park area were an Aboriginal kinship group, the Yugambah who consider the mountains as sacred and spiritual places (Department of Environment and Science, 2019b). They recognise the area as Woonoongoora and regard it as a place to be nurtured and respected (Tourism and Events Queensland).

Binna Burra Lodge is located at the end of the more easterly road access to Lamington National Park and is one of the longest-established nature-based lodges in Australia. It was founded in 1933 (as Binna Burra Mountain Lodge) by two conservationist, Arthur Groom and Romeo Lahey, to provide a place for people to stay and experience the surrounding national park rainforest (ABC News, 2018). Sadly, Binna Burra Lodge suffered significant structural loss during the devastating bushfires in September 2019 (see Binna Burra Lodge, 2019). At the time of writing this, the lodge remains isolated with restricted access to the site and is undertaking the long process of rehabilitation, intending to meet all its obligations and maintain its reputation. According to Buckley (2003, p. 103), Binna Burra Lodge is an internationally known destination offering full board accommodation with high occupancy rates and repeat business. The historic World Heritage Listed lodge has taken a modern approach to ecotourism and conservation and has a significant role in protecting the biodiversity of the national park. National parks and other protected areas in general have an important part in conserving biodiversity of those environments (Green, 2014, p. 68; Scanavis & Giannoulis, 2010, p. 50). Considering the contribution of ecotourism and national parks to biodiversity conservation, Binna Burra Lodge has an important role in promoting environmental and conservation awareness in its visitors, and raising future conservation advocates.

The researcher's own environmental values and identity as a mother of two young children, as well as personal relationship with the study location influenced substantially the selection of the research subject. In this study, the researcher aimed to position herself neutrally, not reflecting her own values and beliefs about children's learning and conservation values on to the participants but, understanding that differences between her and the participants personalities and views would emerge. Saldaña (2011, p. 40) argues that researcher should be "a sympathetic and empathetic listener, someone who does not pass judgment on what the participant says, but one who provides a forum for a voice to be heard". Also, it is worth mentioning that the researcher does not have experience in teaching children or engaging in play-based learning, apart from learning situations with her own children. Thus, the absence of previous (professional) experiences in play-based learning allowed the researcher to focus on the research without existing biases.

4.2 Data Collection

Data for the thesis study was collected by using qualitative research methods of semi-structured interviews and participant observation. The two methods were chosen in order to obtain valid data to understand the phenomenon under study. According to Saldaña (2011, p. 24), most qualitative studies use the combination of interviews and observation as part of their social research. Saldaña (p. 33) argues that in qualitative research, the researcher him or herself is considered as the main data collection tool, in addition to traditional methods, using also cognitive and affective processes such as inferring, intuiting, empathizing, and evaluating. This was used as a guideline during the empirical part of the thesis study and cognitive and affective processes were documented and considered as part of the data. The rationale for the concept of researcher-as-instrument is that "the human capacities necessary to participate in social life are the same capacities that enable qualitative researchers to make sense of the actions, intentions, and understandings of those being studied" (Hatch, 2002, p. 7).

Interviewing is considered the primary data gathering method of the thesis study. Valuable and essential knowledge of personal and social aspects of people's lives can be obtained through conversations (Brinkmann, 2013, p. 3). Semi-structured interview guide (Annex 1) was formulated by studying the literature and looking for topics that would

allow rich and comprehensive answers about the subject under study. The interview guide was created to help the researcher to guide the conversation as well as ask specifying questions when necessary. The five main topics and open-ended questions were created in a way that required more than *yes* and *no* answers. According to Brinkmann (2013, p. 3), semi-structured interview allows for more leeway to inquire aspects which are considered important for the interviews when comparing to structured interviews, and compared to unstructured interviews, enable the interviewer to direct the conversation to issues the researcher considers important for the research. The five main topics of the interviews were: 1) Learning about biodiversity conservation through play, 2) Nature as a learning agent in promoting conservation values among preschool children, 3) The role of adults in promoting conservation values thorough play-based learning, 4) Interpretive tools, and 5) The learning environment for promoting conservation values for preschool children.

The participants for the interviews were selected in a way that allowed for diverse perspectives on the topic. The participants were chosen because they were considered to have knowledge and experience with the subject under study and because they represent viewpoints from different fields. Saldaña (2011, p. 33) explains that when choosing the participants, it is important to consider whose perspectives represent the diverse scene of the social and cultural setting. Also, it is worth mentioning that all the participants have at least some professional experience with preschool children. The participants are professionals and experts from early childhood education, environmental education, outdoor education, ecotourism, recreational tourism, and conservation located in Queensland, Australia. Eleven semi-structured interviews with twelve participants were conducted in English. Nine of the interviewees were female and three were male, and the youngest interviewee was 27 years old and the oldest 80 years old. Eight of the interviews were face-to-face interviews, two were conducted using the telecommunications application Skype, and one interview was conducted over the phone. Also, one interview was attended by two participants. The duration of the interviews varied between 30 minutes to 1 hour and 20 minutes. All the interviews were recorded and later transcribed. It is important to mention that one of the interview recordings conducted by Skype was lost and could not be recovered and thus, was not included in the data, as the researcher did not want to rely solely on memory and make false interpretations from the data. Therefore, ten interviews with eleven participants were included in the data.

Participant observation was chosen to support interviewing as a data collection method in the thesis study. Combining the two methods was considered the best approach to gain valuable data on the subject, especially children's play and learning. As children's play as experienced and described by children themselves is methodologically challenging to study due to their likely inability to express their feelings and thoughts verbally (Gurholt & Sanderlund, 2016, p. 9), observation allowed the researcher to examine non-verbal information in children, such as facial expressions, exclamation, as well as engagement and concentration in play situations. Participant observation aims to capture people's "naturalistic actions, reactions, and interactions, and to infer their ways of thinking and feeling" and communicates information that may be left unexplored from interviews and other data collection methods (Saldaña, 2011, p. 46).

Three different participant observation situations were conducted during the thesis process. The observations took place in South East Queensland. The occasions were chosen to gain diverse information on children's play and learning in nature. Hatch (2002, p. 8) argues that for researcher to understand participants in natural context, enough time must be spend with the participants (in the context) to be certain of what they are documenting. Here, the researcher believes that her personal experience with preschool children helped in understanding and interpreting the children's play and their non-verbal communication. Observations were conducted by: 1) organising a nature walk with preschool children, 2) visiting and participating in a nature-based outdoor kindergarten, and 3) observing children in a nature-based playground. The nature walk was performed with two children aged two and three. During the second observation in the outdoor kindergarten, there were seven children, three females and four males, between the ages two and four and a half. The last observation consisted of five children, two females and three males, approximately between the ages two to five. Field notes were written down during the observations which were rewritten more thoughtfully afterwards. Altogether, the data contained 150 pages of text from the transcribed interviews and field notes.

4.3 Data Analysis and Reporting

The data of the thesis study was analysed by using the thematic analysis in an inductive way from the interpretivist perspective. Developing the themes in the analysis was directed by the content of the data and the meanings emerged towards the end of the study process. The data was analysed by understanding and interpreting the meanings from the participants perspective. Thematic analysis is described as a process of identifying patterns or themes within qualitative data and it is not constrained to one particular epistemological or theoretical approach (Maguire & Delahunt, 2017, p. 3352). It provides a more approachable method of analysis for early career researchers (Nowell et al., 2017, p. 2). Hence, thematic analysis was considered a suitable and flexible method for analysing the data for this multidisciplinary thesis. Thematic analysis involves identifying, analysing, organising, describing, and reporting themes in the data in a descriptive method reducing the data in a flexible manner (Castleberry & Nolen, 2018, p. 808).

The analysis consists of six phases. The first phase of the analysis was to familiarise with the data. The data was read through and then re-read to become familiar with it. The second phase included creating codes that were relevant in answering the research question and sub-questions. QSR NVivo 12 software was employed to facilitate the coding process of the analysis, assisting in handling the large amount of data gathered. After the codes were generated, they were examined and broader themes were identified. The fourth phase was reviewing the themes to refine, combine and discard some of them. After reviewing the themes, ten themes remained:

- Adult support
- Connection and love
- Environmental stewardship
- Interconnectedness
- National parks
- Natural environments
- Nature-based tools
- Nature play
- Regular exposure
- Storytelling

The next phase of the analysis included defining what each theme represented and developing an analysis for the themes. During this phase, some of the themes were still merged together and refined. Going through the themes once more, contributed to understanding that “the common thread” in the analysis was regular contact with nature. The themes were then developed into categories or *stories* and a descriptive name assigned for each

story. The final phase was writing the analysis, incorporating quotations from the interviews and field notes in it, and joining the analysis with existing literature in the discussion.

4.4 Research Ethics

The Finnish National Board on Research Integrity (TENK, 2019) guidelines on ethical principles of research were followed during the entire thesis process. During the writing process, the rules for recognising the work of others and not taking credit from their work, as well as presenting the results of the study accurately without falsification were followed carefully. Also, general principles of responsible conduct of research in Australia by Australian Research Council (ARC, 2018) were taken into consideration in the thesis study, as the study took place in Australia. Ethical considerations were of most importance especially because the study involved children. The researcher carefully considered the purpose and methods of the research from an ethical aspect, ensuring that no harm or distress would be caused to the participants. As Saldaña (2011, p. 24) explains, there are moral and legal rules concerning the ethical treatment and care of people involved in research.

