School of Education

Children's Garden Design: Young Children's Perspectives on the Affordances of Outdoor Spaces

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This thesis is presented for the Degree of

Master of Philosophy (Education)

Of

Curtin University

November 2015

Declaration

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgment has been made.

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.

The research presented and reported in this thesis was conducted in accordance with the National Health and Medical Research Council National Statement on Ethical Conduct in Human Research (2007) – updated March 2014. The proposed research study received human research ethics approval from the Curtin University Human Research Ethics Committee (EC00262), Approval Number # HR172/2014

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Abstract

This research aimed to seek children's perspectives on what is compelling to them in natural outdoor play spaces and the affordances of the elements in the space. Outdoor play spaces in early years settings in Australia are predominantly designed by adults, with little consultation from the children who will use these spaces. These spaces generally consist of fixed play equipment, a sandpit and a synthetic ground covering, with few, if any, natural or garden elements. Current literature has reported that children need regular contact with nature for their own physical and emotional wellbeing and to learn to care for the earth as custodians. The qualitative case study reported here looks at an early years setting that provides a nature based outdoor play space for 3 and 4 year old children to play in and interact with as part of their everyday lives. Six children attending the setting were involved in an interpretive participatory study through child-led tours, children's photography, book making and map making.

The findings of the research were interpreted through coding all the data and looking for similarities across all visits. Five themes have been recognised through analysis of the children's perspectives as making a compelling environment. These themes, as well as the rights-based approach to consulting with children, may be useful for designers, parents, educators, school communities and early years settings when designing or re-designing outdoor spaces in consultation with children.

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Acknowledgements

I wish to thank my three children for inspiring my passions around young children and outdoor play. Their daily perspectives and insights on gardens have been magical and have set me on a path to bring all children in touch with nature. I also wish to thank my husband, Andrew, for encouraging me to pursue my dreams of changing the world, on top of our busy working lives and parenthood.

My sincere thanks and appreciation is extended to my two amazing supervisors. I thank Jenny Jay for her patience, ongoing encouragement, enthusiasm for the research topic and regular coffee meetings to keep me motivated when I was feeling I had taken on too much. I thank Stefania Giamminuti for her professional inspiration, wealth of knowledge and passion for children's voices being heard. I consider myself extremely lucky to have worked with, and learned from such amazing women. I am overwhelmed when I reflect on how much learning has taken place during this journey because of my supervisors.

This research would not have been possible without the contribution and involvement of the children and educators at the early childhood centre chosen for this case study. I would like to thank them for sharing their valuable insights and knowledge.

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Chapter 1: Introduction

As a researcher, educator and designer in this qualitative study of young children's perspectives on gardens, my knowledge, experience and motivation have influenced this project. I will therefore begin by sharing a short personal history. I have always been drawn to the garden as a source of inspiration and wonder. As a child growing up in rural Australia, I enjoyed many hours of freedom to explore my home and garden environments and enjoyed helping my father with the garden work. From my early teenage years I was interested in young children and decided to study early childhood teaching at university, once I completed school. During the following 19 years as an Early Childhood Teacher (and later as a mother of 3 children), I noticed that when the children I observed were in natural settings their play changed, they appeared more calm and relaxed and they seemed happier. The children were more engaged for example, when they were digging holes, making mud pies and hiding in trees. These observations prompted my interest in the topic, and led me to investigate further through reading and attending opportunities for professional learning. This prompted me to study playground design and landscape design. In 2011 I became a qualified landscape designer and started to design natural play spaces for children's services. As the spaces changed, I began to wonder what the children thought about these changes and I wondered how they could be involved in the design process.

There is a wealth of literature on early childhood development, early years teaching practices, as well as on the benefits of nature for children. There is also growing interest in including nature in early years practices, however research focusing on the child's perspective in this field is limited. There is a real need for research on natural play environments with a focus on the children's views to help build a foundation for the design of outdoor spaces for children. This research investigates the elements and spaces in a garden that are compelling to young children and the affordances the children give to these elements and spaces.

Gardens and Nature in Outdoor Play

There is an international movement to bring children in touch with nature through outdoor play, with the addition of natural elements and gardens in public spaces, schools and early years settings. (Elliot, 2008). The very first early years settings, Froebel's Kindergartens (Wollens, 2000), reflected the vital importance of access to nature for children. As noted in Elliot (2008), in the early 1900s Dewey suggested a school that is engaging for children depended on the garden because it is where life occurs. The last forty years saw all of this change with a focus on safety and hygiene, pre-manufactured equipment, the easy maintenance of artificial lawns; the trend appears to be that many early years settings in Australia have little or no natural outdoor spaces accessible to the children at all (Elliot, 2008). The natural elements have been mostly lost and the play spaces are adult designed, without input from children (Hart, 1979; Freeman, 1995).

Influences on early years settings in Australia

The Australian government has recognised the important role of early years settings by recently developing the National Quality Framework for Early Childhood Education and Care (Australian Children's Education and Care Quality Authority (ACECQA), 2011), and Early Years Learning Framework (EYLF) (Department of Education, Employment and Workplace Relations (DEEWR), 2009). The Guide to the National Quality Standard (ACECQA, 2011) states in Quality Area 3, Element 3.2.1 that "Outdoor and indoor spaces are designed and organized to engage every child in quality experiences in both built and natural environments" (p.83). Early years settings in Australia are now assessed and rated according to how they implement this element (among others), thus encouraging services to plan for the

design and organisation of nature in their settings. The EYLF (DEEWR, 2009) explains that "natural environments … invite open-ended interactions, spontaneity, risk-taking, exploration, discovery and a connection with nature" (p.16).

The United Nations Convention on the Rights of the Child (United Nations, 1989) (hereafter The Convention) highlights in Article 12 that children have a right to express their own views in matters that affect them, and that these views should be given equal weight to adults' views. Article 13 discusses the right to freedom of expression and details a range of media that could be used for children to share their perspectives including orally, in writing or print, through art or any other media the child chooses. The Convention, which was ratified in Australia in 1990, has strongly influenced the EYLF (DEEWR, 2009), and therefore has significant implications for Australian early years settings in regards to how they make decisions about play spaces and whether children are involved in the design of these spaces and gardens.

Significance of the Study

This study is significant for several reasons. Firstly, it will provide new information on gardens in Australian early years settings and their affordances (Gibson, 1979) or possibilities for actions for young children. This could lead to a deeper understanding of the benefits of nature for children, with more natural outdoor play spaces being developed. Secondly, the research will build on previous research by Merewether and fleet (2013) by providing further insight into young children's perspectives on natural outdoor spaces, with a focus on what is compelling to them in an outdoor space and the affordances of these compelling elements. These insights may be useful for principals, educators, owners and directors of early years settings and local councils in the planning of outdoor spaces and in seeking children's perspectives in the process. The research findings will assist governments

in making recommendations for outdoor spaces and for consulting with children in early years settings and schools. Lastly, the data generated in this study will be used to identify emerging themes, and possible theoretical propositions, that may be useful to designers and landscapers of outdoor play spaces for children.

Research Objectives

The purpose of this research is to look closely at an early years setting with gardens and gain an understanding of how children use the outdoor spaces and what elements are important to the children.

This research offers an opportunity to determine:

1. What elements and spaces children find compelling (interesting) in an outdoor learning environment

2. What affordances young children attribute to the elements of an outdoor learning environment

3. Successful strategies and approaches for seeking young children's perspectives

4. What are some implications of these findings for designers of early childhood outdoor spaces

Conclusion

This introduction has provided a brief background on myself as a researcher and why this research is significant to Early Childhood professionals and designers of children's spaces. The international movement towards more natural spaces for children, as exemplified in the Australian Government's National Quality Framework (2011), has initiated the desire for changing children's spaces and making them more natural.

The next chapter will outline the role of natural outdoor play spaces for young children in Australia, with a focus on the history of design of outdoor spaces for

children. The chapter will also outline the growing body of literature on the

importance of consulting with children when researching play spaces, including the

use of the 'Mosaic Approach' for gaining children's perspectives (Clark and Moss,

2001). Literature using the term 'affordances' will be explored and its use in

assessing outdoor spaces will be considered.

Chapter 2: Literature review

There is a great deal of established research on early childhood outdoor play spaces (Fjortoft and Sageie, 2000). Research on outdoor play spaces crosses disciplines with work being done in education, landscape architecture, behavioral psychology, and social work professions. All researchers agree that children's access to and availability of outdoor play are pivotal to the childhood experience. Fjortoft and Sageie (2000) note that within the existing literature on outdoor play spaces, there is a gap in the research on how children use these spaces and on what children think of these spaces. Through examining literature in the fields of gardens and nature, outdoor play spaces, and seeking children's perspectives, it is possible to place this thesis at the intersection of early childhood research and landscape design. This literature review will serve as a catalyst for the research project.

Gardens, Nature and Outdoor Play Spaces

Children's gardens are intended to provide plant-based nature experiences and learning opportunities for young children, who are increasingly removed from direct exposure with the natural world (Fjortoft and Sageie, 2000; Louv, 2008; Parsons, 2011; Wake, 2007). Outdoor play in gardens offers young children a diversity of natural elements that contribute to the use of the senses, increased health benefits, interactive physical activity and social situations that prepare children for future learning and life experiences. Wake (2007) adds to these benefits by describing that gardens offer "multidisciplinary learning such as science, math, horticulture, ecology, geography, art, deduction, teamwork and socialisation" (p.32).

Gardens give children opportunities to use all of their senses: flowers and shrubs, for example can be smelled, touched, looked at and some can be tasted. Young children

are sensory learners and need elements such as flowers and shrubs to be able to freely explore these senses for themselves (Elliot, 2008).

Considered one of the pioneers of early childhood education as the founder of the first "kindergarten", Frederick Froebel (1782-1852) felt it was important for children to feel spiritually connected to the natural world around them (Elliot, 2008). In fact, Froebel's term "kindergarten" translates to "children's garden", reflecting his belief in the importance of gardens for children. This idea of the connection between children and gardens was implemented in kindergartens across the world until manufactured equipment was developed in 1905 and became the key feature of outdoor play spaces with the intention of increasing children's opportunities for physical activity in urban areas (Dannenmaier, 2008). Fjortoft and Sageie's (2000) research contradicts this perceived benefit of playground equipment by indicating that it is nature that is more beneficial to children.

Despite the popularity of installing manufactured playground equipment in local parks, schools and early years settings, research by Hart (1979), Moore (1986), Freeman (1995) and Sobel (2008) clearly indicates that children prefer to play in natural outdoor spaces and gardens where they can manipulate their environment and elements including water, sand, soil, mud and grass, where they can have trees to climb, and where they have resources such as berries, stones, flowers and wildlife to explore.

Louv (2008) reports that children are now spending far less time outdoors than previous generations and that this decline in contact with nature may lead to what he terms "'Nature Deficit Disorder'". Louv believes this is causing a diminished use of the senses, attention difficulties, and higher rates of physical and emotional illnesses in children (Louv, 2008). Indeed, Louv's book has been partly

responsible for an international movement to get children back in touch with nature, including re-introducing gardens. Little (2006, 2008, 2010) has studied risk taking behaviours in early childhood settings and believes children are risk averse due to adults' perceptions of nature being unsafe. Little (2008) states that children need to take risks in early childhood outdoor play spaces in a safe environment; she suggests that this is beneficial for their wellbeing and fosters their capacity to make safe risk choices throughout life. Sobel (2008) explains that children have a natural tendency to bond with the natural world. He calls this "Ecophilia", which he broadly describes as "loving nature".

Following this current movement, there has been research into the inclusion of natural spaces in schools and early years settings, with a growing body of literature focused on the positive impact of nature, and gardens in particular, on children's health, enjoyment, and pleasure (Green, 2013). Hussein (2012) implies that gardens can positively influence children's behavior and their development in terms of mental health, social and emotional relationships and provide stimulating, sensory experiences. Natural play spaces are again emerging as one of the most compelling outdoor play spaces that can be created for and with children (Dannenmaier, 2008).

Designing outdoor spaces for children

Adults responsible for designing outdoor play spaces are in a unique position to create spaces that form lifelong memories for children and impact their development and learning. Stine (1997) describes this role as difficult in regards to children's spaces because even though children are the primary users, their needs are usually interpreted through adults. She extends on this by suggesting that the role of the designer is to facilitate a thinking process and then represent this process in a

plan. Stine (1997) believes the three players in this process are the designer, the teacher and the child.

Keeler (2008), a children's play space designer in the USA, suggests that pieces of fixed equipment with a safety fall zone are not enough in a play space but that children need a variety of rich, stimulating elements in spaces that support a wide range of play experiences. Greenman's (2005) work in early years settings has facilitated the design of spaces that encourage children's interaction with "plants and animals, water, dirt, weather and the life cycle" (p. 177).