It can be challenging to conduct research that involves children. When planning the participant observations of the thesis study, a couple of ethical factors were taken into consideration. Firstly, it is difficult to establish when children are old enough to give consent to be involved in a research. If children are asked for permission for research, do they fully understand what they are agreeing to? Aubrey et al. (2005, p. 160) discuss that children do not necessarily understand the repercussions of participating in a study and may agree merely to please the adult who is asking.

Secondly, it was considered whether observation should be participant or purely observation. According to Aubrey et al. (2005, p. 158), under the interpretative paradigm, non-participant observation does not look for the explanations, views and meanings of the participants and thus, only serves the researcher's outlook on the observation. Contemplating the ethical issue of power was considered necessary and the approach of participant observation was chosen. The researcher did not regard the children only as a source of data but took into consideration the cultural constructions of the settings as well.

However, during the participant observation in the outdoor kindergarten setting, the researcher respected their practice of the role of adults and followed the position of the educators. Consent for including the children in the research was asked from their parents or guardians with a letter of consent (Annex 2) explaining the purpose and conduct of the thesis study. No harm or distress was caused for the children during the participation in the study. Also, it is important to mention that to protect the children's anonymity, no photographs or video recordings were taken during the observation.

When planning and conducting the semi-structured interviews, the ethical issues of anonymity, confidentiality and voluntary participation were considered and factored in the study. The participants were invited to the interviews with an email invitation which included the letter of consent (Annex 3) explaining the purpose, conduct and use of the thesis study. The letter of consent was presented to the interviewees again before the interview began. They were also asked to sign the consent if they had not earlier. The participants were asked permission for recording the interviews before the interview and then again in the beginning of the interview on the record.

Participation in the interview was voluntary and the interviewees could withdraw their permission at any time during the thesis study. The researcher respected and appreciated that the participants dedicated their own time for the interviews and trusted her in sharing about their lifeworld. The anonymity of the participants was ensured during the thesis study by not publishing any names and not letting anyone besides the researcher to access the data of the study. Therefore, the quotations are marked as *I* followed by the number of the interview and *FN* for the fieldnotes: e.g. *I2* referring to interviewee 2 and *FN1* referring to field notes from the first observation. No harm or distress resulted from the interviews, as the participants were free to disclose as much and whatever information they wanted.

5. NATURE AS A LEARNING AGENT IN PROMOTING CONSERVATION VALUES THROUGH PLAY

5.1 Developing Love for Nature Through Regular Exposure

According to the findings, it is evident that preschool aged children need to love nature in order to want to protect it. Love for nature is fostered through developing a connection with the environment in which children spend time and experience nature. This relates to environmental consciousness which is connected to ecological identity and person's "reflection on, connection to, and engagement with the natural environment" (Broom, 2017, p. 34). When the interviewees were asked how being and learning in nature can promote conservation among young children and how children can learn about conservation, love for nature emerged often:

I think awareness and respect and loving them. I think learning a bit of responsibility and we really try to promote that team atmosphere that we're all in this earth together. (I2)

You have to love it. And you have to experience it to love it. (I3)

Through their heart, through loving. Learning how to be good people on earth. Just learning to love and feel safe in the environment should do on its own. (I4)

Research supports this finding that a care for nature must be established before children are inclined to protect it (Broom, 2017, p. 36). Tanner (1980, as cited in Reibelt, Richter, Redings, & Mantilla-Contreras, 2017, p. 1) argues that children must become familiar with nature and love it before they can develop a concern for it or desire to protect it. People who love and care for nature take into consideration the consequences of their actions and behaviour for the environment (Ting & Cheng, 2017, p. 1224). Broom (2017, p. 35) argues that people with an ecological consciousness connect their personal identities to nature and express responsibility for it. Fennell (2015, p. 133) emphasises the importance of the ethical imperative in understanding the meaning and purpose of ecotourism. Biocentric or ecocentric values are essential in order to develop conservation values and hence, important for ecotourism to reflect through education and interpretation.

The notion of connection is regarded important in preschool children developing love for nature, as well as in understanding about the environment and conservation. Unless children feel connected to nature and the natural environments in which they spend time, the

love and respect for it cannot develop. Preschool children must create a relationship with nature to be able to understand its value and importance. Broom (2017, pp. 40–41) explains a relationship with nature as “a positive connection through which individuals value nature and feel a sense of engagement, care, and responsibility for protecting it”. This is what is known as biophilia, an innate love for nature, a biological need related to survival that is established through experiences in nature during childhood (Broom, 2017, p. 35). The idea of biophilia is reflected in how the interviewees discussed the importance of developing a connection with nature and connection to country:

But they know it's very special and we must look after it. And so, that's how we play in it. To me, that's more important in terms of learning about biodiversity because it is special and we learn and honour it, this place and all the species in it. It's part of how they are here... Conservation values come through connection. (I4)

So, the idea of mindfulness and the environment, connection to country. (I8)

I actually threw in a fifth area of development, environmental awareness. So, making sure children are developing an environmental connection. Connection with nature... My understanding is that a lot of conservation values are strengthened by children being able to have a direct connection with nature, independently. And feel like they own it. (I9)

Generally, it is understood that experiences in nature lead to higher concern for it and consequently, to conservation behaviour and actions (Massingham et al., 2019, p. 828). Research indicate that the more time a person spends in nature during childhood, the more pro-environmental they are as a child and later, as an adult (Collado, Corraliza, Staats, & Ruiz, 2015, p. 66). Personal experiences in nature can develop environmental awareness in children (Sawitri, 2017, p. 2). It emerged that children tend to remember things better if they experience them themselves, as opposed to adults talking about them. According to the findings, the younger children are exposed to nature and natural environments, the more they connect with nature and develop conservation values. When the interviewees were asked how they think children can learn about conservation, the significance of experiencing nature emerged in majority of the interviews. Experience in children's learning is highly regarded also in early childhood education and play-based learning (Cutter-Mackenzie and Edwards, 2013, p. 197). The emphasis on experiencing nature is illustrated in following quotations:

So, I think being in that environment subconsciously makes you become more aware of it and appreciate it more. That's what I hope children would get out of

it. But I think I've seen that enough to be able to say that is relatively true. So, it makes it a very real learning environment for what you are teaching the children. The more you can be in that environment, the better. (I1)

Our belief is that anybody will not appreciate nature unless they're in it. But unless they actually experience it... (I3)

The findings support previous studies on the connection with childhood experiences in nature and developing a concern for the environment and conservation values. When experiencing natural environments, children develop an interest in it and a desire to protect it. Unstructured time in nature as a child can foster pro-environmental attitudes and behaviours as an adult (Browning, Marion, & Gregoire, 2013, p. 105). Ting and Cheng (2017, p. 1224) discuss that direct exposure and experience with nature is required to increase pro-environmental behaviour. According to the findings, experiences in nature contribute to understanding nature and hence, understanding the need for protecting it. Also, Broom (2017, p. 34) explains that there is a connection between positive experiences in nature as a child and positive approach to nature as an adult. The relationship with experiences in nature and the desire to protect it is emphasised in the findings: "I think if you want to have a connection with something and protect it, you have to experience it" (I8). The way people interact with and the amount of time they spend in nature is believed to be impacted by their childhood outdoor experiences (Broom, 2017, p. 35). Childhood experiences in nature impact the willingness to participate in nature-based activities and environmentally friendly actions (Collado et al., 2015, p. 66). By visiting natural environments, children learn to take responsibility for themselves, their belongings and the environment, as well as learn about the ecosystems and the wildlife in the area (Sawitri, 2017, p. 3).

However, the findings indicate that experiences in nature need to occur on regular basis in order for children to develop a positive relationship with the nature that can promote conservation values and lead to conservation behaviours also later in life. The importance of regular contact with and exposure to nature is emphasised greatly in the empirical data and supported by research. There is evidence that visiting natural environments on daily basis as a child, prompts adults to spend more time in nature compared to those who visited natural environments scarcely during childhood (Collado et al., 2015, p. 66) and thus, they are more likely to develop environmental awareness and conservation values. Collado et al. (2015, p. 66) argue that regular contact with nature is considered a relevant

method in promoting environmental awareness in urban children. The interviewees were quite unanimous in that children need regular exposure to and contact with nature so they can connect with and develop love for the environment which can in turn, foster environmental stewardship in them. The interviewees explained the importance of regular exposure to nature in the following quotations:

Yes, they need to be lived experiences. And repetitive lived experiences, to embed it. Otherwise it's all waste of time. (I5)

It's a real thing. I think unless they're in it regularly, it seems like a far concept. (I8)

If you're wanting to build that connection then, like I said, repetitive nature, being outdoors is the key feature. (I11)

One interviewee explained that environmental awareness and conservation values are something that have to be established over time and emphasised the importance of building a conversation around conservation with children during outdoor experiences:

If you think about environmental awareness and conservation values as a developmental area of childhood, it starts just like physical literacy and social and emotional skills... It's something that has to be established. It has to be established early on, and it's regularly discussed and talked about...So, exposure to nature and constant contact with nature. It creates an opportunity to having and building a conversation around conservation values in children and practices that are sustainable. (I9)

Environmentally responsible behaviour is a learnt behaviour (Sawitri, 2017, p. 2). According to Rosalino, Gheler-Costa, Santos, Goncalves, Fonseca and Leal (2017, p. 2676), environmental literacy (EL) starts developing in early stages of children's education impacting their understanding and attitudes on nature conservation throughout their lives. The development of environmentally responsible behaviour was identified during the second participant observation in the nature-based outdoor kindergarten. It was quite clear that because most of the children had been coming to the kindergarten many times and thus, had regular contact with nature, their behaviour in the environment could be described as environmentally responsible.