Young children are not as involved as they should be in the design processes for children's spaces. For example, Wake (2007) recalls her experiences with designs of outdoor spaces for children and comments that there is a tendency for adult agendas to dominate the design of the space. Truscott (2014) explains that young children's understandings and perceptions of nature have been almost entirely over-looked. Merewether (2015), Green (2013) and Clark (2007) elaborate on this idea and suggest that the practice and pedagogies that promote children's participation in the design of children's spaces are under-researched.

Children's Perspectives and Participation

The inclusion of young children's 'voices' has only become visible in research in the last two decades. Prior to this, child psychologists and researchers have viewed children as "objects" to be studied and have neglected their views (Clark, 2007; Harcourt et al. 2011; Merewether and Fleet, 2013). Article 12 of The UN Convention on the Rights of the Child (1989) has been the main catalyst for seeking children's views in research. The educational project of Reggio Emilia has also made an important contribution to constructing an image of the child as a researcher (Rinaldi, 1998); educators in Reggio Emilia believe that their role is to

listen to the many ways children communicate and document and build on their ideas. Clark and Moss (2001) used this idea to develop the "Mosaic Approach" to research, which recommends the use of observations, child conferencing and children's perspectives using cameras, tours and mapping when researching with children.

Several research studies have used cameras with children to express children's ideas about indoor and outdoor environments in early childhood settings: for example Clark (2007) and Eide and Winger (2005) used photographs to elicit children's input into a play space design. Stephenson (2009) has also used photography to seek children's views on play spaces and found that the use of photographs as well as listening to the children talk about the photographs, lead to a deeper understanding of the children's views.

When researching with children, it seems a combination of strategies and methods that offer children multiple ways of expressing themselves can achieve a more meaningful and realistic picture of children's views. Merewether and Fleet (2013) advocate a 'respectful layered approach' and suggest it is the researchers' responsibility to find ways for children to articulate themselves and be involved in decisions that relate to them.

Spaces and Elements

Research on children's environments often uses the terms 'spaces' when referring to areas within the outdoor learning environment or to describe the environment as a whole (Clark, 2007; Stephenson, 2009; Wake, 2008). The term 'elements' is used to describe single items or objects in the environment; for example, Keeler (2008) suggests that children need a variety of rich, stimulating 'elements' in spaces that support a wide range of play experiences. The term

'elements' is used when relating to nature as there are many natural elements

available; in fact the Australian National Quality Standards (ACECQA, 2011)

recommend that early childhood services provide for children " plants, trees, edible

gardens, rocks, mud, water and other *elements* from nature" [my emphasis] (p.84).

Affordances

The theory of affordances was developed by Gibson (1979) to assist

researchers to understand the possibility for actions of elements and spaces, which

one perceives while in a specific setting (Heft 1988). Different people will perceive

different affordances for certain elements; for example, a small baby might perceive

the affordance of a chair for crawling or hiding under, while an adult will perceive

the affordance of a chair as being for sitting on. The theory of affordances has been

used previously by Loebach (2004) to assess perceived opportunities for action by

children in early years settings. Loebach (2004) explains that when the theory of

affordances in used with young children in early years settings, it highlights the

difference in perspectives of the adults and the young children, allowing adults new

insights into how children use their environment. In this present study, the concept of

affordances is useful in describing: the engagement between the children and the

elements of the outdoor space; their responses to the space; and the possibilities the

space can offer children from their perspective, whether or not these possibilities

were originally intended by the educators and designers.

Summary

Nature, in outdoor play spaces, can make a difference in improving children's

wellbeing and offering opportunities for learning and development. With regard to

designing these spaces there has been some research conducted about what to include

from an adult's perspective (Berry, 2001; Elliot, 2008; Keeler, 2008; Stine, 1997),

but little research on outdoor play space design from a young child's perspective

(Merewether, 2015; Truscott, 2014; Dannenmaier, 2008). Clark (2010) has described

ways of including children in research and gaining children's perspectives about play

spaces. Research studies on the seeking of children's perspectives has placed the

responsibility on the researcher to involve children and find ways for those children

to clearly express and articulate themselves so their voices are heard (Clark, 2010;

Einarsdittir, 2006; Stephenson, 2009; Merewether and Fleet 2013). Gibson's theory

of affordances has been used successfully to assess early years settings in regards to

the affordances young children perceive in their environment (Loebach, 2004). This

literature provides a stepping-stone for researching young children's views on the

affordances of gardens in an Australian early years setting, using a multimodal

method such as the Mosaic Approach.

Chapter 3: Conceptual Framework

"We walk around believing that what we see with our eyes is real, when,

in truth, each of us constructs our own understandings of what we are seeing"

(Hoffman, as cited in Curtis & Carter, 2000, p. 5).

This chapter will establish a theoretical foundation for seeking children's

perspectives on the affordances of outdoor spaces. When researching with children, it

is essential to have an understanding of the discipline of Childhood Studies (Mayall,

2003; Quennerstedt and Quennerstedt, 2013), which views children as capable and

active participants in the world, and it is important to have an understanding of the

relationship between children and their environment (Loebach, 2004). This chapter

will also situate the research in relation to environmental psychology; I will look at

the discipline and the knowledge contributed in exploring the relationship between

young children and their environments. Furthermore, this chapter will explore the

theory of affordances in relation to children's environments and how this theory

offers a conceptual tool for identifying the functional properties of the outdoor

learning environment. This chapter will relate the conceptual frameworks to each

other in order to provide a clear conceptual framework for the study. Additionally,

the chapter will provide an evaluation of how these conceptual frameworks have

been employed in prior research and how I will employ them in this research.

Childhood Studies

Childhood Studies (also known as Sociology of Childhood) (Mayall, 2003;

Quennerstedt and Quennerstedt, 2013), emerged in the 1980s and 1990s in the same

public movement, which supported children's human rights and resulted in the

development and implementation of the United Nations Convention on the Rights of the Child (UNICEF, 1989). This social theorising about children reconsiders children's status as human beings and their place in society (Mayall, 2013). Childhood Studies recognises children as capable beings who do not lack anything that is required to uphold rights; furthermore children have social, moral and political competence and are to be regarded as participants and contributors to society (Lowe, 2012; Mayall, 2013; Quennerstedt and Quennerstedt, 2013; Smith, 2007). Children have knowledge and unique insight to contribute about their lives that are derived from experiences in their social worlds (Lowe 2002; Smith, 2007).

These ideas are clear in contemporary early childhood education, which has been largely influenced by the work of Malaguzzi in the schools of Reggio Emilia (Edwards, Gandini, & Forman, 1993). Malaguzzi's idea of the competent child co-constructing learning with the educator has encouraged educators and researchers to facilitate children's involvement, value and support their ideas and encourage their sense of agency. (Bae, 2010; Fenech, Sumsion, & Shepherd, 2010; Waller & Bitou, 2011).

This research, which is premised on an image of children as active participants and contributors to society and adopts a research methodology focused on seeking children's perspectives, is grounded in Childhood Studies.

Environmental Psychology

Environmental psychology emphasizes the importance of considering the environment from the perspective of its users (Loebach, 2004). This discipline claims that the study of an environment and the behaviours observed in that environment have no meaning unless you consider the perspective and significance for the people using that environment. This research aligns itself with an environmental

psychology perspective by studying outdoor environments and the significance of the elements and spaces in the environment from young children's point of view. Moore (1986) elaborates on this idea by explaining that the environment itself develops and can be modified and changed by the individual, and the environment affects the individual. This leads us to the Theory of Affordances, which attempts a new approach at studying children's environments and determining how children use their environment.

Gibson's Theory of Affordances

The theory of affordances was developed by Gibson (1979) to assist researchers to understand the possibilities for action in an environment, which users (people and animals) perceive while in a specific setting (Heft 1988). KyttA (2004) researched affordances with children and suggested affordances in children's spaces can be potential, perceived, actualized and shaped affordances. Potential affordances are the affordance the designer of the item or space had in mind for that item or space. For example, in a traditional playground, the slide has the potential affordance of a child sliding down it.

Perceived affordances are associated with an individual's ability to recognize them. A child's perception is oriented towards finding the affordance that best suits their size, mobility and needs at the time. In the example of the slide mentioned above, a perceived affordance for a one-year-old child, not big enough to climb and slide might be to hide under it, or to bang on it and make a loud sound. KyttA (2004) also noted that perception is an active experience, in which a child can find information through moving. Affordances of an item can change for a child based on this idea. For example, for a crawling baby, a coffee table could be useful for crawling under and hiding, when the baby starts walking, the coffee table might

afford stability for learning to walk, when the child is older the table could afford a hard surface for drawing.

Actualized affordances are the affordances that actually happen. In the case of the slide, you might observe the slide is actually used for sliding down and for climbing up for a group of children on a particular day.

Users can shape the environment to create new potential affordances for others. This is known as 'shaped affordance' (Heft, 1988). Educators, teachers, adults other children can change and add things to an item or space to shape the affordance for individuals. With the slide, this could look like a neat line of toy cars at the top of the slide and a basket at the bottom of the slide. This would give a cue to the children to push the cars down the slide into the basket. Potential, perceived, actualized, and shaped affordances can therefore develop a cycle (KyttA, 2004).

As noted previously, the theory of affordances has been used in research with young children by Loebach (2004) to assess perceived affordances in early years settings. Loebach (2004) explained it was appropriate because of the difference of perspective between adults and children and an understanding that each child may see different possibilities for action in the spaces based on their ideas, experiences, abilities and interests (Loebach, 2004). Furthermore, Fjortoft and Sageie (2000) studied a forest outdoor learning environment that was part of an early years setting and they suggested that natural features afford various play types in accordance with Gibson's theory. Fjortoft and Sageie (2000) suggest that children are aware of the functions the natural environments offer; for instance, spaces with trees and plants afford imaginative play and construction play. The study recognizes a positive relationship between children's play and the characteristics of trees and plants.

In this present study, the concept of affordances is useful in describing the engagement between the children and the elements and spaces of the outdoor play space, their responses to the space, as well as the possibilities the space can offer children from their perspective, whether or not they were intended when the space was designed.

My own position

Before beginning this research, it was very important to me that the child's voice be authentic, be powerful and be the main focus of the research. The discipline of Childhood Studies advocates this by encouraging researchers to go beyond consultation with children in research and to get inside children's social world's, bringing to life their unique perspectives which have been so long ignored (Smith, 2013). Childhood Studies is a powerful research lens through which I have considered the perspectives of children and been open minded with the possibilities of these perspectives. Applying Environmental Psychology has allowed me to focus the children's perspectives on a specific outdoor environment and study the perspectives of the users of this environment. As mentioned by Moore (1986) an environment only has meaning and context when you consider its significance to its users. The Theory of Affordances refined my focus of this research even further by enabling me to study the affordances for the children of the elements and spaces within a specific environment.

Combining the three theories of Childhood Studies, Environmental Psychology and the Theory of Affordances, has created an approach that allowed me to get inside the children's social world and document and interpret their perspectives on not just their environment, but the affordances they perceive in that environment.

Summary

This chapter has looked at the theoretical foundations for seeking children's perspectives, children's role and place in their environments, and the theory of affordances. When researching with children, Childhood Studies engages children as active participants with rights, perspectives and voices worthy of being heard. The theory of affordances (Gibson 1979) offers a methodological tool for identifying the functional properties of the outdoor learning environment and Environmental Psychology acknowledges and studies the significance of a space for its users. The next chapter will describe the research methodology I have employed in this study based on this theoretical perspective.

Chapter 4 Research Methodology

By acknowledging children as capable and competent beings, I have focused on young children as collaborators in this research rather than as subjects of the research. Research that investigates children's perspectives is emerging as an effective methodology, giving the world a new insight into children's views, abilities and lives (Millikan, 2003).

This research embraced what Merriam (1998) defines as an ''interpretive qualitative'' approach, whereby the ''researcher is interested in understanding how participants make meaning of a situation or phenomenon, the meaning is mediated through the researcher as an instrument, the strategy is inductive, and the outcome is descriptive'' (p. 6). During this research, centre visits were conducted over six half day visits that included child-led tours of the outdoor space coupled with informal child interviews and photographs taken by the children, book making sessions and map making by the children, as well as informal parent and educator interviews sparingly used to supplement the data collected from the children.

These strategies were chosen because of their interpersonal nature and their appropriateness for research with young children as outlined in the Mosaic Approach (Clark, 2010). Each source of data, like a piece of the *mosaic*, added more depth to answering the research questions. This approach provided a sound foundation from which to develop the research tools for this study, acknowledging that children use different 'languages' (Edwards, Gandini, & Forman, 2012) to express their opinions, ideas and perspectives. In the following sections, the qualitative study is further described and related to childhood research literature.

Qualitative Research: Making Meaning

Qualitative research is a form of social inquiry which looks at the way people make sense of the world they live in (Holloway, 1997). Using an interpretive qualitative approach to this case study allowed me to explore the perspectives of the children in the social reality of their natural outdoor play space. I was able to make meaning of the children's realities through analysing their words, photographs and drawings. Prasad (2005) explains the interpretive qualitative approach to research often uses word-based data for analysis. Having open-ended research questions (introduced below) allowed me to enter the case study with endless possibilities and an open mind as to what the children found compelling in their space and the affordances they found in the space. I was curious about the children's ideas and thoughts and the interpretive method used allowed me to explore the questions through inquiry, which was flexible and carefully adapted to the questions and the participants.

In regard to data collection, Elliott and Timulak (2005) explain there are 3 aspects to data collection in an interpretive qualitative model and these were all evident in this research: I have not used preconceived themes for sorting the data; the participants have been given power through the research and become co-collaborators; and multiple methods - child-led tours, photography, book making, map making and adult interviews - were used for collection of data and triangulation (Elliott and Timulak, 2005).

Research Questions

　　　　The purpose of this research was to look closely at an early years setting with a natural outdoor space and gain an understanding of the affordances of the space and which elements of the space are compelling to the children. The following research questions guided the study:

1. What elements and spaces do young children find compelling (interesting) in an outdoor space?

2. What affordances do young children attribute to the elements of an outdoor learning environment?

3. What are the design implications of these findings for designers of early childhood outdoor spaces?

Site Selection

The criterion for the site selection was to find an early learning service that:

- Had a well established garden as part of their outdoor play space

- Had a philosophy that values interactions with nature

- Had educators who are supportive of the collaborative research project

The early years service chosen is a large centre, based on a university campus in Perth, Western Australia. The centre welcomes 135 children a day ranging in age from six weeks to five years old. The have a well-established nature- based outdoor area that has been developed over time by the educators, families, children, and the community.

Selection of participants

Six three and four-year-old children were chosen as the sample: three girls and three boys. I aimed for diversity in terms of gender, perceived abilities, interests and ethnicities to maximize the likelihood of a variation of results and highlight any common core emerging themes. Purposive sampling (Bryman 2012) was used to sample from those children in the setting whom the educators advise regularly spend time in the outdoor spaces and would manage the collaborative process with an unknown adult (Merewether and Fleet, 2013). However, one of the children chosen by the educators communicated his dissent very clearly during the second visit by

telling me "No" several times through the morning, so an alternative child was

chosen. This particular child had previously followed other children's tours,

constantly asking questions of me and wanting to be involved so he was a natural

choice as he evidently wished for his voice to be heard. Consent was sought from all

children and families in the class group to allow data to be included from situations

where children outside of the subset group become involved. Not all parents in the

group completed a permission form, so care was taken to respectfully not involve

those children whose parents had not completed the form.

Pseudonyms have been used for the children in the study for ethical reasons.

The three boys in the study are Oscar and Henry, who are three years of age and

Cameron, who is four years of age. The girls in the study are all four years old and

are referred to as Sienna, Isla and Lily.

Following Merewether and Fleet (2013), data generation took six half-day

visits to the service. The first two visits were for establishing relationships of trust

with the children to ensure the process was as collaborative as possible. The

children's perspective was central to the research so the children needed to feel

comfortable to have open conversations with me as a researcher.

Ethical Issues

This research has been approved by the Curtin University Human Research

Ethics Committee (approval number HR172/2014). Ethical issues applying to this

research project involved concerns with researching with young children. NHMRC

(2007) explains there are ethical concerns around: children's capacity to understand

what the research entails; whether their consent is sufficient for their participation;

possible coercion by parents, peers and the researcher, or others involved; conflicting

values between the interests of the child and the parent. To respond to these

concerns, the researcher gained informed, signed consent from the service provider and parent/ guardian, and sought ongoing assent from each child. Following recommendations by Harcourt and Conroy (2011), during each visit I gained each child's assent through a simple question 'Are you happy to talk with me today?' I recognised children's cues for disinterest or discomfort and respected their right to withdraw without prejudice by allowing them to move away and not be involved in the day's research experiences (as evidenced by the experience noted above by the child who freely expressed his dissent).

I allowed two half-day visits with the children prior to starting the research to facilitate respectful and trusting relationships with them (Atkins and Wallace, 2012). The research was premised on a view of children as competent 'experts' in their outdoor spaces; questions posed to the children were designed with this reciprocal exchange in mind, in respect of their abilities and interests.

Educators from the early years setting were always present when I was with the children. I communicated with the service to organise times for the visits that had minimum impact on the daily routines and learning of the children. The research-related experiences the children were invited to participate in were aligned with the pedagogical values and practices of the setting.

The Mosaic Approach

This research was undertaken using tools from the Mosaic Approach, first described by Clarke (2001). The children were given various avenues to express their ideas and voices through leading tours, speaking, showing, taking photographs, drawing, writing and long conversations with the researcher. Malaguzzi (1998) explains that as children move an idea from spoken to symbolic language such as drawing, the children find that each transformation generates something new for

them. During this study, it was found that the children had more to add about the play spaces and the affordances through each of the visits as they built on what took place during the previous visit, and were invited to express their views through different symbolic languages. This provided a deeper understanding of the children's views.

Clark and Moss (2001), who developed the Mosaic Approach, describe it as a framework for listening to children which is:

"   - *Multi-method*: recognizes the different 'voices' or languages of children

    - *Participatory:* treats children as experts and agents in their own lives

    - *Reflexive*: includes children, practitioners and parents in reflecting on meanings; addresses the question of interpretation

    - *Adaptable*: can be applied in a variety of early childhood institutions

    - *Focused on children's lived experiences*: can be used for a variety of purposes including looking at lives lived rather than only a knowledge gained or care received

    - *Embedded into practice*: a framework for listening which has the potential to be both used as an evaluative tool and to become embedded into early years practice."

(Clark and Moss 2001, p. 7)

This approach recommends the use of observations, child conferencing and children's perspectives using cameras, tours, mapping and adult interviews when researching with children (Clark and Moss 2001, p. 15).

It is essential for research on children's place experience to regard children as the experts within that space with a right to self-expression (Cele, 2006). Rather than making inferences based on observations or parental report, researchers suggest

collecting children's accounts of their experiences to understand their views and ideas (Clark, 2007; Wesson & Salmon, 2001).

Combining visual and verbal languages improves communication with children, especially when seeking information about their daily experiences in the outdoor early years setting. In addition, scientists consider interviews and drawings as traditional methods for involving children in research (Cele, 2006). Drawings are effective in promoting the children's verbal report because the drawings aid in their retrieval of information (Wesson & Salmon, 2001). Drawings can also provide means by which to communicate information with children (Butler, Gross, & Hayne, 1995).

When researching with children, it seems a combination of strategies and methods that offer children multiple ways of expressing themselves can achieve a more meaningful and realistic picture of children's views. Merewether and Fleet (2013) advocate a 'respectful layered approach' and suggest it is the researchers' responsibility to find ways for children to articulate themselves and be involved in decisions that relate to them.

A respectful layered approach

This study will take inspiration from Merewether and Fleet's (2013) 'respectful layered approach' to researching children's perspectives on outdoor play environments in an early years setting. Merewether and Fleet studied an early years setting that included both purpose built playground equipment and natural elements, but interestingly the children mentioned swings, umbrella, hut, lighthouse, tunnel, platform and slide among their favourite spaces and there was little mention of the natural elements (Merewether and Fleet, 2013). Merewether and Fleet (2013) did not directly discuss the affordances of these spaces or elements, which is how this

current study will expand on this earlier work. Furthermore, Merewether and Fleet (2013) suggest that it is important to evaluate the results of the children's perspectives to avoid a tokenistic approach when researching with children. This present study will evaluate the results of the information gathered from the children by searching for recurring themes in the data, which are relevant to the research questions. Bryman (2012) explains this is one of the most common approaches to qualitative data analysis and in this study, it will involve recognising and recording recurring topics and categories in the children's experiences and perspectives and developing themes that emerge from the data analysis.

The visits

Below is a brief flow of the visits and what each visit focused on.

1. Relationship building

Introduction to the research for the children and discussion about the intent of the project, the voluntary nature of participation, intended audience, etc

2. Photography familiarisation

Children will be given the opportunity to conduct a tour of the inside environment to familiarise the children to the process of a tour and the use of a camera and audio recorder.

3. Child-led tours

Children will take me on tours of the outdoor areas. They will photograph the garden and the tour will be audio recorded to capture their explainations of the areas.

4. Children's feedback

Book making with children's photos

5. Slide show

Photo-elicitation focus group with all 6 children involved.

6. map making and adult interviews

| Children are invited to create a map of their garden. | Educators and Parent interviews are undertaken. |

Adapted from Merewether and Fleet (2013, p.6)

Visit One- Relationship building

The first visit began with being introduced to the children by their educators and spending time with each of the focus children. The children were curious about my role, asking if I was a teacher or a child's mother. This provided an opportunity to explain the research and my role during the visit. Greenfield (2011) explains "children's perspectives are much better understood if the researcher spends time in the setting with the participant children" (p.109). This visit was the first opportunity to ask the children's assent to participate.

Time was spent with each of the children during the first visit and I introduced the children to the digital cameras and audio recorders. There were discussions about the cameras and how they worked and the children explained that they had all used digital cameras before. In previous studies involving photography by children, disposable cameras have been used. In preparation for this study, I had chosen to use digital cameras because disposable cameras were hard to find in the local area and the time to process film takes longer than digital prints. From previous experience in early years settings, I knew digital cameras would be familiar to the children so I purchased six digital cameras online for the research. The cameras were chosen for their simplicity, sturdiness and price. During this first visit it became apparent, however, that these cameras would not be suitable for the research. The problem was the "shutter-lag"- the cameras needed to be held still during and after taking the photo and required a period of time between photographs. The children were also moving when they tested the cameras and on viewing the photographs after the visit, they were all too blurry to make any sense of the photograph. I decided to use two of my own good quality, high-speed digital cameras for the next visits. This highlighted the importance of high quality research equipment for the children's use

not just for adults' purposes. As adults, we desire and assume we need the best

camera and equipment to conduct research, and often, without thinking, we give the

children the cheaper alternative… but it doesn't work out and as in this case, we need

something more adequate to honour the quality of the children's contribution.

Six audio recorders were purchased, which came with a little microphone to

be clipped to clothing. The children were given a bag to carry over their shoulder and

across their chest to hold the audio recorder while they walked, to free their hands for

the cameras. The audio recorders worked well with the microphone and I also carried

one at all times recording the conversations as a second recording. This proved

useful when the child was at distance from me, the child's recorder still recorded

their voice and my recorder caught my voice. There was also static and background

noise, which made having a second recording useful to confirm some of the

conversations.

As the study began and I became familiar with the space and the children, I

wondered if the children would choose to photograph one space more than the other;

I looked forward to touring the spaces and discussing their photographs with them in

future visits. I approached the research with a genuine curiosity regarding what the

children's thoughts would be about their spaces.

Visit Two- Photography familiarisation

Based on previous research using the Mosaic Approach, I had decided to

have the children undertake the photo tours in pairs. I started with Sienna and Lily.

Both girls were very eager to show their indoor play spaces and wanted my full

attention while explaining the areas and what they do there. I realized at this point

that individual tours might be better as each child would have my full attention and

the children would not need to compromise on what they wanted to explain and

show. The children could also freely express their ideas on the spaces and elements

they were showing. The individual tours worked well. At the start of each tour, the

children were fitted with their bag, recorder and microphone. It was explained the

audio recorder would record their voice and the children were asked if that was

acceptable. I also asked each child if they were happy to talk with me today and

show me around the inside of the centre. The children were able to use the cameras

with ease and without blur. It was explained to the children that anytime they wanted

to finish the tour and move to another activity, they could do so. With all of the

children, this was communicated by the child taking off the bag with audio recorder

and handing back the camera.

Visit 3- Child-led tours

The tours were designed with the understanding that children are experts in

their spaces. The children individually took me on a tour of their outdoor play space,

indicating what was important to them and how they use the spaces. Adults and

researchers can never know the world in exactly the same way as children, but this

method provided an opportunity to get closer to children's perspectives (Clark and

Moss, 2001).

Visit three was the beginning of the data collection on the outdoor play

environment (Appendices B, C and D). The children led the tours with the researcher

one at a time. The children were given a digital camera of high quality and an audio

recorder which they carried in an over the shoulder bag and a microphone was

attached to their shirt for higher quality audio recording. The audio was also recorded

on a second audio recorder and an iPad, which the researcher carried.