The children seem to be very aware of their surroundings and are enjoying, playing and exploring. They pick up things from the ground (e.g. sticks, leaves, rocks) but don't rip leaves off the trees and bushes or tear the branches. I haven't noticed anyone trying to do "naughty" things. There seems to be some kind of awareness among the children about what they shouldn't do in this environment. (FN2)

Environmental literacy encompasses four main components; knowledge (e.g. environmental concepts, problems, and issues), affective dispositions (e.g. environmental sensitivity and concern), cognitive skills (e.g. seeking and accessing information, understanding the causes, and formulating solutions) and behaviour (e.g. consumer behaviours and active participation in conservation action) (Rosalino et al., 2017, p. 2676). Hence, it can be argued that for children to develop conservation values, establishing environmental literacy in them is crucial. Environmental literacy in turn, can develop through regular contact with nature.

5.2 Understanding the Interconnectedness of Nature

It emerged from the findings that for preschool children to comprehend the concept and importance of conservation, they must first understand the interconnectedness of nature. The message of interconnectedness is seen as a concept that preschool children are capable of understanding and regarded as crucial in promoting conservation values for them. If children comprehend that everything in nature is connected and that everything has its place and purpose on the planet, they realise that protecting nature is important. It is argued that understanding the environment can develop concerning actions to environmental change and psychological motivations (Ting & Cheng, 2017, p. 1224) and that when people understand living creatures, they come to value them more deeply (Broom, 2017, p. 35). The interviewees regard that understanding the cause and effect relationship of nature — that for every action in nature, there is a reaction — is something that preschool children must be familiar with to value their environments and comprehend what conservation is. The following quotes illustrate the interviewees' thoughts on the importance of understanding the interconnectedness:

I think just how important everything that is around is important to have around... it's kind of like circle of life. You have to have the trees to have the air, the habitats for the animals, and everything has its place. (I7)

If I was trying to aim one thing for young kids, it would be how connected the world is. If they can understand that for every action, there's an equal...opposite consequence... So, that key message of interconnectedness, I think is a one that young kids can grasp too and see. (I11)

Cutter-Mackenzie and Edwards (2013, p. 196) argue that environmental education for young children must offer more than a sequence of experiences that do not connect with

knowledge, as experiences alone do not automatically induce pro-environmental inclination and performance. The findings indicate that being and playing in nature contributes to children valuing what they see and help them understand that everything is important to have around. If children do not understand the interconnectedness of nature, they cannot understand the importance of conservation. According to Phenice and Griffore (2003, as cited in Dowdell, Gray, & Malone, 2011, p. 26), through nature-based learning children not only learn about the environment but also understand who they are in relation to the natural world. Hence, play in natural environments contribute significantly to understanding the connections of nature. Literature on play-based learning explains that through play, children learn who they are as individuals and how they should interact with others and different environments (Jordan, 2010, p. 98). Learning the perspective of oneself in relation to nature is considered important according to the findings. When young children realise that other living organisms and natural environments are equally important to humans, it is easier for them to understand the importance of protecting them.

One interviewee emphasises the importance of ecocentrism and criticises the human-nature dualism often prevalent in Western cultures:

It gives them understanding of how the world works and it takes the emphasis off humans all the time, which is so bad (that humans are emphasised so much). And they realise that there's more to love than them and their families. So, they have to take into account the whole world and all the living creatures and things in it. (I3)

The findings indicate that having conversations with children and teaching them about the human-nature relationships and the linkages in nature are regarded important in developing conservation values in them. As one interviewee states: "Start talking about why it is important to protect, what role do the trees play in everything, what role does the water play... the relationship between everything" (I9). It is argued that when discussing early childhood education for environmental sustainability (ECEfES), familiarising children with the interdependent relationship of nature, may lead to responsible stewardship (Pollock, Warren, & Andersen, 2017, p. 12). Elliot and Young (2016, p. 60) believe that there is a need to discuss the notion of interconnectedness when teaching children about the environment. Therefore, the message of interconnectedness should be considered a significant concept in teaching preschool children about the importance of the environment and promoting conservation values for them. As Pollock et al. (2017, p. 12) argue,

young children are capable of understanding the concepts related to environmental sustainability (p. 12).

When the interviewees discussed how preschool children can learn about the interconnectedness of nature and the human-nature relationship, it emerged that, as previously discussed, experiences in and exposure to natural environments play a crucial role. As one interviewee noted: “Children, I think, need those experiences so that they know that everything is growing there for a reason, everything has its place there” (I4). Also, teaching children to respect the environment and each other, as well as looking after the environment and animals were seen of importance in preschool children understanding the concept of conservation. Wilson (2011, p. 7) explains that it is not relevant to deliberate abstract topics and distant environmental problems with young children rather the teaching about the environment should concentrate on the children’s immediate environment and small-scale actions in those environments. The findings support the idea that play in local environments and participating in local community projects are an ideal way to introduce the concept of conservation to preschool children. One interviewee explains how locality is important by using tree planting as an example:

And do it for the right reasons and do it so that they can see it grow as well. I’m not a fan of doing random tree planting, like taking the children to do something that they’re never going to see again. I rather do it in their own backyards or our own space so that they can go to that tree to see how it’s going. That cements what they’ve done and makes it more real for them. (I5)

Another respondent emphasises the role of communities in promoting conservation values for preschool children: “Community projects as well. Getting involved in community project, they’re good for pre-schoolers to see the people in their neighbourhood coming to planting days and looking after the neighbourhood plants” (I4).

The findings suggest that the play activities for promoting conservation values for preschool children can be anything from recycling and water conservation to tree planting and gardening. Young children regard these activities as play and enjoy themselves while conducting them. Enjoyment and doing together are some of the main elements in play-based learning (Fesseha and Pyle, 2016, p. 373; OPH, 2018, p. 39) and important for play to contribute to learning. The literature emphasises hands-on exploration for preschool children in the local environment, using all the senses to experience and appreciate the nature (Wilson 2011, p. 7). The interviewees believe that conservation values are

developed and strengthened through exposure and by having a direct connection with nature. It emerged that combining the concept of interconnectedness with sustainability and conservation issues in play, would be an ideal way of promoting conservation values for children through play-based learning. However, the respondents stress that the actions need to be genuine and not tokenistic, and that conservation values are something that reflect from our daily lives. Thus, living in a sustainable way sets an example for young children to care for the environment.

5.3 The Role of Adults in Promoting Conservation Values

It is apparent that the role of adults in promoting conservation values for children is fundamental. According to the findings, adults are seen as role models, supporters, facilitators, guides, supervisors, as well as providers of outdoor play opportunities. The presence of adults in and their influence on children's learning about the environment and conservation is pivotal, as without them learning conservation values is not considered permanent. According to Bento and Dias (2017, p. 161), adults' contribution impacts the nature of experiences children can access and the way new knowledge is incorporated. Adults should support and encourage children's learning about conservation values, as well as set a good example for the children in regards to environmentally-friendly behaviours and practices. Literature on play-based learning also emphasises the importance of adult presence in learning situations and their role as mentors for young children (Broom, 2017; Edwards & Cutter-Mackenzie, 2011; Fesseha & Pyle, 2016). Especially, parents and guardians of the children have a crucial role in developing and securing of conservation values in children. As one interviewee states: "Look, for me, parents are the crucial, crucial link in it" (I11). A similar stance is illustrated in another quote: "I think it comes from parents. I think it all starts at home" (I2).

Parents, educators and other adults in children's daily life are considered important role models in advocating interest in the environment and endorsing conservation values for preschool children. The sociocultural learning theory underlines the active role of educators in supporting environmentally responsible behaviour in children, and that interactions with others have an important part in children's learning (Pollock et al., 2017, p. 14). There is a growing amount of evidence that adult interaction and engagement in play support young children's learning (Cutter-Mackenzie and Edwards, 2013, p. 197).

Research indicate that adult interactions and the relationship between children's cultural experiences and their understanding in play-based learning is important (Edwards & Cutter-Mackenzie, 2011, p. 52). Adults have a significant role in supporting children's learning through play. The adults need to show love and care for nature, and support children's learning of conservation attitudes and behaviours. The following quote reflects on that idea:

We still need a support of a caring teacher or parent to nurture that further because if the children go home, and this often happens that the parents don't recycle or they use big plastic bags or they hate creatures or they don't have plants and... they don't have a garden, then it kind of stops there. No matter how excited the children want to go home and try do something. (I2)

The findings suggest that when adults, who have an active role in preschool children's lives, demonstrate enthusiasm and enjoyment towards nature, and engage in conservation efforts, the children will follow. Sawitri (2017, p. 3) argues that examples of parents, teachers and other role models who express interest in nature influence children to care for the environment and eventually, engage in the protection of the environment. Also, Broom (2017, pp. 35–36) explained that family and other relationships can have an impact on the formation of environmental attitudes and that children require a mentor to endorse their love for nature and discourage environmentally harmful practices. Parents, other family members and e.g. early childhood educators should be positive role models to preschool children, as children learn from the people that they spend time and live with. When parents show interest in public issues and e.g. pro-environmental values, and participate in community projects, young children want to engage in them too (Sawitri, 2017, p. 3). The importance of positive role models for preschool children in nurturing their interest in the environment is elucidated in the following quotes:

I think having good role models, people engaging with them in that learning is probably important to have someone who's really passionate about it, to help to get the message across to them. (I1)

Because we set that example. If we have those right values, we can then pass them on and teach them the right conservation values. (I7)

I think children tend to mirror, not always but a lot of what their parents do. If the parents don't know themselves it's very hard for them to teach their own children... Because they copy. They do what they see and if they see someone chopping down lots of trees or throwing the rubbish on the ground then, they do the exact same. (I10)

It is important to mention that adults (especially parents) need to provide opportunities and access for preschool children to experience the outdoors and engage in outdoor play. In addition to the growing evidence about the importance of outdoor play for children (Bento & Dias, 2017, p. 157), family relationships are enhanced and sense of community and place in children are developed (Wilson, 2011, p. 3) during joint experiences in nature. However, despite the fact that outdoor play is a valuable play activity for children, opportunities for it have diminished over the years. There are several reasons for the decline in outdoor play such as urbanisation, fear and safety concerns, and decreases in backyard sizes and green spaces (Beyer et al., 2015, p. 2056; Dowdell & Malone 2011, p. 25). The following quote illustrates some of the reasons for the decline in outdoor activities in nature:

Especially when living more in cities and not living in the immediate environment as well. Like access to resources, transport, all those things that are already barriers to preventing families and young people to get involved in, get connected in nature. (I6)

It emerged in the interviews that there is a great concern over young children access to natural areas and outdoor play, and that parents have an active role in providing those opportunities. One interviewee discussed the disconnection from nature that occurs today among children: “But the trick is they live such disconnected lives now that understanding this is almost like a foreign language until they spend a lot of time and start to understand it” (I11). Richard Louv (2005, as cited in Dowdell & Malone, 2011, pp. 24–25) has expressed his concern on this and talks about the *nature-deficit order* in children referring to a child in nature becoming an endangered species. However, the interviewees believe that if parents and other significant adults in children’s lives provide opportunities for experiences in nature and outdoor play, preschool children can develop conservation values:

So, we would see the outdoors as a positive place for children to explore and feel comfortable and take risks and play and parents are there to be playful at times but not to dominate children’s play. (I4)

Parents should be out camping and having fires, they should be out walking on paths, climbing on little rocks, big rock, whatever. I don’t think you can overestimate the value of a really engaged parent at all. I think that is the crucial relationship that a kid has that can build their conservation. (I11)

As mentioned previously, adults are also seen as facilitators and supervisors of play experiences that promote conservation values. The interviewees agreed on the notion of free play arguing that it is important to let the preschool children play and explore without too much adult involvement. Wood (2014, p. 4) also argues that children's play-based learning should be free from adult intervention and direction allowing children to direct their own learning. It emerged from the findings that during the outdoor experiences, adults should avoid interfering children's play situations and trying to teach them constantly. Instead, they should act as "*brainy playmates*" with the children. It is clear that for preschool children to learn about the environment and adopt conservation values, child-directed approach to play-based learning is essential. The interviewees express their views on free play in the following quotes:

Yes, because I was just thinking about the parents that try and teach every five minutes. That really annoys me as well because you're completely interrupting their play. Let them play! Take the pressure off them. (I5)

My motto raising kids was "never make a happy kid happier". So, if they're happy playing in nature then, sit back and enjoy your time off. Beautiful, let them play. Don't over-structure it because they're engaging, let them play. (I11)

However, children should be made aware that adults are there for them when needed and create a sense of security for the children. Yet, adults should adopt the role of an observer in play situations and only step in when children need guidance or scaffolding. As one participant explains: "Yes, so, as a play worker, we prefer not to get involved in their play unless it stalls or there are some social issues or we're scaffolding someone for a particular reason" (I5). Skolnick Weisberg and Zosh (2018, p. 2) discuss the concept of guided play in which children's play is scaffolded by an experienced adult guiding the children to the learning goal. Adults' role as a supervisor to look after the children's safety and set boundaries is considered important due to the young age of the children. Adults should understand the risks involved but let the children build trust in themselves and the environment and thus, gain confidence and competence which is regarded important in children's relationship with nature. This emerged also in the field notes during the second observation when children were playing in a creek:

It is quite clear that the children who have been coming to this group longer, are more skilled in being and playing in the environment as opposed to those children

who have recently joined the group. Also, the older and more capable children are helping the younger ones to walk in the creek and get pass the rocks. (FN2)

According to the findings, adults structure the learning situations and the learning environments, as well as set the boundaries for the play. Adults are seen as facilitators rather than teacher, meaning that they do not intentionally try to teach the children certain content continuously but, let the children play and teach along the way when an ideal moment occurs. Adults should guide the children's learning and ask good instructive questions. The following quotes illustrate the role of adults as facilitators:

While there is free play, the adults are keeping an eye how children are interacting with the environment and teaching along the way. (I4)

I think that they (adults) should be involved because they're facilitating the activity. But it's also being aware of when things become safe and when things are not safe. (I6)

Yeah, I think adult presence is important. But having strong awareness of what the presence should look like in terms of supporting the kids' connection with nature, supporting kids' play. (I9)

Research supports this finding, indicating that play-based learning is the most efficient when the adult's role is to facilitate and scaffold learning (Fesseha & Pyle, 2016, p. 363). Skolnick Weisberg and Zosh (2018, p. 2) explain that scaffolding is provided by structuring the learning environment or "sensitively responding to children's actions in a play session and offering open-ended suggestions". It is important to mention that even though adult involvement in preschool children's learning about conservation values is considered essential, the children should be able to play freely, follow their interests and direct their own learning experience. However, it is important for adults to respond to what is happening in the play-based learning situation. The findings support the idea of sociocultural learning theory that adults (parents, family and community) have an important part in children's learning (Pound, 2006, p. 41).

5.4 Exploring through Nature Play in Ecotourism

This following part discusses how the learning environment should be constructed and what kind of interpretive tools are most suitable and effective in promoting conservation values for preschool children through play-based learning. The findings suggest that an

optimal way of teaching preschool children about the environment and develop interest in nature is the provision of nature play. Play in natural environments using nature itself as an interpretive tool is considered the most efficient practice in promoting conservation values for young children. Also, the findings indicate that storytelling is a powerful tool in endorsing those values for preschool children. Furthermore, this part deliberates the role of national parks in developing conservation values and providing nature play opportunities for preschool children.

5.4.1 Nature-Based Learning Environment

According to the findings, providing opportunities for preschool children to engage in nature play is an excellent way for them to develop interest in and understand the value of nature. Free play in nature is considered an optimal learning experience, as nature provides an environment for exploration, investigation and discovery which are essential aspects of play-based learning (Cutter-Mackenzie & Edwards, 2013, p. 197). One interviewee discusses the importance of nature play for children in the following quote:

I guess through play and particularly nature play, you get the opportunity to direct their thought process onto the wilderness, the natural world and away from other things which is their normal day to day... I think we all need to absolutely increase the amount of nature play that the kids are getting. And build whole thought processes around just activities like climbing a tree. (I11)

The importance of outdoor play to children's physical and emotional development is supported in previous literature (Bento & Dias, 2017; Beyer et al., 2015; Dowdell et al., 2011; Herrington & Brussoni, 2015). Unstructured nature play improves motor skill development, problem-solving skills, social relationships and mental health (Beyer et al., 2015, p. 2056). According to the findings, nature gives children opportunities to learn through challenges, as it gives immediate feedback, improving their confidence and competence in nature, as well as developing important skills. The outdoors is an open and a dynamic environment where children can experience freedom and be active, deal with risk, as well as interact with natural elements (Bento & Dias, 2017, pp. 157, 160). When preschool children play in nature, they can challenge themselves and test different skills, remembering the real feedback they get from nature for next time they are in that environment. In general, play enables children to address difficult experiences, try, experiment, and fail

(OPH, 2018, p. 39). Hence, it can be argued that nature play encourages children to take risks, develops resilience, and allows children to learn from nature.

Nature provides the perfect challenges for children to learn about themselves. How to walk and how to maintain balance, how you relate to each other in space, you got to trust the people that you're with in the wild. (I4)

And this where the learning becomes involved for children because children should be able to start assessing the risks themselves. (I6)

It is clear that for preschool children to learn through play, they need space to move around and explore using all their senses, they especially need to be able to touch things and get up close and personal with nature, investigate, and get dirty. Literature on play-based learning supports this finding, explaining that children should have enough space and time to work, and materials and tools must be easily accessible (Duffy, 2010, p. 133) and the learning environment should include hands-on and multi-sensory experiences, as well as co-operation and communication (Papatheodorou, 2010, pp. 157–158). When children play in nature, they get familiar with the environment and start understanding it. The learning environment should encompass a playful way to demonstrate different parts of nature, in particular, the interconnectedness of nature. Activities such as climbing trees, mud play, foraging, scavenger or treasure hunts, bushwalking, and building cubbies are considered suitable for preschool children to engage in during nature play.