Each child took approximately 20 minutes with the tour. They were asked if they were happy to conduct a tour of their outdoor spaces today and all agreed to take part.

As the children led the tours, I asked them questions such as "What do you do when you are in the garden?", "Can you tell me about this." and "What else would you like to show me that you find interesting outside?" (Appendix A). Some of the children were more verbal than others and some took more photographs than others. They seemed to settle in to their own style of photography and conversations about the elements and spaces.

The children were asked to choose where they would like to start the tour and they all chose to start in different parts, some just starting where they were, others starting at a chosen place. The timing of the tours with the individual children worked around when they arrived and what the children were doing.

Each of the children had a slightly different way of conducting the tour. Henry, Cameron and Isla were very vocal and Oscar, Sienna and Lily were quieter and preferred to walk and take photographs without much speech. Listening to the audio recordings after the visit, I intervened with the quieter children, asking them more questions such as "Tell me about this space" or "What do you do here?". The length of time spent on the tours varied depending on the focus of each child and the distraction and invitations to play by other children. For example, Lily's tour was less then 10 minutes before she decided to end the tour to play with her friends who were following her during the tour.

The children also had different photographic styles. Isla took close up photographs and took a photo of the ground with almost every step when on a textural surface such as the log steppers of the bridge. Cameron took time to stand

back, fit everything in the shot and then would take just one shot of each space. They treated the camera carefully, and the children quickly learned how to operate it on their own. This mirrored the experience of other researchers who have worked with young children and cameras: "The comfort level with the camera was surprising, as was the level of competence the children had gained in a short time span" (Blagojevic & Thomes, 2008, p. 70).

Visit 4- Children's feedback

"Book making as adopted in the Mosaic Approach is a form of children's authored books based on children's own photographic narratives" (Clark and Moss 2001 p. 35). Photographs have been extensively used when researching children's environment preferences as it helps overcome language and communication barriers and combines verbal with visual language. (Clark, 2007; Cook and Hess, 2007). The book making provided an opportunity for discussion and reflection on the previous week's data collection and the children's view of the outdoor play space (Appendix E).

In preparation of this visit I printed all of the photographs the children had taken the previous week; there were 250 in total. The photographs were grouped into the photographs taken by each child. An A3 size visual arts book was brought along, as well as glue and black pens.

A spare room in the centre that had windows visible from two rooms and the outdoors and an open door to two rooms with teachers close by was used for this session. Each child was introduced to the book and I explained that it was for the children to glue their photographs in. I would write their words about the photographs as they described the photographs to me. I also asked them to tell me

why they had chosen that photo. I explained that the book would be used to show other people what they like to do in the centre and what they find interesting.

As with the tours, each of the children had a slightly different way of putting the photographs in the book.

Visit 5- Slide show

The slide show was added as a research tool to the Mosaic Approach (Clark and Moss 2001) to allow children to view their own photographs and alternative outdoor spaces. In this study the children were able to view their own photographs as well as each other's, and discuss similarities and differences between the spaces. They could discuss with their peers what is important to them in the spaces and why they took the photographs. It was ideally an opportunity for peer discussions and new perspectives around the outdoor space, where previously I had been the main communicator about the spaces with individual children.

There was a projector in one of the classrooms that was used daily to show photographs of each day to the children and families. I used this projector to show the photographs to the children as it was familiar and already set up. I sat with 3 of the focus children in front of the slide show, which was projected onto a blind, and I started discussions about the photographs. Isla recognized her own photographs as her shoes appeared in many of the images of the ground textures. Oscar was excited to recognize his photographs too. It was difficult to start conversations about the slide show as the classroom was full of children and the focus children were getting easily distracted. There were blocks on the shelf next to the projector and the children started building with the blocks. Oscar brought me a book and asked to be read to. I asked Oscar if he had finished watching the photographs on the slide show and Oscar replied that it was boring. The slide show was left to continue in the

background during the visit with the hope of providing the provocation for further conversations. During the previous three visits, slide shows of centre photographs had been running in the background through this projector. It was possible that because the children were accustomed to having it showing every day, it was not a novelty to them and they were not interested. The location of the slide show in the main classroom could also have been distracting.

I decided to start on the map-making activity instead of continuing with the slide show activity for the research.

Visit 6- Map making

Clark and Moss (2001) describe map-making as one of the most important parts of the Mosaic Approach. They explain that maps can hold information about the present and the past and involve understandings and memories. Wright (2007) explains that children communicate meaning in art through the use of signs that 'stand for' things, which become 'text' that can be 'read'. The children created the maps themselves using their memories of the outdoor play spaces as a guide this was undertaken individually, but in the same room so the children could collaborate verbally and discuss their understanding of the elements and spaces (Appendix F).

The children were given individual A3 pieces of paper in the quiet multipurpose room and the researcher about maps started conversations. The children were asked to draw a map of their outdoor play space. Children had a different style of drawing their map. The children generally preferred to draw quietly and then describe their maps once they were completed, even though they were all in the same room at the same time.

Visit Six- Interviews with educators and the Director

  The educators who worked directly with the focus children were interviewed for their perspective on what the children find compelling in the outdoor space and how the children use the space. The educators were taken aside from the children and asked questions about their views on what the children find compelling in the outdoor spaces in a one on one interview.

  During this visit, three educators were allocated time to come out of the rooms and sit with me to discuss the outdoor spaces, with the aim of understanding their philosophy for play and their perceptions of what the children find compelling outdoors. The interviews were "not intended to replace or undervalue the children's own responses but to become part of the dialogue about children's lives" (Clark & Moss, 2001, p. 34).

  Validity

  Graue and Walsh (1998) discuss the difficulties in applying the construct of validity to research that is based on narrative rather than measurement tools; they recommend "four interrelated dimensions" when discussing validity (p. 246). Using these dimensions (Graue & Walsh, 1998, p. 248) as a guide, and The Mosaic Approach (Clark and Moss, 2001) as a framework for listening (as described on page 24 of this paper), this study demonstrated validity in the following ways:

1. Technical and Methodological – Through the use of participatory research methods, the study engaged a methodology that enabled children to contribute their own data and share their own perspectives.

2. Interpretive – The study encouraged multiple perspectives to support an interpretation that acknowledged children's voices and ideas.

3. Narrative – Using a rights-based approach, a narrative format was adopted in order to acknowledge the voices and stories of the children.

4. Praxis-Oriented – This study creates possibilities for new understandings of children's lives and promotes further action by suggesting ways in which listening to children can be incorporated into the design of early childhood outdoor play spaces.

Interpretation

Clark and Moss (2001) remind us that research with young children takes a "surprising amount of time to carry out" (p. 99) and that "one of the advantages and disadvantages of a multi-method approach is the mass of research material that is generated" (p. 100). They also admit that the process of analysis "can feel like sifting sand" (Clark & Moss, 2001, p. 100). This sifting process involved many hours of sorting through the 250 photographs and transcribing the 12 hours of audio recordings. I used spreadsheets to organise the data collected from the tours, grouping the photographs and tracking the number of images taken of each of the elements and spaces. I also created tables detailing the photographs chosen by the children for their books.

To collect and categorise the information contained in the audio transcripts, I coded the transcripts by highlighting excerpts and sorting them into groups with simular themes. The themes were not predetermined, but were based on the children's conversations; Eisner (1998) describes themes as 'distillations of what has been encountered'. I thus created the groups of themes as I read through the transcripts and distilled my encounters with the children; I then generated tables showing the most frequently used words and categories. This allowed me to consider

the participants' input from many angles. I spent many hours looking at and reflecting on the children's photographs and listening to or reading the interviews. I returned to the data many times, searching for common threads in an effort to make the children's voices heard authentically through the research.

Chapter Summary

Waller and Bitou (2011) contend that participatory research can be burdened by ethical and power-based issues, "especially as the interpretation of children's perspectives is usually made from an adult point of view" (p. 5). This chapter has illustrated the qualitative research framework used during this study to make visible the children's perspectives and voices. Through conversations, photography, book making, writing, drawing maps and photo elicitation, the children expressed their thoughts and ideas. The following chapter will look more closely at the data generated by the study in hope of providing an ethical analysis of the themes discovered through development of the *mosaic* and the accompanying reflective process (Greenfield, 2011, p. 115).

Chapter 5- Results

Introduction

> *Henry: This is the car*
> *Second child: No, it's a space ship*
> *Henry: Brum brum*
> *Third child: This is a rocket ship*
> *Henry: (loudly) No, it's not! It's not not not not!*
> *Researcher: You know, I think it can be something different to everyone, what*
> *ever you want it to be.*
> *Third child: Yeah, it's a rocket.*
> *Henry: Its fine to be a car or a rocket ship or a caravan. We are at South*
> *Africa now, it is really cold.*

This conversation between Henry and two other children demonstrates that young children have individual and negotiated views about the affordances of the elements and spaces in their outdoor playspace. This chapter focuses on selected data, drawn from the large amount of data gathered during the six visits, to demonstrate from the children's perspectives what they find compelling in outdoor play spaces and what affordances they give to these compelling elements and spaces. The research approach adopted in this study offered children the opportunity to use a variety of media, which was used to create a larger *mosaic* that made the children's voices visible.

The six children involved in this study were key participants in the early learning setting and expert informants on their outdoor space. From the data collected during the six visits, five major themes around the children's perceived affordances emerged. These were generated through the process of coding (Ryan and Bernard, 2003) the affordances mentioned during all of the visits (Appendix B). and looking for similarities in the affordances the children mentioned. The themes are: (i)

creative affordances; (ii) active affordances; (iii) multisensory affordances; (iv) affordances for connoisseurship; and (v) affordances for connections. These themes will be explored in turn.

Creative affordances

> *"This is the mud pit… We do cooking mud pies, mud cake, mud shakes, mud pepper, mud sauce".* Sienna

Through all of the six visits, the children mentioned affordances that involved creativity. The creative affordances mentioned by the children relate to physically creating and making items and also creative, imaginary play. These types of creative affordances will be elaborated in this section.

During the book making session, Sienna explained she likes to make mud pies, mud cakes, mud shakes, mud pepper and mud sauce. She also took photographs of the cardboard rocket the children had previously made in their classroom and the igloo the children were currently making outside with the educators. These were also chosen for her book. Cameron informed me he 'makes chocolate' in the cubby house and played 'hiding from monsters' in the cubby house too.

During the tours, Isla took a photo of the tiles on the table and explained she used them for 'making something', She repeated this explanation in her book making session when she chose this same photo of the tiles for her book.

Figure 1. *"This is for making something."* (Isla, aged four)

The teachers who were interviewed explained that the children's favourite place to be was the mud pit. They concluded this based on their observations that this is where the children spend most of their time. They explained the children love to make mud pies and sculptures that they leave to harden during the day.

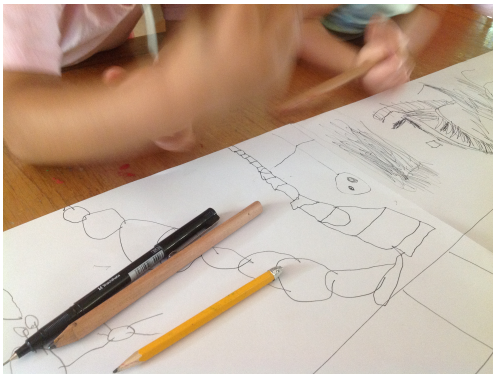**Children's photographs of elements involving creativity**

Figure 2. Lily's drawing of herself near the mud pit where she 'makes things'.

Figure 3. The tee-pee with Henry's handprint.

Figure 4. The Rocket ship made by the children.

Figure 5. The igloo being made by the educators and children.

Another aspect of creativity mentioned by the children was creative play. Throughout the tours with the children I noticed the tours wove in and out of reality and fantasy. During the tour with Isla as she crossed the bridge and I stepped into the sand next to the bridge, Isla informed me "*This is the crocodile river. You are in the river where the crocodiles are!*" Other children in the vicinity screamed "*Crocodiles!*" and ran away.

All of the six children were involved in conversations around the creative uses of the car structure. For some children it was a car, for many it was a plane, rocket or space ship. Lily explained "*You can drive to the zoo, or anywhere*", Cameron said "*It's a space ship*", Each time I was invited into the structure by one of the children, it was something different and heading somewhere different, for example to the shops, to South Africa or to the moon. Oscar took a photo of the car structure and choose to add it to his book with the below comment:

Figure 6. *"This is the car. We drive it like an airplane to the moon."* (Oscar, aged three)

The children and teachers' perspectives suggest that having elements that the children have physically created and providing affordances for physically creating are compelling to the children. The children also use creative/ imaginary play as they move through the spaces on their own and with others. Creative play appeared to be a way for the children to connect with each other and invite each other into their play. By Isla telling me I was in the crocodile river, this was an invitation for me to play, which I agreed to by quickly stepping out of the sand and onto the bridge.

Active affordances

"I like that, you run up there, jump there and slide down like a water slide".

*(*Cameron, aged four)

It was indicated by the children though the tours, photographs and conversations that they find it important to be able to move. The children were quite descriptive when explaining to me the actions the elements afforded. For example, when talking about the log stumps, Oscar explained, *"I sit and I can climb up on that one and jump and be taller than you, and I can jump off".* Isla told me she likes

stepping on the stepping-stones. Cameron explained the cubby house provided

opportunities for going in and out and hiding behind the furniture and the bridge

afforded going over, while the bean tee pee afforded going under.

Figure 7. *"Bridge- You go over it. Someone steps on it"* (Isla, aged 4). Isla's
description of the bridge in her book with the 11 photographs of the bridge she
photographed and chose for her book.

The children were able to be active with the elements through a wide range of

opportunities. During the tours, Sienna and Cameron explained they like riding the

bikes, Isla explained during the tours, while on the balance beams she does *"jump,*

climb and then jump" and that she *"likes to come here [the swing] for a turn*

around". Lily said she also liked the swing, especially the spinning movement, and

most of the children explained they like jumping off the beam onto the mats, with

Cameron adding *"I like that, you run up there, jump there and slide down like a*

water slide".

The descriptions of these actions were elaborated in the book making session.

In regards to the bridge over the sandpit, Isla explained she uses it for skipping on

and stepping on, Oscar walks over it and Cameron used it for 'going over'. Cameron

added during the book making session, that a teacher once took them for a walk to the mulch pile outside the fence and he loved running to the top and rolling down. During the tour he explained, "*Out there, we went for a walk and we got to climb on the mulch*". He also added a drawing in his book of himself with the mulch under his photo and description. The vehicle in his drawing is a tractor in the same space through the fence that he told me he would like to drive.

Figure 8. "*I like to run up the hill mulch*". (Cameron, aged 4)

Each child offered examples of active affordances in their conversations about the outdoor elements and spaces. All of the active affordances mentioned offered insights into their everyday use of the elements and spaces. From the child's perspective, it is compelling to have opportunities for active movement such as kicking, riding, climbing, jumping, balancing, walking, skipping, spinning and going over and under.

During the educator interviews, one of the educators mentioned that the children like to dig in the mud with shovels and ride the bikes. She explained they also like to run, but there is not a lot of room to run in the centre with all the smaller spaces, so sometimes the educators will take the children to the nearby oval for a run.

The repetition of the mentioning of active affordances through the different sessions allowed me to see evidence that active affordances are compelling and potentially fundamental for consideration in design of children's spaces.

Multisensory Affordances

Figure 9. "This is the Hay Chair. It is really spiky. When it is wet, it is not spiky." (Sienna, aged 4).

The third of the five themes to be examined was initially identified through the Sienna's description of the hessian 'hay chair'. During the book making session she further explained that the chair is spiky, but when it is wet, in is not. In this case for Sienna, it was very important for her to tell me how the chair felt when she sat on it. Sienna also talked about the flowers during her tour and told me she enjoys smelling the perfume of the flowers. She also mentioned she enjoyed feeling the cool water on

a hot day. Sienna described rich multisensory experiences in her outdoor space. As the children were taking me on the tours, they often would elaborate and explain to me their sensory experiences as the affordance of the element.

During the tour with Henry, he led me to the washing experience and took a photo. I asked if he liked to do the washing and he replied, *"I like to get wet"*. It was the sensorial delight of getting wet that drew him to the experience. Henry also talked a lot about 'looking at' the flowers; He explained his favourite thing to do was to look at the flowers, in particular he talked about the colourful pansies in a vertical garden which were photographed and also mentioned in his book where he asked me to write *'I like the flowers, I really like it. I like this one the best'.* During the book making, Cameron and Sienna also wrote that they look at the plants.
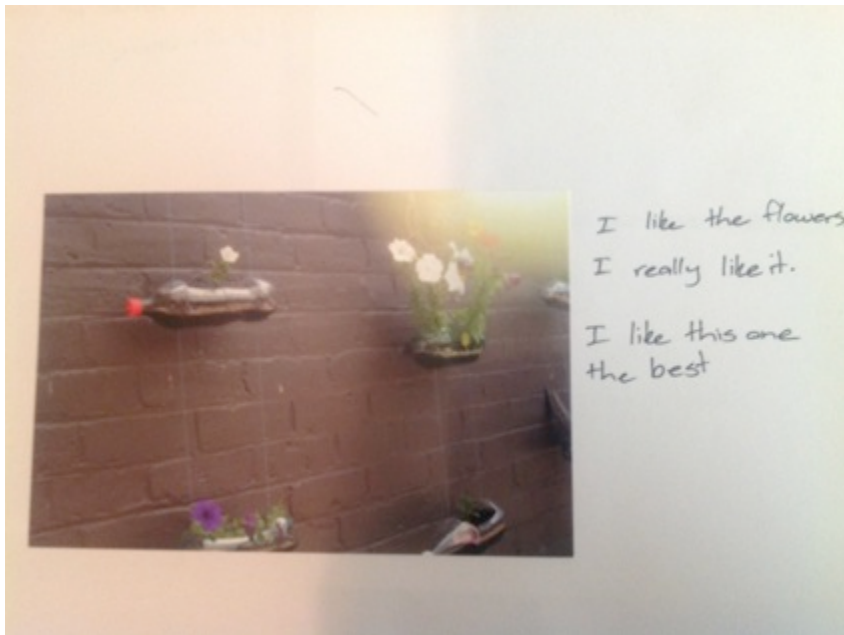

Figure 10. *"I like the flowers, I really it. I like this one the best"*. (Henry, aged three)

The children's photographs clearly focused on the detailed textures of the elements, such as the pea gravel, the timber of the bridge and the patterns in the log stump steppers. The photographs gave a visual idea of how these children view and

experience the outdoor environment, and the textures which were the main feature of

their photographs. Textures invite touch and sensory exploration for the children.

During tours with Oscar, Sienna, Henry and Isla, they all mentioned the affordance

of touching for elements in the space. This is an important consideration when

designing outdoor play spaces for children.

Children's photographs of textures

Figure 11. The end of the bridge.

Figure 12. A log stepper.

Figure 13. The gravel pit.

Figure 14. The washing experience.

All children at some stage of the visits described multisensory affordances. In

addition to mentioning these affordances, the children used descriptive language to

describe the textures they were familiar with as they talked about the elements. The

children showed a deep connection with their environment by explaining the

multisensory affordances they found compelling for the elements and spaces.

Affordances for connoisseurship

" *I like the tree because I just like it.*" (Sienna, aged four)
" *These are the plants. They die. We have to keep them.*" (Oscar, aged three)
"*I love the plants and the flowers. They are very beautiful. I like to pick the flowers,
but I don't want to pick them there. I picked two flowers on the way to daycare*"
(Henry, aged three)

Eisner (1998) describes connoisseurship as the art of appreciation. He

explains it can be displayed in any realm in which the characters, or in this case the

elements and spaces, are distributed and variable. It involves seeing closely and

understanding the way elements, situations and experiences relate to one another

(Eisner 1998, p.63). In this study, based on the perspectives of the children,

connoisseurship means loving, caring for, liking, and appreciating the elements and

spaces in the outdoor play space. These are recurrent words or themes that occurred

through the visits and relate to connoisseurship.

From the tours, photographs and conversations with the children, natural

elements were clearly compelling to the children and provided the most affordances.

Not only were the natural elements and spaces compelling, but also the children

spoke of loving and caring for their plants and flowers in their space. They told me

detailed information on the elements in the space and their experiences and showed

an in-depth knowledge on their outdoor play space: large trees provided shade and a

place to hang the swings from; bushes afforded touching and feeling, moving

between, hiding behind, smelling, looking at and touching; a variety of colourful

flowers afforded smelling the perfume, looking at and caring for.

Sienna took time and thought during the tour to show the spaces that are

important to her. Throughout the tour she constantly would refer to the natural

elements, in particular plants and trees, as we walked. Different plants in different

areas had a variety of affordances for Sienna. She mentioned smelling perfumes,

finding bugs on leaves, growing tall sunflowers, not being able to climb the tall trees,

looking at the tall trees and pretending there was a dinosaur land under the plants in

one garden bed. The photographs Sienna took of these parts of the tour were also

chosen and commented on in her book:

Figure 15. *"You see the leaves and the bugs." "Sunflowers, these are the sunflowers. First they start little, then they get big, but there are no flowers yet. I have sunflower seeds".* (Sienna, aged four)

Notions of admiring and appreciating the natural aesthetics of the outdoor

play space were represented on many occasions by all of the children. In Oscar's

book making session he added a photo he had taken of the plant and explained,

"*These are the plants. They die. We have to keep them.*" Henry mentioned caring for

the natural elements in the space as well, with his three chosen photographs of plants
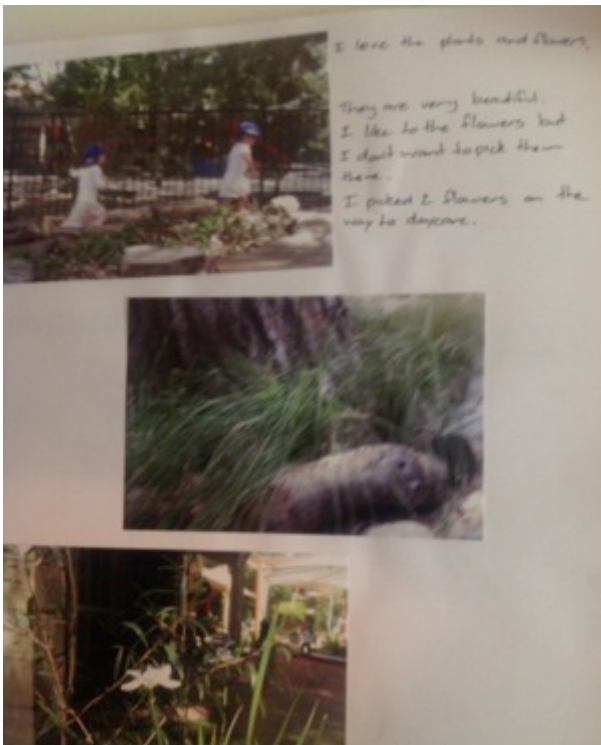
for his book and the comment below.

Figure 16. *"I love the plants and flowers. They are very beautiful. I like to pick the flowers, but I don't want to pick them there. I picked 2 flowers on the way to daycare."* (Henry, aged three)

The children respected and cared for the space and appreciated the aesthetics, referring to the elements being 'beautiful'. Through the book making session, there were many photographs chosen of natural elements and the comments were simply 'I love the plants', 'I really like this log' and 'I like the tree because I just like it'.

In the educator interviews, the educator most involved with the gardens explained that she feels it is important for the children to have the garden spaces because 'the benefits are you see things grow, you learn a degree of control, that you can't destroy everything…You get to see the seasonal changes, and it is calming and tranquil… just like for you and me.' This explanation reflects the children's desire to care for the garden, and exemplifies Henry and Oscar's comments on not picking the flowers.

In the conversations described above, it was evident that all of the children who participated in this research found nature compelling. They showed connoisseurship for their outdoor play space through their detailed knowledge of the elements, their appreciation and love for the elements in the space, and their understanding of how the elements and spaces relate to themselves and others. It was obvious that from the children's perspective, they appreciate affordances for connoisseurship through looking at, caring for, admiring, smelling, growing, finding 'beautiful' and in the words of Sienna, they 'just like it'. This evidence of connoisseurship from the children throughout the visits suggests connoisseurship is important for consideration in the design of children's spaces.

Affordances for connections

"I drive in the car and my brother sits besides me" **(**Cameron's explanation of his photo of the car structure).

In the environment that was studied, the children and their interactions with other children, educators, families and visitors were always visible. The children had strong connections within the centre. They had homerooms and ventured into other classrooms and outside during their time at the centre.

Throughout the visits the children would often be involved in pretend play. Isla explained she plays 'Mums and Dads' in the cubby house, Cameron pretends to make chocolate in the kitchen, Isla told me to watch out for the crocodile in the river (the sandpit) and the car structure provided many stimulating conversations about where we were driving to. Most of the pretend play the children explained to me involved connecting with other children. In Isla's home, she would see her parents interacting and she sees other Mums and Dads coming to the centre and in the local community. In Western Australia, we have crocodiles in the rivers in the north of the

state and it is sometimes a focus of a news report to mention the crocodiles. We also have local chocolate factories making chocolate as Cameron tells us he does in the cubby house kitchen. The children took many opportunities to role-play what they see and hear about in their community and form connections with each other and the people in their community.