It is important that children have opportunities to engage in different types of plays such as social play and role play. For example, through role play, conservation values can be promoted for preschool children by inventing an imaginary role model that children can pretend to be (e.g. a national park ranger or wildlife hero). Developmentally, sociodramatic play (i.e. pretend play with sustained role taking and narrative line) evolves when children are around three years old (Smith & Pellegrini, 2008, p. 2) and thus, can be regarded suitable for preschool aged children. According to one interviewee, role play could be a successful way of combining play with conservation values:

If everybody was a ranger. We're all rangers. Or a wildlife hero and you'd have to save some animal, a koala, or a gecko, something like that... That would be a great way to embody conservation values in children. (I9)

When considering more built or constructed play-based learning environments, such as a playground or fenced play area, it should be constructed in a way that encourages hands-

on experiences, sensory play, have a variety of play options that are developmentally appropriate, contribute to healthy risk-taking, but also, make children feel safe to explore their interest. Wood and Martin (2010, p. 4) argue that it is important that playgrounds provide a degree of risk or else, children regard them uninspiring and boring, and thus, do not want to play in them. According to Dowdell et al. (2011, p. 2011), eliminating risks from children's play prevent children to learn about risks and risk management in the real world. Again, access to adults is important when children need guidance, consolation or simply reassurance, as was noted during the third observation in the nature-based playground:

A boy, around five-years-old, is exploring and playing on his own around the playground. He seems to enjoy climbing the play equipment and other higher points in the playground. Regularly he checks if his mother is close and calls for her to look at him doing something. He climbs up to the slide and wants to jump down from high up. He seems to be a little unsure and looks at his mother for reassurance. His mother nods and the boy jumps down. He looks very happy and pleased at himself. (FN3)

Children might want to attempt climbing or jumping from high up but feel insecure and seek adult company (often a parent) for reassurance, or children might hurt themselves and need an adult to comfort them. One interviewee also described the importance of adult presence during nature play experiences:

An environment they feel safe to explore. Where they know what their boundaries are but they can go where they want to in it. But they know where access is to adults who can help them and where adults can also be available to mentor. (I4)

The findings clearly suggest that the most preferred interpretive tool for promoting conservation values for preschool children is nature itself. Nature is considered as an optimal learning tool in for children to gain understanding about the environment and thus, developing a care for it. Again, the diversity of nature provides several ways of introducing the importance of biodiversity conservation to preschool children, such as using animals and creatures as interpretive tools, by using different materials and objects from nature (e.g. sticks, rocks, and leaves) as interpretive tools, or applying different practices that can be executed in nature (such as storytelling and sit spots). According to Bento and Dias (2017, p. 158), natural elements are open-ended materials for children to use their imagination and play with, and they embody the abundance and diversity of nature contributing to the

development of the connection with the environment. Also, the findings quite clearly suggest a “*less is more*” approach in teaching preschool children about the importance of conservation. Several interviewees emphasise the role of nature as a learning tool:

Considering that a natural environment or conservation area or something like that allows for so much learning in itself... Just things that are collected from the natural environment. (I1)

The creatures and being outside and having trees and places that we can go and look for things and have a look at different styles of leaves and plants and stuff like that... We use nature as our tools. (I2)

The role of Information and Communications Technology tools in preschool children’s learning about conservation values is somewhat conflicting according to the findings. On one hand, ICT tools and devices are recognised as part of the contemporary world and children’s learning today, something that cannot be ignored completely. One interviewee described the role of ICT tools in the following quote: “I think they can be quite valuable. Children will be knowing ICT so we can’t completely remove that from them” (I1). On the other hand, they are considered unnecessary or disruptive in the context of preschool children developing an interest in nature and educating them about it. One interviewee argued that ICT tools do not need to be a part of small children’s learning: “Technology? Yeah, not at all. There’s so much research now that tells us that children in early years shouldn’t really be exposed to screens” (I9). Another interviewee emphasised the importance of experiencing nature and not including technology in it: “Keep them away. They’re getting enough of that. Just do nature because nature is what it is. And really allow the child to experience it without having to interact with screens” (I11). It appears that the more inclined the participants are to conservation and committed to the principles of ecotourism, the more sceptical and opposed they are about the ICT in promoting conservation values for preschool children.

However, the general consensus is that ICT tools are understood as a part of children’s lives in the modern society though, their application in the context of preschool children’s learning should be considered thoughtfully. Also, ICT tools do not seem to have an important role in play-based learning that occurs in nature or during nature experiences. They are considered beneficial and relevant as a supportive tool used after the learning experience (e.g. at home or in classroom reflecting on what the children have learnt during

the learning experience). Conflicting thoughts on the role of ICT tools in preschool children's learning were reflected in the data:

I don't think they need to be there all the time. I don't have an issue with them in such but I don't think they are required part of nature play. I think that they are a bonus... It does put a barrier. I think that they're good for some things. More as a reflective tool. (I4)

There is evidence in previous literature (Howe & Davies, 2010; Marksbury, 2012) about the debate on the role of ICT in children's learning, presenting the differing views on the topic. Yet, Howe and Davies (2010, p. 162) conclude that because ICT has an important part in the world of science today, it should be considered to be included in preschool children's learning as well. However, it can be argued that in the context of ecotourism in which nature plays a significant role, ICT tools and devices are not a necessary part of preschool children's learning experience, as they can hinder children from fully experiencing nature and thus, impair their learning about it. It is important to mention that in regards to disabilities and learning disabilities, the use of ICT should be supported fully.

5.4.2 Storytelling – A Powerful Tool in Promoting Conservation Values for Preschool Children

When exploring suitable ways for promoting conservation values for preschool children by using play-based learning, storytelling emerged as an effective method. The disposition of storytelling to engage children and impact their learning is considered significant. According to the findings, storytelling can be used as an interpretive tool for preschool children, as it stimulates their imagination and assists in remembering what they have learnt. "We explore it through stories and songs, things that enliven their imaginations so, that when they're out again and play, they recall that and it becomes part of their knowledge as well" (I4). Storytelling is one of the oldest forms of communication in the world and is accessible (de Groot & Zwaal, 2007, p. 46) as well as inexpensive as an interpretive tool.

Storytelling is understood as a powerful practice to educate children about the environment. Research indicates that storytelling can strengthen children's relationship with the environment and contribute to developing a sense of place (Wilson, 2011, p. 13). Liu, Chen, Shih, Huang and Liu (2011, p. 873) argue that storytelling is an essential and

creative approach in improving learning, as children use reflection to understand what they are learning based on their observations and knowledge. Children can build strong connections with the environment through stories. Storytelling can help preschool children to understand the importance of the environment and make a personal connection with it. Storytelling is used universally to communicate images, values, views, problems and solutions (de Groot & Zwaal, 2007, p. 52). The power of storytelling is reflected in the following quote:

They can re-tell the stories or they can play the stories or they can be reminded when they're walking through a space or playing in a natural space. They'll be reminded of aspects when they see something interesting and that will all come back and they're able to share that information that way. Ecological storytelling... We've given it a name because it's so important to us. (I4)

The format of storytelling is easily understandable to preschool children which contributes to remembering the stories. Through storytelling, children actively interpret the experience instead of memorising it (Liu et al., 2011, p. 873). Children remember things through stories by sharing them with other people, re-telling them and playing them. Howe and Davies (2010, p. 161) argue that the narrative approach to learning is consistent with the socio-cultural understanding of learning and storytelling is a worthy practice to promote scientific understanding in children. Children can also mentor each other with their own stories of the experiences and practice storytelling at home with their families. In the following quote, one interviewee describes the role of stories in promoting conservation values for preschool children in an ecotourism context:

I think it's a great opportunity to build a conversation in children that they are a part of nature, not separate from it. If you had stories that are playful and engaging for children and enable movement and being the characters in the stories. (I9)

The stories can be traditional (told) stories and they can be based on local environments, seasonal changes or the weather. According to literature (Wilson, 2011, p. 13), *situated narratives*, which are related to the local environment and stories about particular local places, is emphasised in environmental education. Storytelling can be also about role modelling around conservation values or built around the wildlife of the environment, e.g. stories about previously presented national park ranger or wildlife hero, or about an animal that lives in that particular ecosystem. De Groot and Zwaal (2007, p. 46) explain that stories such as hero tales can build identities of groups and associations. Notably,

animals seem to resonate with preschool age children and raise interest and fascination in them. The findings indicate that young children love animals and want to learn about them. The strong effect of animals on preschool children is reflected in the following quote from the fieldnotes during the first participant observation, the nature walk:

The children stop in the walking trails as we have spotted a koala in a tree. It is high up but we can see it well. The children spend a long time just watching the koala, talking about what it might be doing up there and asking questions about it. They are very concentrated on the koala and not in hurry to continue the walk. (FN1)

The fieldnotes continue with another observation about kangaroos:

We come to the open area where all the kangaroos are resting and eating. The children are very fascinated about the kangaroos and can't seem to grasp that there are so many of them. They watch the kangaroos for quite some time and get excited when some of them start moving and jumping. The children ponder what the kangaroos are doing and try to guess which ones are the daddy kangaroos and mummy kangaroos. They are very interested in the little joey kangaroos. They talk about the kangaroos like they were their friends. (FN1)

It is also suggested that preschool children can be co-designers of the stories, by creating a story and then, doing the story. Co-designing in play-based learning that promotes conservation is considered to give the children the power to design the experiences and activities they want to participate and engage in. In the following quote one interviewee explains the power of co-design and regarding preschool children as capable decision-makers:

It would be possible. Because you would be asking them what they would like to do, how they would like to do that. Because children are exposed to what's going on in the world. They're not living in a bubble anymore. (I6)

However, it should be taken into consideration that according to Liu et al. (2011, p. 874), storytelling is a complex process that includes imagination, organisation and narratives making it difficult for children to master and actually create novel stories. Yet, they argue that it is important to enhance children's storytelling skills due to its various impacts on children's learning (p. 873). Children should be provided opportunities to engage in storytelling, as it supports their process of maturity and learning (Unnsteinsdóttir, 2012, p. 332) as well as impacts the development of creativity in children (Liu et al., 2011, p. 882).