For Sienna, the hay chair was where she said goodbye to her mother every day. Sienna showed me the hay chair during the tour, explaining, *"This is where I say goodbye- Bye Mummy"*. The chair is a connection for Sienna with her mother.

Figure 17. The 'hay chair' where Sienna says goodbye to her mother. (Sienna, aged 4)

Isla explained that she likes the tree swing because she can sit in it with a friend. It is more of a hanging basket chair than a swing and was used mostly by two children at a time.

Figure 18. Henry's photo of the swing. (Henry, aged 3)

Through the map making session all of the children drew a fence in their maps. The fence was the only common element. This was the first time through the visits the fence was mentioned by the children (although Cameron mentioned the mulch beyond the fence). Through focusing on the fence, the children have expressed that they recognise the fence is the boundary that defines their centre. In drawing the fence and what was beyond the fence, Isla connected with her time both inside and outside of the fence.
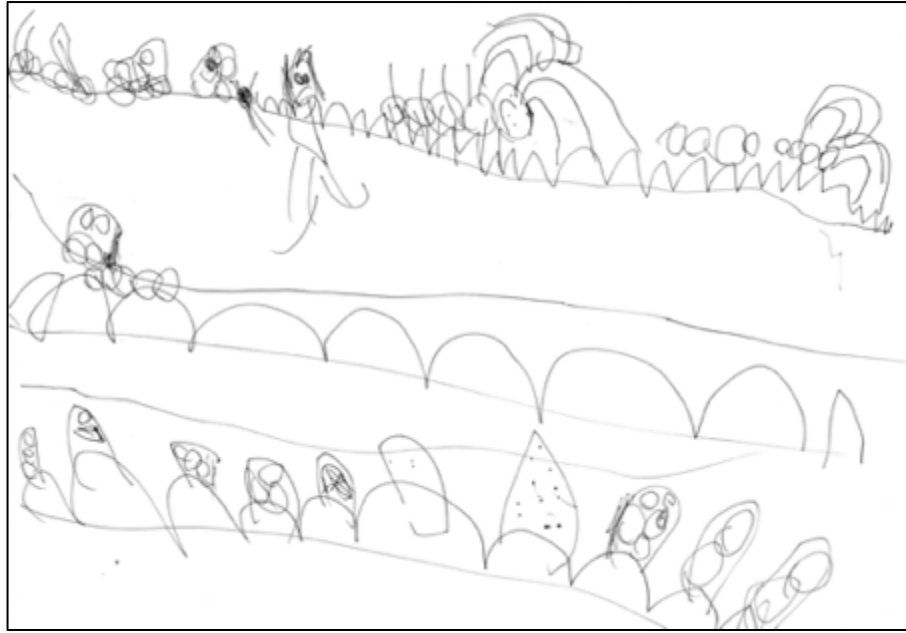
Figure 19. *"This is a car with wheels. That car has a person in there. I saw you (researcher) on the way to daycare. This is the grass and this is a baby caterpillar in my garden at home. This is the fence. That is a ladybug with hair, and that is the baby one in the cubby house. That is the flowers."* (Isla's - aged four - description of her map).

The children were connected to their space as well as with each other and the community. Most of the children showed me elements of the space that they had made and the also gave deep knowledge of the history of the space since they had been in the centre. Henry was proud to show me the teepee he had been involved in making the previous year. He explained he had put his handprint on the teepee and showed it to me. The tee pee was a feature of Henry's book.

Figure 20. *"This is a ghost and a sun and everything else. We made them on the teepee."* (Henry, aged three)
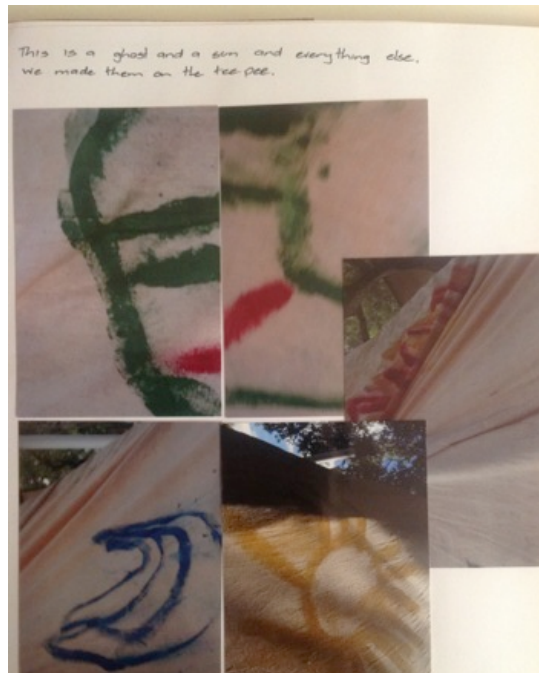
Lily's map involved many depictions of people playing together in her play space, highlighting the importance of social connections for Lily.

Figure 21. A part of Lily's map depicting 4 children demonstrates the importance of social connections for her. (Lily, aged 4)

During the educator interviews, three of the educators explained that the children are very social and like to play with each other when outside. Examples they gave included the children following each other in a game with sticks and playing mums and dads in the cubby. One educator explained that she likes to do jobs outside and this gives the children an opportunity to help her and have some one-to-one conversation, which they enjoy.

The children showed me they had deep connections with the centre and the outdoor play space as well as the community. They are aware of what happens in the local and wider community and they explore this through pretend play with each other, socially and independently. Parts of the outdoor space work as connections with the community such as the hay chair Sienna uses to say goodbye to Mum. The children found elements in the space compelling that allowed affordances to exist, such as the cubby houses, the tee pee, the car structure, the hay chair and the tree swing. Elements and spaces for connections should be considered in the design of children's play spaces because of the importance these children placed on connections.

Chapter Summary

Using a child-focused participatory research framework with this group of children over a period of six visits allowed these young children to communicate to me clearly what they find compelling in their outdoor playspace. This chapter has introduced themes of affordances that I developed from interpreting the data on the children's perspectives (Appendix G) about what they found compelling in an outdoor playspace and the affordances they perceived in the space. These themes

are: creative affordances; active affordances; multisensory affordances; affordances

for connoisseurship; and affordances for connections.

The children expressed their views and opinions through tours, photography,

book making, discussions, writing and drawing maps. The variety and amount of

methods for communicating the children's thoughts revealed the nuances of their

own personal experiences and insights. Each visit with the children provided more

in-depth understanding of the children's perspectives on what they found compelling

and the affordances they found in their space. The children's knowledge and

understanding of the elements and space was profound. Their descriptions of the

textures, their understandings of the workings of nature and their love, appreciation

and care for their space invites professionals to rethink attitudes towards what goes

into children's spaces when they are designed. These children have provided an

example of children being experts on their own spaces and have provided further

inspiration to recognise children's capabilities as authorities on their own

experiences and perspectives. The following chapter will discuss the results of this

project in terms of what the children found compelling and the affordances of the

spaces and elements, as well as discussing the process for seeking children's

perspectives and the design implications of this research.

Chapter 6 – Discussion and Conclusion

Introduction

This study engaged an interpretive participatory research approach in order to invite children into conversations about what they find compelling in their outdoor spaces and the affordances of these spaces. Acknowledging the recommendations of the United Nations Conventions on the Rights of the Child (1989) and informed by the field of knowledge termed Childhood Studies, the research was built on the foundation of children's rights, and on an image of children as capable constructors of and contributors to knowledge. The research was guided by three research questions, which will be addressed in this chapter, and used young children's perspectives and narratives to address the questions.

This concluding chapter will be organised into three sections, which will outline the contributions of the research to current knowledge. The three sections within this chapter will discuss in turn: Invitations for affordances; Consulting with children; and Implications for designers of children's outdoor spaces.

Invitations for affordances

"Life is experienced as more satisfying and interesting, and is therefore more meaningful and conductive to growth when spaces **invite** us to do what we want to do." Kritchevsky and Prescott (1969, p.5.)

The first two research questions for the study are being addressed together because they are interwoven and inextricably linked.

1. What elements and spaces do young children find compelling (interesting) in an outdoor space?

2. What affordances do young children attribute to the elements of an outdoor

learning environment?

What the children found compelling in their outdoor play spaces were the

elements and spaces that invited them with affordances. For the children involved in

this research, it was the affordances of the elements and spaces that made them

compelling. I have chosen the term 'Invitations' for this section because I believe the

elements in the environment invited the children to engage, just as the children

would invite each other to engage. The five themes of affordances developed from

this study stemmed from an initial invitation to the children. A flower invites a child

to smell it or pick it; a balance beam is an invitation to balance, climb and jump; a

question is an invitation into a conversation with another child or adult. Matthews

(1992) explains that the notion of affordances lends itself to a 'continuous and

changing relationship' between the child and the environment as they provide

invitations for each other.

Chapter 5 introduced five themes of affordances that emerged following

interpretation of the children's voices around the affordances they found in their

outdoor environment. The children's photographs, books and maps, accompanying

conversations and educator interviews revealed a deep understanding of the elements

and spaces in their outdoor play space and showed connections the children had

developed with their spaces, each other and the wider community.

Their photographs captured the outdoor space from the perspective of a child,

showing the detailed textures of the elements. The majority of the children's

photographs focused on fine details, especially close range photographs of natural

elements, textures and ground surfaces, highlighting the importance of natural

elements and multisensory affordances in the outdoor environment. Keeler (2008)

explains "it's the small things in a child's environment that create the biggest interest and excitement" (p. 39). The children's photographs and conversations clearly demonstrated that multisensory affordances were compelling to them in an outdoor play space. Vecchi (1998) informs us that modern culture generally views the use of multiple senses as only a small part of learning, with the consequences being we are underestimating the extraordinary sensory abilities of the human body. Furthermore, Vecchi (1998) adds that environments for children should be designed with an awareness that nourishing children's sensory perception means extending possibilities for their brain to develop.

The children were compelled to be creative and appreciated hand-made elements they had been involved in making previously. Knight (2011) explains that creativity is at the root of good education. Creative affordances promote opportunities for new ideas, discoveries, changes and innovations. Creative affordances were used, for example, when Sienna made her mud pies, when Cameron made his pretend chocolate, when Isla told me I was going to get eaten by a crocodile under the bridge. Sobel (2008) agrees that fantasy and imagination is an important design principle in children's outdoor spaces and explains that young children live in their imaginations. The children had created large structures as a group as long-term projects and these were still visible in the space and compelling for the children; such as the tee pee, the rocket ship box, and the igloo they were constructing at the time of the research. Creative affordances are not just artistically creative, but also involve creative thinking and pretend play. Knight (2011) explains creativity happens when the children find original ideas and solutions to problems, see new relationships between objects, and make connections. The elements and spaces in the children's environment invited the children to be creative and to freely

explore. Curtis and Carter (2003) explain that offering open-ended materials in a variety of areas will speak to children's desire to continually rearrange and combine materials for creative outlets.

There were many invitations from the environment to compel the children to be active. Active affordances were apparent when the children used the balance beam to jump off, balance and climb on and slide off. The children explained in their book making session they like to swing, to ride bikes, to climb, to jump, to hide, to go under and over. The children repeated these affordances over and over. They would challenge themselves to jump further or higher off the beam, or spin faster and longer on the swing. Stine (1997) explains that by taking challenges in the outdoor environment, children learn about competence and limitation. He explains that a challenging physically active environment can support a multitude of competences if the children can explore actively, yet safely.

Connoisseurship was an affordance that took much thought and time for me to identify and name, as I struggled with how to condense the children's meanings into a comprehensive construct. It is clear through the children's discussions and photographs that plants and natural elements were the most compelling elements in their outdoor space: they were photographed more than anything else, and in conversation with the children they were given the most affordances. The children's perspectives enabled me to appreciate that affordances are not simply possibilities for actions, but also possibilities for relationships. The children spoke of 'caring for' and 'loving' the plants and trees and they also shared great knowledge about the elements in their outdoor play space. The six children involved in this research were connoisseurs of their outdoor space. They were experts on the textures, like Sienna describing the textures of the hay chair in dry and wet weather

and explaining that the small plant was a sunflower, although it had yet to grow tall

and flower and make seeds. Three of the children explained to me that they like to

pick flowers outside of the centre, but they don't pick the flowers in the play space

because they have to care for it. They showed an appreciation and respect for their

space. Sobel (2008) explains that approaches that start from inside the child's world

recognise children's fascination for nature and build on this to provide education that

"simultaneously honours developing a child's love for the earth and developing a

child's academic and social competence" (p.3), implying a more holistic

development of the child.

The elements and spaces in the studied environment invited the

children to make connections. Certain elements in the outdoor space – such as the car

structure - were very compelling in how they facilitated social interactions between

the children. Almost every time I passed the car structure on a child-led tour, that

child was invited into the structure (as was I) to go on a journey with other children

to any number of places, ranging from the shops and South Africa to the moon.

Children expressed their connection with the environment through their deep

knowledge of the details of the space and in finding elements that connected them

personally like Henry's handprint on the tee pee. Warden (2010) explains that when

young children make connections with people and with places "the relationship of

'us' can have the most important influence on a child's esteem and self worth"

(p.42); this implies that connections are important for children's healthy social and

emotional development. McAuliffe (2012) supports this idea by explaining that

connection to a place is a vital part of our human condition. The idea of affordances

for connections supports the philosophies of Bateson (1979) who introduced the

notion that everything in the natural world is connected through patterns and that

children should be educated by understanding the relationships of these connections and not by learning new things in isolation. The see-through fence was also important for connections from the children's perspectives. Sienna said goodbye to her mother through the fence as a daily ritual and watched her drive away and Cameron saw the mulch pile through the fence and reminisced on a previous walk to climb on the pile. Through the map making session all of the children drew a fence in their maps. The fence was the only common element. Through focusing on the fence, the children have expressed that they recognise the fence is the boundary that defines their centre, but also a way of connecting with the community.

Consulting with children

Throughout the centre visits with the children, I was careful to listen to their ideas and words when they spoke or let them take photographs quietly if they seemed to prefer. I did ask some open ended questions about the spaces such as "Tell me about this space" or "What would you like to show me in your garden now?". I told the children I was interested to know their thoughts. Effectively listening to children suspends judgement and is open to uncertainty (Rinaldi, 2006); it engages multiple perspectives and provides opportunities for all voices to be heard in many ways, not just verbally. The tours, photographs, book making sessions and map making encouraged conversations and reflections and allowed multiple opportunities for children's voices to be heard and discussed. Some children chose to talk with me as they led their tours, while others were more verbal during the book making session or preferred to draw their thoughts during the map-making session. As Clark and Moss

(2001) observe, "bringing together a range of tools may give a more detailed impression of young children's perspectives" (p. 14).

Before starting this research, I purchased several cheap digital cameras and voice recorders for the study. These didn't work for the children because of the 'shutter-lag' so I used my own good digital camera for the children to take the photos. The children were very careful with the cameras and were able to take high quality photos. This highlighted the importance of high quality research equipment for the children's use not just for adults' purposes. As adults, we desire and assume we need the best camera and equipment to conduct research, and often, without thinking, we give the children the cheaper alternative. Researchers need to provide adequate equipment for children to honour the quality of the children's contribution.

This study has shown that children's tours, photographs, books and maps have the potential to foster a climate of participation and inclusion in an early learning setting. By encouraging both visual and verbal languages and providing opportunities for multiple forms of dialogue and listening, these images and perspectives can support adults in creating a culture of listening (Edwards, Gandini, & Forman, 2012). This culture of listening should be considered by researchers when researching with young children and by designers of children's playspaces as a part of the initial and ongoing consultation process.

Limitations

The voices of the children during this study were relevant for the early years service they attend. Their perspectives were formed around their experiences in the spaces where they spend most of their time. Whether these children's views and the themes of affordances that were developed from these children's views are

transferable to other outdoor play spaces is open to consideration and further research. One of the purposes of this research was to provide an invitation to find meaningful ways of consulting with children and honouring their voices in any setting, and I believe the research has achieved this aim. Perhaps recognising that the findings may only be relevant to these children and this environment honours the children's perspectives and supports the idea that *all* children's voices should be sought though the consultation process for designing children's outdoor spaces.

This study only focused on six children in one setting, which is a small number of participants. A larger scale study could be completed, comparing a larger number of children's perspectives. There were 135 children attending the service who also had perspectives to be considered. The amount of data produced just from the six children was phenomenal, and this would only grow with more children consulted.

Another limitation surrounds the length of time spent at the centre, which was two hours when the children had their morning outdoor playtime. A longer time at the site may have revealed more variety in the experiences of the children in the outdoor space. It would have been interesting to spend time in the afternoons with the children in the outdoor space to see if they play differently at that time of day or are involved in different experiences.

Through listening to the children's voices and perspectives, I realise it is possible the children were at times transferring information to me that had come from their educators. Several of the children mentioned not picking the flowers. Oscar told me in the initial meetings that he only picks the flowers when the teachers are not looking, implying that the message to not pick the flowers in the centre had come from the educators. I acknowledge there may be other conversations with the

children that were influenced by the priorities of the educators. This is a limitation to
be considered in future research.

The final limitation surrounds the consultation methods inspired by the
Mosaic Approach. The slide show did not work for consulting with the children in
this group, as they seemed not interested, possibly because there was constantly a
slide show presented in their classroom all day of photos of the children in the class.
Also, I think the map-making process needs further refining and an introduction for
the children to maps would have helped. I felt the children had not had much
experience with maps and a different method, perhaps model making of the outdoor
play space, would have suited this group better by building on existing knowledge, as
they were making models at the time in their classrooms. A more flexible approach
may have suited better and I think consulting with the educators on the children's
strengths and experiences may have led me to change the methods I used in regards
to the slide show and the map-making.

Research Implications

When consulting with children, and after their perspectives have been
gathered, it is important for adults to consider how they will respond to the
information that has been shared – inviting collaboration and giving weight to all
points of view in the learning community. This section aims to address the third
research question:

3. What are the implications of these findings for designers of early childhood
outdoor spaces?

As outlined in Chapter 5 and in the above sections, five themes based around affordances have been developed: creative affordances; multisensory affordances; active affordances; affordances for connoisseurship; and affordances for connections. These themes could be applied to the design of physical early childhood outdoor play spaces by adding a rich variety of natural elements (including mud, rocks, logs, water), sensory plants, an abundance of flowers, textural groundcovers, small spaces, enclosed spaces, open/ active spaces, natural found materials for creativity and exploration, and by giving some thought into how the areas connect and flow. In the environment studied in this research, there were many little paths and passages that helped the children move through the environment on more than one pathway. As I mentioned in regards to the car structure, the paths seemed to lead to the structure, and around it, so the play would move through the structure. It was a central place for social connections, sometimes brief, sometimes longer. The play areas were divided by gardens with many trees and plants. In most parts of the outdoor space I was never a few steps away from a plant or a flower. I believe the quantity of flora in the environment significantly enhanced the children's connection with the space, and enabled their connoisseurship to flourish.

This research has been unique in looking at the affordances of an early childhood outdoor playspace from the children's perspective. As mentioned in Chapter 2, it is common in the design of children's spaces that children are not involved and also that the focus is on the equipment and resources to put into the space, not necessarily the affordances the elements and spaces will provide. If children are not able to be involved in the design process, the above themes at least will provide a child's voice on what is compelling in an outdoor play space. When professionals do wish to consult with children during the design process, this study

has provided an interpretive, participatory model that could be used. As Truscott
(2014) explains, young children's understandings and perceptions of nature have
been almost entirely over-looked in design of their spaces. Keeler (2008) states:

> "Children's access to nature has always been an important issue, but it has
> recently become a hot topic among educators, researchers, governments and
> parents. People from all walks of life are mobilizing to make positive changes
> regarding children's outdoor environments." (p. 20)

This research provides some insights into how these changes can be undertaken with
the children in mind and involved in the process.

Conclusion

In sharing and interpreting the voices of six three and four year old children, this
study has addressed the guiding questions of the research; research implications have
been discussed and consultation with children has been demonstrated as an effective
way to gain children's perspectives and value children's voices. Throughout the
study, the Mosaic Approach has proved to be a helpful and adaptable framework,
providing an interpretive participatory approach for gathering children's
perspectives. For some professionals, the process of listening to young children in
this way will be new. Listening is meant to be "more than a tick-box activity" (Clark
& Moss, 2001, p. 13). This study invites all professionals who design spaces for
children to listen to children's many languages and voices and to consider the
affordances the spaces provide from a child's perspective. Working from a rights-
based approach for design, with an image of children as capable and competent
means taking more time to make what matters to children visible and dedicating

one's self to honouring children's voices by making what matters to children a

reality.

References

Atkins, L. and Wallace, S. (2012). *Qualitative Research in Education.* London: SAGE.

ACECQA. (2013). *Guide to the National Quality Standard* [Independent statutory authority (ECEC national quality regulation)]. Retrieved from http://files.acecqa.gov.au/files/National-Quality-Framework-Resources-Kit/NQF03-Guide-to-NQS-130902.pdf

Bae, B. (2010). Realizing children's right to participation in early childhood settings: Some critical issues in a Norwegian context. *Early Years: Journal of International Research & Development, 30*(3), 205-218. doi: 10.1080/09575146.2010.506598

Bateson, G. (1979) *Mind and Nature: A Necessary Unity*. New York: E. P. Dutton.

Berry, P. (2001). *Playgrounds that work: creating outdoor play environments for children birth to eight years*. NSW, Australia: Pademelon Press.

Blagojevic, B., & Thomes, K. (2008). Young photographers: Can 4-year-olds use a digital camera as a tool for learning? An investigation in progress. *Young Children, 63*(5), 66- 72.

Bryman, A. (2012). *Social Research Methods*. Oxford: Oxford University Press.

Butler, S., Gross, J., & Hayne, H. (1995). The effect of drawing on memory performance in young children. *Developmental Psychology*, *31*(4), 597.

Cele, S. (2006). *Communicating Place: methods for understanding Children's Experience of Place*. Dept. of Human Geography; Stockholm University

Clark, A. (2007). Views from inside the shed: children's perspectives on the outdoor environment. *Education 3-13: International Journal of Primary, Elementary and Early Years Education, 35*(4), 349-306. doi: 10.1080/13004270701602483

Clark, A. (2010). *Transforming children's spaces : children's and adults' participation in designing learning environments*. New York: Routledge.

Clark, A. and Moss, P. (2011). *Listening to young children: The Mosaic Approach.* London: NCB.

Cook, T., & Hess, E. (2007). What the camera sees and from whose perspective: Fun methodologies for engaging children in enlightening adults. *Childhood, 14*(1), 29-45.

Corsaro, W.A. (1997). *The sociology of childhood.* Thousand Oaks, CA: Pine Forge
        Press.

Curtis, D., & Carter, M. (2000). *The art of awareness: How observation can
        transform your teaching*. St. Paul, MN: Redleaf Press.

Dannenmaier, M. (2008). *A child's garden*. London: Timber Press.

Department of Education, Employment and Workplace Relations (DEEWR). (2009).
        *Belonging, being and becoming: The early years learning framework for
        Australia.*

Edwards, C., Gandini, L., & Forman, G. (Eds.). (2012b). *The hundred languages of
        children: The Reggio Emilia experience in transformation* (3rd ed.). Santa
        Barbara, CA: Praeger.

Eide, B. J., & Winger, N. (2005). From the children's point of view: Methodological
        and ethical challenges. In A. Clark, A. T. Kjorholt & P. Moss (Eds.), *Beyond
        listening: Children's perspectives on early childhood services* (pp. 71-89).
        Bristol, UK: Policy Press.

Einarsdittir, J. (2006). Playschool in pictures; children's photgraphs as a research
        method. *Early Childhood Development and Care, 175*(6), 523-541. doi:
        10.1080/03004430500131320

Eisner, Elliot W. (1998) *The enlightened eye : qualitative inquiry and the
        enhancement of educational practice*. Upper Saddle River, N.J.: Merrill,
        1998.

Elliot, S. (Ed.) (2008). *The outdoor playspace naturally for children birth to five
        years*. Australia: Pademelon Press.

Elliott, R., & Timulak, L. (2005). Descriptive and interpretive approaches to
        qualitative research. *A handbook of research methods for clinical and health
        psychology*, 147-159.

Fenech, M., Sumsion, J., & Shepherd, W. (2010). Promoting early childhood teacher
        professionalism in the Australian context: The place of resistance.
        Contemporary Issues in Early Childhood, 11(1), 89-105.

Fjørtoft, I. and Sageie, J. (2000). The natural environment as a playground for
        children: landscape description and analysis of a natural playspace.
        Landscape and Urban Planning. 48:83-97.

Freeman, C. (1995). Planning and Play: Creating greener environments. *Children's Environments*. 12 (3), pp 381-388. doi:134.4.248.132.

Gibson, J. J. (1979). The ecological approach to visual perception. Boston: Houghton-Mifflin.

Gill, T. No fear : Growing up in a risk adverse society. No fear : Growing up in a risk adverse society. (2007): 94pp.