5.4.3 The Role of National Parks in Promoting Conservation Values for Preschool Children

According to the findings, national parks are recognised as significant learning spaces for preschool children. National parks provide an excellent context to teach children about the importance of having protected areas and they can gain understanding of what needs to be protected and why. Bushell and McCool (2006, p. 12) explain that park visitation contributes to promoting conservation of the natural environment and cultural heritage of the area. Visiting a national park is a good opportunity for children to learn about biodiversity of the area; the flora and fauna. National parks can provide the information through education and interpretation. Environmental education together with first-hand nature experiences are argued to foster pro-environmental attitudes and behaviour, as people tend to understand the values connected to nature better when they experience it first-hand (Beaumont, 2001, pp. 318, 320). Learning about the ecosystems and wildlife that live in the national park can kindle an interest in protecting the national park, as children are experiencing the environment directly and enjoying it. Through playing in nature, learning becomes enjoyable. That is because play allows children understand that learning is enjoyable, rewarding, beneficial, and challenging (Moyles, 2010a, p. 292). It is essential that a right and genuine message is being interpreted to the children in a correct way. This is demonstrated in the following quote:

So, look, I would have to say that that would depend on how that national park is being interpreted to the person, to the child. So, if that child is just treating it as a “I’m going to do this”, the utilitarian “I’m entitled to go in here, therefore, I am” then, I don’t think they’re learning anything. I really think it comes down to how the nature is being interpreted via parents, teachers, carers, learners, businesses, whatever. (I11)

Children are also able to observe themselves the difference between protected and unprotected areas. It is believed that national parks can encourage responsibility in preschool children, as they learn that protecting the environment is a shared task. The importance of national parks in children’s environmental learning is illustrated in the following quotes:

National parks are very important sacred spaces. They hold our cultural heritage. They hold our extremely important national values. (I6)

I think national parks are a great kind of learning space. So, obviously the protection of the area, the protection of the environment and everything that is around. So, I think that's really important because you can teach them that there are things in place to protect the environment and everything around it in nature. (I7)

I think national parks really highlight the importance of having protected areas, especially if they've got specific things within them and it highlights it even more when you just go to a local park down the road. (I10)

Visits to national parks are exciting adventures for young children and they can stimulate curiosity towards a new kind of environment. The findings indicate that visiting a national park is a full-body emergence for children and an experience they consider magical. However, it is important to mention that according to the findings, one-time visits to national parks are not believed to be enough for gaining understanding about the environment that can contribute to development of conservation values. As mentioned previously, preschool children need regular exposure with nature in order to establish conservation values. Also, as play-based learning requires both, experiences and engagement with knowledge (Cutter-Mackenzie & Edwards, 2013, p. 198), national parks need to provide environmental learning opportunities for preschool children for them to develop conservation values when visiting the park.

However, it is clear that children benefit from visiting a national park by experiencing a place where there are restrictions and boundaries in place. It is good for children to understand that they cannot change the environment, walk and step wherever they want, that they must follow the tracks, not pick plants or anything else that is living, and not to disturb wildlife. Learning about these guidelines develop environmental responsibility in children. In the following quote, one interviewee discusses the role national parks have in children learning about conservation:

National parks are protected, so it's important to have an experience of being in place where you can't change the environment the way you want to, and you're not meant to take anything out of a national park. It has to be left as it is. So, even if you want to build cubbies and things, you should really return it to state that you found it in. That's developing that sense of environmental responsibility. (I4)

Concurrently, the restrictions and boundaries, i.e. the code of conducts of national parks, are also seen as barriers for children to fully experience and understand national parks. As children need hands-on and sensory-based experiences that allow them to get up close

and personal with nature, these barriers are preventing them to comprehensively experience the environment. If the environment is not stimulating and exciting for children, they regard them boring which disadvantages their learning (Papatheodorou, 2010, p. 156). Also, literature on play-based learning emphasises child-directedness, children being in charge of their learning and choosing their own actions (Fesseha & Pyle, 2016; Moyles, 2010a; Skolnick Weisberg & Zosh, 2018). This can be considered challenging in a national park setting where there are restrictions and boundaries in place.

National parks are perceived as being uncomfortable with children being in contact with the environment and not having much consideration in how young children interact with nature. Research suggest that recreational activities in national parks can negatively impact the parks environment (Ramkissoon, Weiler, & Smith, 2012, p. 7) and also nature play can have long-term impacts on the environment (e.g. trampled ground-cover vegetation, eroded organic litter, broken tree branches, stripped tree leaves, cuts into tree bark, and exposed tree roots) (Browning et al., 2013, p. 109). The lack of interplay between national parks and young children was reflected in the data:

Not much actual interaction with children. When we first started X (the company), we were working with national parks quite a lot. I mean... they never were comfortable, I found, with the whole concept of children being up and close and in contact with nature. (I9)

The low level of tolerance for young children's behaviour in nature is something that national parks should consider when discussing how to promote conservation values for children. According to Browning et al. (2013, p. 110), there is evidence that the social benefits of nature play may override the environmental harm and nature play can develop a new generation of conservationists to protect the environment. It is suggested that national parks could dedicate a particular area for small children to explore and experience nature in a way that is natural to them. According to literature (Howe & Davies, 2010, pp. 163–164; Papatheodorou, 2010, p. 152) outdoor play promotes diverse and imaginative play and allows children to use all their senses to develop an interest in the natural world. Also, the introduction of a bush kindergarten or nature playgroup is seen as potential programs to implement in national parks. Browning et al. (2013, p. 110) argue that nature play can be a valuable approach to balancing recreation and resource protection.

National parks offer also other opportunities to develop and provide structured and unstructured activities for young children and their families, especially by third party providers such as ecotourism companies operating in a national park. According to Meier and Sisk-Hilton (2017, p. 192), participating in both, structured and unstructured nature experiences enable children to develop understanding of the natural world that allows them to engage in complex investigation and knowledge building. The approach of guided play in play-based learning combines the notion of child-directedness and adult support in learning and can be applied to the national park context. Guided play consists of adults designing the play setting and allowing children to explore freely in the setting, or observing child-led activities and supporting the learning experiences (Skolnick Weisberg et al., 2016, p. 178). Ecotourism companies can offer activities from short bushwalks to organised play-based programs interpreting the importance of the biodiversity of the national park. Protected areas can also benefit from educational programs because of improved environmental stewardship, knowledge about the environment, and positive attitudes towards the area (Stern, Wright & Powell, 2012, p. 29). The findings suggest that it is important to create a narrative around the national park environment that can be transferred to children's local environments and get them understand how to protect those environments too. The idea about early childhood connections with nature provided by national parks (or third parties operating in national parks) is found potential as well as important, as there is not much consideration in how young children interact with nature in the context of national parks.

6. IMPLICATIONS FOR BINNA BURRA IN LAMINGTON NATIONAL PARK

This chapter discusses the implications of the results for Binna Burra Lodge and deliberates what Binna Burra (and other ecotourism companies) can do to promote conservation values for preschool children through play-based learning. The results of the study indicate that experiences in nature are considered the most important factor in fostering an interest in and a care for nature for young children. Therefore, it is important for Binna Burra to understand how to provide such experiences for preschool children to encourage their desire to protect the environment. The findings suggest that an ideal way for promoting conservation values for preschool children in ecotourism is embedding nature-based play-based learning in environmental education and interpretation.

The most valuable implication of the thesis study for Binna Burra is understanding that conservation values do not develop in preschool children just by visiting a site once and that adults have an important role in promoting those values for young children. Visiting an ecotourism site or a national park, does not establish a care for and desire to protect the environment immediately but requires regular experiences in that environment. The results suggest that developing a connection with nature through regular exposure is essential. Literature supports this idea that developing a relationship with nature requires time and space spent in nature (Rantala & Puhakka, 2019, p. 93).

Children are considered important in influencing families' consumption behaviours and travelling preferences (Canosa & Graham, 2016, p. 220; Poria & Timothy, 2014, p. 94). Families with young children should be taken into consideration in Binna Burra's operations and marketing, and opportunities for them to engage in nature together should be provided more. Also, because parents and guardians have an essential role in providing opportunities for children to experience natural environments and adult presence is needed to structure and guide children's learning and to look after their safety, adults should be included in play-based education aimed at preschool aged children. Rantala and Puhakka (2019, p. 94) also emphasise the role of parents and grandparents in children establishing a relationship with nature and local natural environments. Also, Wilson (2011, p. 7) argues that preschool children are more likely to want to participate in learning experiences if their parents are active and interested in nature.