Graue, E., & Walsh, D. J. (1998). *Studying children in context: Theories, methods, and ethics*. Thousand Oaks, CA: SAGE. 117

Green, M.. (2013). Transformational design literacies: children as active place-makers. *Children's Geographies*. doi: 10.1080/14733285.2013.812305

Greenfield, C. (2011). Personal reflection on research process and tools: Effectiveness, highlights and challenges in using the Mosaic approach. *Australasian Journal of Early Childhood 36*(3), 109-116.

Greenman, J. (2005). *Caring spaces, learning places: Children's environments that work*. Redmond, Washington: Exchange Press.

Harcourt, D. and Conroy, H. (2011). Informed Consent: Processes and procedures in seeking research partnerships with young children. In D, Harcourt, B. Perry & T, Waller (Eds), *Researching young children's perspectives: Debating the ethics and dilemas of educational research with children* (pp.38-51). London: Routledge.

Harcourt, D. Perry,B. & Waller, T.(Eds). (2011) *Researching young children's perspectives: Debating the ethics and dilemas of educational research with children*. London: Routledge.

Hart, R. (1979). *Children's experience of place.* New York: Irvington Publishers.

Heft,H. (1988). Affordances of Children's Environments: A functional approach to environmental description. *Children's Environments Quarterly*. No. 3: 29-37.

Holloway, I. (1997). *Basic Concepts for Qualitative Research*. Oxford. Blackwell Science.

Hussein, H. (2012). Affordances of a sensory garden towards learning and self development of special schooled children. *International Journal of Psychological Studies,* 4(1), 135-149.

Keeler, R. (2008). *Natural playscapes: creating outdoor environments for the soul*. USA: Exchange Press.

Knight, S.(2011). *Risk and adventure in early years outdoor play*. London: SAGE.

Kritchevsky, S., & Prescott, E. (1969). with Walling, L. *Planning environments for young children: Physical space*.

KyttÄ, M. (2004). The extent of children's independent mobility and the number of actualized affordances as criteria for child-friendly environments. Journal of environmental psychology, 24. 2: 179-198.

Little, H. (2006). Children's risk-taking behaviour: Implications for early childhood policy and practice. *International Journal of Early Years Education, 14*(2), 141-154. doi: 10.1080/09669760600661427

Little, H. (2010). Relationship between parents' beliefs and their responses to children's risk-taking behaviour during outdoor play. *Journal of Early Childhood Research, 8*(3), 315-330. doi: 10.1177/1476718x10368587

Little, H., & Wyver, S. (2008). Outdoor play: Does avoiding the risks reduce the benefits? *Australian Journal of Early Childhood, 33*(2), 33-40.

Loebach, J. (2004). *Designing learning environments for children: An affordance-based approach to providing developmentally appropriate settings*. Halifax: Dalhousie University.

Louv, R. (2008). *Last child in the woods; Saving our children from nature deficit disorder* (2nd ed.). USA: Algonquin Books.

Lowe, R. J. (2012). Children deconstructing childhood. *Children & Society, 26*(4), 269-279. doi: 10.1111/j.1099-0860.2010.00344.x

Malaguzzi, L. (1998). History, ideas, and basic philosophy: An interview with Lella Gandini. In C. Edwards, L. Gandini & E. Forman (Eds.), *The hundred languages of children: The Reggio Emilia approach - advanced reflections*. Westport, CT: Ablex.

Malaguzzi, L. (1994). Your image of the child: Where teaching begins. *Child Care Information Exchange, 96*, 52-56.

Matthews, M. (1992) *Making sense of place: children's understanding of large scale environments*. Hemel Hempsted : Harvester Wheatsheaf.

Mayall, B. (2003). *Towards a sociology for childhood: Thinking from children's lives*. Buckingham: Open University Press.

McAuliffe, G. (2012). The philosophy of choice: Bold Park Community School. *The Space Magazine*. Issue 28, Winter 2012. New Zealand.

Merriam, S. (1998). *Qualitative research and case study applications in education.* San Fransisco: Josey-Bass Publishers.

Merewether, J and Fleet, A. (2013). Seeking children's perspectives: a respectful layered research approach. *Early Child Development and Care.* doi: 10/1080/03004430.2013.829821

Merewether, J. (2015). Young children's perspectives of outdoor learning spaces: What matters?. *Australasian Journal of Early Childhood* 40 (1): 99-108.

Millikan,J. (2003). *Reflections: Reggio Emilia principles within Australian contexts.* NSW: Pademelon Press.

Moore, R. (1986). *Childhood's Domain: play and place in child development.* London; Croom Helm.

National Health and Medical Research Council (NHMRC) (2007). *National statement on ethical conduct in human research - second consultation draft.* Canberra: NHMRC.

Parsons (2011). *Encouraging Student Engangement.* University of Alberta.

Prasad, P. (2005). *Crafting qualitative research: Working in the postpositivist tradition.* Armonk, NY: M E Sharpe.

Quennerstedt, A. and Quennerstedt, M. (2013). Researching children's rights in education: Sociology of childhood encountering educational theory. *British Journal of Sociology of Education.* 35 (1), pp.115-132.

Rinaldi, C. (1998). Projected curriculum constructed through documentation-Progettazione: An interview with Lella Gandini. In C. Edwards, Gandini, L and Forman, G. (Ed.), *The Hundred Languages of Children; The Reggio Emilia Approach- Advanced Reflections.* USA: Ablex Publishing.

Rinaldi, C. (2006). *In dialogue with Reggio Emilia: Listening, researching and learning.* London: Routledge.

Ryan, G.W. and Bernard, H.R. (2003). Techniques to Identify Themes. *Field Methods,* 15 (1), 85-109. doi:10.1177/152822x02239569

Smith, A. B. (2007). Children as social actors: An introduction. *International Journal of Children's Rights, 15,* 1-4.

Smith, A., B. (2013). *Understanding children and childhood* (5th ed.). Wellington: Bridget Williams Books.

Sobel,D. (2008). *Childhood and Nature: Design principles for educators*. USA: Stenhouse Publishing.

Stephenson, A. (2009). Horses in the sandpit: photography, prolonged involvement and 'stepping back' as strategies for listening to children's voices. *Early Childhood Development and Care, 179*(2), 131-141. doi: 10.1080/033004430802667047

Stine, S. (1997). *Landscapes for Learning; Creating outdoor environments for children and youth*. Canada: Wiley.

Truscott, J. (2014). *An exploration of Nature-Based Play at Australian Pre-schools*. Southern Cross University.

http://epubs.scu.edu.au/cgi/viewcontent.cgi?article=1439&context=theses

United Nations. (1989). The United Nations convention on the rights of the child. New York, NY: UNICEF.

Vecchi, V. (1998). What kind of space for living well in school. In *Children, Spaces, Relations: metaproject for an environment for young children.* Reggio Children: Italy.

Wake, S. J. (2007). Designed for learning: Applying "learning-informed design" for children's gardens. *Applied Environmental Education and Communication, 6*(1), 31-38. Retrieved from

http://search.proquest.com/docview/742878243?accountid=10382

Warden,C. (2010). *Nature Kindergartens*. Scotland: Mindstretchers.

Waller, T., & Bitou, A. (2011). Reasearch with children: Three challenges for participatory research in early childhood. *European Early Childhood Education Research Journal, 19*(1), 5-20.

Wesson, M and Salmon, K. (2001). Drawing and showing: helping children to report emotionally laden events. *Applied Cognitive Psychology*. 15 (3), pp 301-319.

Wollons, Roberta. L., (Ed). (2000). *Kindergartens and cultures : the global diffusion of an idea*. New Haven: Yale University Press.

Wright, S. (2007). *Young children's meaning-making through drawing and 'telling': Analogies to filmic textual features.* Australian Journal of Early Childhood, 32(4), 37–48.

Appendix A: Question Banks

Preliminary questions for children during the tours

Are you happy to show me around your garden?

Tell me about your outdoor space?

What do you do when you are outside?

What are your favourite parts of your outdoor play space?

What do you do in this part of the space?

Preliminary questions for looking over photographs with children and book making

Why did you take this photo?

Tell me about what is in this photo?

What do you do in this part of the garden?

Why is this part of the garden/ item important to you?

How do you feel about this photo?

Preliminary questions for map making

Lets draw a map of the garden. What does a map look like?

What do people use maps for?

What things might you see on a map?

What things will we need to put on our map?

What will go on the map first?

What parts of the garden need to go on the map?

Where do these parts of the garden go?

What do we want people to know about this part of the garden when they are looking at the map?

Why do you think that needs to go on the map?

Preliminary questions for educator interviews

What do children spend most of their time doing when they are outside?

What are their favourite things to do? Why do you think this is?

Are there parts of the garden where they don't play? Why do you think this is?

Is the children's play similar every day or does it change?

Could you explain these changes to me?

What do you feel are the benefits of this garden for the children?

What do you feel are the disadvantages of this garden for the children?

What is your role when children are in the garden?

What are the rules/ boundaries for children in the garden?

Preliminary questions for management

What do children spend most of their time doing when they are outside?

What are their favourite things to do? Why do you think this is?

Are there parts of the garden where they don't play? Why do you think this is?

Is the children's play similar every day or does it change?

Could you explain these changes to me?

What do you feel are the benefits of this garden for the children?

What do you feel are the disadvantages of this garden for the children?

What is the educator's role when children are in the garden?

What are the rules/ boundaries for children in the garden?

Do you have future plans for the garden? If so, what are they?

What do you think the families think about the garden? What issues or comments have families had?

Appendix B: Number of children who photographed each element during the tours

Element/ space	Number of children who photographed
Plants	6
log stepper	6
Bridge	5
mud pit	5
washing experience	4
tree swing	4
people/ other children	4
pea gravel/ pipes	3
crash mat	3
home furniture in cubby	3
automobile structure	3
hession chair	3
ball	3
pebbles	3
bike	3
Pavers	2
totem	2
balance beam plastic	2
cubby house	2
tee pee/ painting	2
outside fence/ fence	2
inside hexagon cubby	2
book space	2
blocks	2
mulch	2
sand pit	2
shoes	2
path	1
bean growing tee pee	1
leaves	1
child made rocket	1
bird cage	1
tile experience	1
toddler boat	1
mulch outside of fence	1

Appendix C: Elements and spaces that were photographed during the tours in order of most affordances mentioned to least affordances mentioned.

9	logs/ steppers
7	plants
6	cubby house
5	car structure
5	Balancing beam and mats
5	garden
4	water play
4	corn
4	pirate ship/ stage
4	mud pit
3	totem
3	tiles
3	swing from tree
2	bridge
2	pile of mulch outside fence
2	pig
1	dirt patch
1	blanket on ground
1	pipes maze water play
1	fire pit
1	tee pee
1	sandpit
1	Parrot/ bird cage
1	open space
1	Hay bales with hessian
1	bikes
1	birds in sky

Appendix D: Most mentioned affordances during tours

Affordances mentioned	Times mentioned during Tours
playing	10
pretending	7
looking at	7
jumping	5
making	5
Hiding	4
climb	4
sitting	4
walking	3
stepping	3
driving	3
washing	2
balancing	2
reading	2
running	2
cooking	2
measuring	2
eating	2
finding things	2
swinging	1
being taller	1
riding	1
moving something	1
tapping	1
slide	1
spinning	1
collecting	1

Appendix E: How many children chose which elements for the books, and how many

times they appeared in the book by each child (for items appearing more than once)

Element/ space	Total children	Cameron	Sienna	Isla	Oscar	Henry	Lily
Plants	6	1	3	1	3	14	3
Log stepper	6	1	1	12	1	8	1
Bridge	4	2		11	3	5	
Mud pit	4	1	1			3	1
People/ other children	4		2	2	1		1
Cubby house	4	1	1	2	1		
Washing experience	4		2	2	2	1	
Pea gravel/ pipes	3		1		7	2	
Balance beam and mats	3	1		11		1	
Home furniture in cubby	3	1		3		5	
Automobile structure	3	1			1		1
Bike	3	1	1			1	
Tree swing	2	1				1	
Hessian chair	2		1	1			
Ball	2	1				2	
pavers	2			1	2		
Totem	2	1			3		
Tee pee	2	2				7	
Blocks	2	1				1	
Sandpit	2	2	1				
Shoes	2			1	1		
Bottle igloo	2	1				1	

Appendix F: Elements represented in the map-making session by the children

Child	Elements/ spaces in maps
Isla	Herself Fence Caterpillar (at home) Lady bug Cubby house Plants cars
Sienna	Herself Hay chair Logs Morning tea log table Swing 'corner' Fairies Reading 'corner' with cushions
Oscar	Fence Cars Plants Children
Lily	Herself Fence
Cameron	Tree Mud cakes Cupcakes
Henry	Didn't want to describe his map and didn't talk while drawing.