The results indicate that providing more established avenues to engage families with young children with the environment is essential for Binna Burra. As mentioned

previously, research suggests that natural environments influence pro-environmental attitudes in children and contribute to environmentally responsible behaviour (Lee & Jan, 2015, p. 193). Binna Burra should be easily discovered by and accessible for families with young children to enjoy the national park. For example, Rantala and Puhakka (2019, p. 95) argue that natural areas, such as national parks, should be accessible by public transport. Muñoz, Hausner, Brown, Runge and Fauchald (2019, p. 261) explain that understanding how visitors are attracted to and use space and time in protected areas, is important for their visitor management. Providing child friendly and low-threshold services and activities is essential when attracting families with young children.

As local natural environments have a significant role in building a connection with nature and introducing the concept of conservation for preschool children, also local families should be attracted to visit Binna Burra. As argued, ecotourism can be a tool for getting local people to understand the value of their natural resources and to protect them (Stronza, 2008, p. 5). The results suggest that parents are looking for opportunities to experience natural environments with their children in or near their local surroundings. According to Rossi, Pyrne and Pickering (2015, p. 78), interest in visiting regional and national parks may increase due to the amount of urban greenspace (e.g. parks) declining as a result of urbanisation. Involving local families and communities in their operations, Binna Burra can strengthen the relationship between families and nature and thus, develop an interest in young children to become conservationists of that environment. There is evidence that children's *primal landscape* (the environment children grow up in) influences the way they perceive and interact with nature throughout their lives (Rosalino et al., 2017, p. 2677). Attracting local families with young children to visit Binna Burra regularly is recommended, as the results indicate that promoting conservation values for preschool children requires regular, repetitive exposure to nature, preferably in children's local environments.

The results of the study can be used in several ways in the development of Binna Burra. Firstly, the results can be utilised as a guideline to understand how preschool children can learn about the environment and biodiversity conservation through play, and how to promote conservation values for preschool children. Secondly, Binna Burra can apply the results in designing and developing play-based ecotourism education and interpretation for preschool aged children and their families. They can be used in the development of play-based education programmes aimed at preschool children. These programmes can

be organised throughout the year or during the holiday seasons (e.g. school holidays). The results can also be used in designing and constructing a nature play area or other type of play area for children (such as fenced play area connected to a restaurant or café). Lastly, the results can serve as a recommendation for Binna Burra to collaborate with local communities, as well as childcare centres and kindergartens to attract more preschool aged visitors, enhance its relationship with locals and contribute to raising future conservation advocates.

The results suggest that there are several ways for Binna Burra to get children involved and interested in the environment, and integrate play-based learning that promotes conservation values in the business. Embedding nature play opportunities in its operations is an idea that Binna Burra should consider to provide space for free play, allowing children to develop their own relationship with nature. Puhakka et al. (2019, p. 2) discuss that green yards, offering children increased play opportunities and more creative, unstructured free play, can strengthen the relationship with nature and increase environmental concern. Child-initiated play is considered essential in preschool children's learning and thus, should be enabled and encourages in the ecotourism context as well. Nature play spaces are considered to provide both, freedom and security for children, reducing the stress and concerns parents might feel towards free play in wild nature, as parents tend to consider them safe and comfortable (Browning et al. 2013, p. 105).

Nature play opportunities can be provided for preschool children by building a nature-based playground or designating a specific area (e.g. less sensitive disturbed area) to play in. Puhakka et al. (2019) studied the greening of urban day-care yards in Finland and discovered that the green materials (e.g. forest floor mat, sods, peat blocks and planters) provided embodied nature experiences, facilitated children's multi-sensory exploration and diverse learning situations, as well as promoted spontaneous play and teacher-led activities. Play environments should provide fun, pleasure, choice and freedom for children, as without these qualities children no longer consider it play which can impact their interest and engagement (Herrington & Brussoni, 2015, p. 478). Organising nature playgroups and nature-based kindergartens (e.g. bush or forest kindergartens), or allowing established nature playgroups and kindergartens to use their space is another way Binna Burra can integrate play-based learning in their services.

However, as Binna Burra operates in a sensitive environment of a national park, it should consider the barriers for children to explore, touch and be up close and personal with the environment. Binna Burra should assess the possible environmental impacts of nature play with respect to possible social and economic benefits deriving from it. Browning et al. (2013) recommend that park management, when developing nature play areas, should select impact-resistant sites, improve site resistance, promote low impact practices, and manage adaptively. Also, Binna Burra should remember that conservation is the primary focus of ecotourism (Mbaiwa & Stronza 2011, p. 338) and protecting the valuable and sensitive environment should be its priority.

Embedding the principles of guided play, combining child-directedness and adult guidance, is a way Binna Burra can integrate play-based learning in the educational programmes and activities offered for preschool children. Guided play integrates child-led free play with adult support and guidance in learning, engaging them in a fun and voluntary way but ensuring that the learning outcomes are met (Skolnick Weisberg et al., 2016, p. 178). As Edwards and Cutter-Mackenzie (2011, p. 52) discuss, play-based learning should acknowledge and include the role of the adult educator in connecting play activities to content learning and in planning the learning situation in relation to children's play and acquisition of content knowledge. Integrating guided play in ecotourism can be done by having a knowledgeable adult (e.g. environmental or early childhood educator) planning and structuring the play-based learning settings and activities, and guiding and scaffolding the children during the activities (see Skolnick Weisberg et al., 2016, p. 178).

Interpretation aimed at preschool children should use a playful way of demonstrating different parts of nature and especially communicate the message of interconnectedness. According to literature, interpretation is a powerful way of communicating environmental messages (Peake et al., 2009, p. 108) and increasing understanding and awareness (Maarten & Harms, 2014, p. 123). Incorporating animals and creatures (e.g. spiders, ants and other bugs) in the message is considered an effective way of engaging children in environmental learning and developing an interest in nature. This can be implemented in interpretive signage, by providing opportunities for role play, or communicated through storytelling. Fictional role models can be used in stories and role play to engage children with the environment through play. Creating a story around an imaginative wildlife hero, a national park ranger or a native animal and communicating it for preschool children could be a fun and influential way of promoting conservation values for them. Stories of

local environments and places are used as a teaching tool to educate and inspire children as well as to connect them emotionally with the environment (Wilson, 2011, p. 13). However, it is important for Binna Burra to remember that providing opportunities for free play in natural environments is the foundation for getting preschool children interested in nature and building a relationship with it, which in turn, is required for the development of conservation values in children.

7. CONCLUSIONS

The protection and conservation of nature is more important today than ever before. Therefore, teaching children about the environment and its conservation is crucial. Ecotourism can be a suitable context for promoting conservation values, as it emphasises both, environmental education and conservation. The educational dimension is a key element of ecotourism, raising environmental awareness through interpretation as well as educational programmes and activities. Whereas, conservation should be the primary goal of any ecotourism initiative. The objective of this thesis study has been to understand how ecotourism companies can promote conservation values for preschool children by integrating play-based learning in their operations. Qualitative research methods of interviewing and participant observation were used in the study. Play-based learning as a theoretical framework for learning was chosen because play is the most natural way children learn and developmentally frequent during preschool years (from two to six). Also, play-based learning is a preferred approach to learning in early childhood education around the world.

The results indicate that nature itself is the most optimum learning agent in promoting conservation values for preschool children through play. For preschool children to want to protect nature, they need to love and care for it. Love for nature is fostered through connecting with the natural environment and developing a positive relationship with it which in turn, is believed to build environmental consciousness in children. Regular experiences in nature are the most important contributor to developing environmental consciousness and conservation values in preschool children. They also need to understand the interconnectedness of nature to be able to comprehend the concept and importance of conservation. Again, experiences in natural environments, especially in children's local environments, help understanding how everything in nature is connected.

The role of adults in promoting conservation values for preschool children through play-based learning is fundamental. Adults are seen as role models, supporters, facilitators, guides, supervisors, and providers of play opportunities in nature. Adults, especially parents, need to support and encourage learning about the environment and conservation, and act as good examples regarding pro-conservation behaviours and practices. In play-based learning, adults' role is to structure the learning situation and observe during play, interfering only when children need guidance or scaffolding. The results strongly indicate

towards the approach of guided play in play-based learning that promotes conservation values for preschool children.

The results suggest that an optimal way of teaching preschool children about the environment and developing an interest in nature is the provision of nature play. Play in natural environments using nature as an interpretive tool is considered the most efficient practice in promoting conservation values for preschool children in ecotourism settings. Play-based learning that promotes conservation values requires space, sensory stimulation, and interaction with nature. The learning environment needs to encompass a playful way of demonstrating different parts of nature, especially the interconnectedness of nature, and allow for exploration, investigation and discovery which are essential features of play-based learning theory. The preferred interpretive tool for promoting conservation values for preschool children through play is nature itself. Natural materials and elements in nature, animals and other creatures, as well as different practices which can be executed in nature are considered the most effective interpretive tools for young children in natural play-based learning environments. Storytelling is regarded as an effective practice in promoting conservation values for preschool children, as it stimulates children's imagination and assists in remembering what they have learnt. Through storytelling, children can develop their relationship with nature and create their own sense of place.

As parents and local environments have a central role in promoting conservation values for young children, thinking how to support and encourage families to spend time in nature and ecotourism spaces is essential. Promoting accessible and child-friendly ecotourism experiences for families with young children contributes to the future of conservation. As local environments have an important part in connecting preschool children with nature and introducing the concept of conservation, promoting local tourism and encouraging local visitors to Binna Burra is recommended. Families are increasingly interested in vacationing locally and visiting local natural environments. Proximity tourism and staycation options should be promoted by ecotourism companies to attract more local visitors, especially local families with young children to contribute to more environmentally sustainable tourism and develop environmental stewardship in children and thus, create new conservation advocates.

The thesis study contributes to understanding that conservation values cannot develop in preschool children by visiting an ecotourism site once, but require regular experiences in

nature, and that the role of adults in play-based learning is fundamental. Ecotourism sites should not dismiss these two factors when integrating play-based learning in their operations with the intent to promote environmental awareness and conservation values for young children. The study also helps ecotourism companies to understand how conservation values and environmental education in general can be promoted for preschool children in ecotourism by using play-based learning in the realisation of educational programmes, activities and settings. As children are fairly absent in tourism studies, this study contributes to including young children in academic discourse in tourism research, and also joins discussions on early childhood environmental education and play-based learning. Including preschool children in tourism studies, contributes to promoting a more inclusive view of ecotourism and tourism in general.

However, it is recognised that the study has several limitations. Firstly, the time and resources available for the study limit the study sample. The sampling is small, consisting of eleven interviews and three participant observations. Also, the context of the study is from the Western point of view, studying mainly urban children. Different results would have been collected with larger sample and more diverse study context. Secondly, the perspectives and views of children themselves are not represented strongly in the study, as children's life worlds are difficult to study due to preschool children's inability to express their thoughts completely. Also, the current body of tourism literature and unfamiliarity with theories related to children in tourism research, as well as the researcher not having previous knowledge on and experience in education can limit the researcher's ability to understand children's play-based learning in the study context.

The limitations of the thesis study can inspire future studies. Future qualitative studies could concentrate more on the participant observation, taking into account play and learning about the environment and conservation values more from the children's perspective, trying to understand their engagement in play-based learning. Studying children's tourism experiences based on their own voices is important for both, tourism research and tourism industry. Also, as it emerged in the study, it would be useful to focus on studying how to implement co-design in play-based learning with children when designing activities, programmes and interpretation in the ecotourism context. As the results of the study show, parents have an important role in promoting conservation values for children and thus, it would be important to understand how conservation values can be promoted to families with young children by using play-based learning or another approach to learning. It

would be valuable to understand merely how families with young children can be attracted to visit ecotourism sites, especially locally. It would be worth studying how ecotourism can support and encourage families to spend time together in natural environments and connect with nature.

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APPENDIX 1: Semi-structured interview

Background:

- What is your age?
 - a) 18-24
 - b) 25-34
 - c) 35-44
 - d) 45-54
 - e) 55-64
 - f) 65 or older

- What is your background? And field of expertise?
- What is your current position?
- What experience do you have with young (preschool) children?
 - Any experience in teaching young children? Or other children?
- What do you think about play-based learning? (see description of play-based learning)
- Have you visited an ecotourism site with young children?
- How should ecotourism companies take young children into consideration in their operations?

THEME 1: Learning about biodiversity conservation through play (How preschool children can learn about biodiversity conservation through play?)

1. Do you have experience in teaching children/children learning about conservation?
 - What kind of?
 - What kind of methods were used?
 - How did it work?
2. How do you think children can learn about biodiversity conservation through play?
3. What are the things that children can learn about biodiversity conservation through play? (What concepts?)

4. What kind of play can be incorporated in teaching about conservation?
 - That encourages gathering of information and implementing ideas?
 - How does it promote learning?

THEME 2: Nature as a learning agent in promoting conservation values among preschool children (How can learning with/in nature promote conservation values for preschool children?)

1. What is your experience with preschool children spending time in nature?
2. Do you have experience in conducting learning activities in nature?
 - What kind of?
 - How did it work?
3. How can being and learning in nature promote biodiversity conservation among preschool children?
 - Why is nature important in children's development and learning?
 - How does being in nature affect children? (Emotional, social, physical, intellectual?)
 - What kind of play can be executed in nature that encourages conservation?
 - How does conservation values relate to children's early relationship with nature?
4. How does being and playing in a national park contribute to promoting conservation values?

THEME 3: The role of adults in promoting conservation values thorough play-based learning (What is the role of adults in play-based learning that promotes conservation values?)

1. In your opinion, should play (in the context of learning) be free, structured, or restricted?
2. Do you think adult presence is important in children's learning situation/experience?
 - Why/why not?
3. What do you think adults should do in a learning situation? How much should they be involved?

4. What has been your role in a play-based learning situation?
 - What did you do in the situation?
 - Did you use intentional planning and facilitation of play?
 - How did it work?
 - How was learning measured?

THEME 4: Interpretive tools (What type of interpretive tools can be used to promote conservation values for children in an ecotourism site?)

1. Based on your experience, what do you think about the role of learning tools in young children's learning?
 - What kind of tools/equipment/materials do you consider important?
 - Why is that?
2. What kind of tools have you used in your work with children?
 - How do they work?
3. How do you feel about Information and Communications Technology (ICT) tools/devices in preschool children's learning?
 - What ICT tools do you think are important? (computers, tablets, phones, digital whiteboards, e-readers, document cameras...)
 - What is your opinion about the role of games (virtual/online and others) in preschool children's learning?

THEME 5: The learning environment for promoting conservation values for preschool children (What issues should be considered and included when designing interpretive tools for promoting conservation values for preschool children?)

- How would you describe an optimal learning environment for children?
 - Formal/informal? Why is that?
 - Outdoors/indoors. Why/why not?
 - Activities. What do you think about learning through activities?
 - How do you feel about creativity/arts/music included in the learning environment? Why is that?
 - How important is the presence of other children?

- What kind of learning environments have you created for children in your work?

How do they work?

- Space
 - Time
 - Resources (what materials, how presented)
 - Developmentally appropriate
 - Structured/creative/free (for child to decide)
-
- How would you teach conservation values for preschool children?

APPENDIX 2: Letter of Consent

Dear xxx,

My name is Heli King. I am a student in the Master's Degree Programme in Tourism, Culture and International Management (TourCIM) at University of Lapland, Rovaniemi, Finland. I am currently working on my master's thesis "Promoting Conservation Values for Preschool Children through Play-Based Learning in Ecotourism" under the supervision of Senior Lecturer José-Carlos García-Rosell (xxx@ulapland.fi, Tel. xxx). This research is supported by Binna Burra Lodge in Lamington National Park, Queensland (contact is Steve Noakes, Chairman of the Board of Directors). The purpose of the study is to understand how play-based learning can promote conservation values for preschool children in an ecotourism context. The results of the study will be published as part of my master thesis and other academic publications.

Play-based learning is to learn while playing, involving both, child-initiated and teacher-supported learning. Two different types of play have been the primary focus for early learning pedagogy: free play (directed by the children themselves) and guided play (play with teacher guidance or involvement). The use of play-based learning is argued to promote development and learning in children.

You are invited to participate in my master's thesis study. By signing this letter, you give consent to use the interview material confidentially and exclusively for research purposes. The research follows the principles for responsible conduct of research dictated by the Finnish Advisory Board on Research. The data will be handled anonymously. Your participation is voluntary and you can withdraw your permission even after signing this document, by informing the below mentioned contact person.

Please feel free to contact me or my supervisor, if you would need further information regarding the study and the use of the research data.

Sincerely,

Heli King, TourCIM Master student

I give consent to use the interview as data for the purpose mentioned above.

Signature

Date

Print Name

APPENDIX 3: Letter of Consent for Parents

Dear Parent,

Your child has been invited to participate in a thesis study entitled *Promoting Conservation Values for Preschool Children through Play-Based Learning in Ecotourism*, conducted by me, Heli King, a Master student at University of Lapland, Rovaniemi, Finland under the supervision of Senior Lecturer José-Carlos García-Rosell (XXX@ulapland.fi, Tel. XXX). I write to seek your approval and assistance to conduct research and to involve your child as a participant.

The purpose of the study is to understand how play-based learning can promote conservation values for preschool children. The results of the study will be published as part of my master's thesis and other academic publications. The thesis is conducted as part of the Master's Degree Programme in Tourism, Culture and International Management (TourCIM).

Demands on children:

If you agree for your child to be included, your child will be observed in their normal play/learning activities organised by the child care providers/teachers. **The child will not be interviewed, filmed or photographed during the participation in this study.** The researcher will take notes of the children playing during the observation.

Possible risks, inconveniences and discomfort:

Apart from your child being observed during the play activities, I can foresee no risks for your child. Your child's involvement in the study is voluntary and he/she may withdraw from the study at any time and withdraw any data that has provided to that point.

By signing this letter, you give consent to use the observation material confidentially and exclusively for research purposes. The research follows the principles for responsible conduct of research dictated by the Finnish Advisory Board on Research. The data will be handled anonymously. Your child's participation is voluntary and you can withdraw your permission even after signing this document, by informing the below mentioned contact person.

Please feel free to contact me or my supervisor, if you would need further information regarding the study and the use of the research data.

Sincerely,

Heli King (TourCIM Master student)

I give consent to use the interview as data for the purpose mentioned above.

Signature

Date

Print Name