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Early Childhood Education Teacher Experience and Knowledge Regarding Outdoor Learning and Affordances

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Walden University
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Abstract

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MA, Antioch University, 1997

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Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Early childhood education (ECE) teachers have indicated that they are interested in supporting children's learning outdoors but have been challenged with intentional use of the outdoor learning environment (OLE). The purpose of this qualitative study was to illuminate ECE teacher experience with and knowledge of supporting children's learning in the OLE, specifically using affordances for teaching and learning. The conceptual framework was based on the Reggio Emilia approach, Gibson's affordance theory, Dewey's ideas regarding educational experiences, and Vygotsky's zone of proximal development. The key research question addressed teachers' experiences and knowledge of affordances in the OLE. The 12 participants were teachers who had at least 1 year experience teaching in a program that served children who were 1, 2, 3, 4, and/or 5 years old and were working at a program that had an outdoor space that was used a minimum of four times a week. Data were collected through semi-structured interviews and analyzed through an iterative process to determine codes, categories, and themes. The results revealed six themes: participant recognition and understanding of the differences and relationship between indoors and outdoors; participants' understanding of affordances in the OLE; teacher roles/actions and engagement with children in the OLE; the range of comfort levels with risky play and affordances; affordances in the OLE; and participant interests for further learning. The study holds implications for positive social change for the ECE field by providing insight for developing and enhancing college courses and in-service trainings. For the participants, awareness of affordance theory may bring more intentionality to their teaching practice.

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Dedication

This study is dedicated to my parents, Carol and Ray, who are a never-ending source of inspiration to me.

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Table of Contents

Chapter 1: Introduction to the Study

It has been shown that a well-designed outdoor environment promotes positive outcomes for children (Chawla, 2017). Children benefit from spending time outdoors in all areas of development—physical, social/emotional, and cognitive (Bento & Costa, 2018; Carrus et al., 2015; Ernst et al., 2019; Ulset et al., 2017). However, although many early childhood education (ECE) programs have an outdoor space, the use of such environments for teaching and learning is often minimalized (Miranda et al., 2017). This study addressed ECE teacher intentional use of the outdoor learning environment (OLE) with an examination of teacher experiences with and understanding of supporting children's learning in the OLE, specifically using affordances for teaching and learning. Chapter 1 starts with background information about affordances and children's learning in the OLE followed by the problem statement, purpose of the study, and research questions. The chapter continues with an overview of the conceptual framework, the nature of the study, definitions, assumptions, scope and delimitations, and the significance of the study.

Background

Affordances are opportunities (Gibson, 1979), and ECE indoor and outdoor environments include a variety of affordances for teaching and learning. A well-designed OLE supports children's development and learning (Olsen & Smith, 2017; Waters & Bateman, 2015; Zamani, 2016). Nature and outdoor experiences in the OLE are beneficial to young children's well-being and social, emotional, physical, and cognitive development (Chawla, 2017). In the OLE children learn from both teacher-directed and

child-initiated activities such as engaging with affordances. Best practices for learning and development in ECE include a balance of teacher-directed and child-initiated experiences in which teacher support children's learning at and within each child's developmental level (Copple & Bredekamp, 2009). Teachers support children's learning by implementing planned activities and using teaching strategies that extend children's thinking during child-initiated activity. Knowledge of affordances within the OLE as part of teaching and learning create the conditions for teachers to effectively support children's learning.

Teachers and children may notice different affordances in the OLE. For example, a child may see a stick as an affordance, as a tool for building, stirring a pot of pretend soup, or as a prop for pretend play. The teacher's perception of the stick might be as a hazard, something that could cause an injury. Another example is a puddle, which teachers may see as problematic because children could get wet, but children may see it as an opportunity to explore water. The mismatch could result in missing a potential teaching and learning experience as well as teachers not experiencing the delight and wonder that children show while outdoors. Despite the differences, both teacher- and child-perceived affordances can be used in the teaching and learning process. But it is the teachers' responsibility to recognize and act upon such opportunities. In order to do so, teachers go beyond the recognizing of the value of children's outdoor experience to intentionally using the OLE to support children's learning. Although the literature has shown teachers recognize the value of children's outdoor experiences, it also shows that teachers may not fully recognize and/or have knowledge regarding the potential for

learning outdoors. There is a gap regarding intentional use of the OLE for teaching and learning. This study contributed to the literature by providing insights to teacher knowledge of and experiences with intentional use of the OLE, specifically using affordances in the teaching and learning process.

Problem Statement

ECE teachers recognize that outdoor experiences play an important role in children's development and learning, yet when that learning environment is shifted from the familiar indoor classroom space to one outdoors, they are challenged by how to use the OLE to support children's learning (Bilton, 2020; Ihmeideh & Al-Quaryoutie, 2016; Tuuling et al., 2016). Teachers have recognized the overall OLE as an enhancement and extension of the indoor environment, but specific aspects of the OLE that hold potential for teaching and learning have not been addressed (Nel et al., 2017). Furthermore, it has been shown that ECE teachers may not fully understand the available possibilities for teaching and learning that exist within the OLE, including child-initiated experiences with affordances (Nel et al., 2017; Tuuling et al., 2019). Thus, a gap was found in the research regarding ECE teachers' intentional use of the OLE for teaching and learning. This investigation of teacher experience with and knowledge of supporting children's learning in the OLE, specifically using affordances for teaching and learning, will add to the literature regarding children's outdoor experiences in ECE settings.

Purpose of Study

The purpose of this qualitative study was to illuminate teacher experiences with and knowledge of supporting children's learning in the OLE, specifically using

affordances for teaching and learning. Though ECE teachers recognize the importance of outdoor experiences in children's development and learning, they are challenged by how to use the OLE to support children's learning (Bilton, 2020; Ihmeideh & Al-Quaryouti, 2016; Tuuling et al., 2019; Zamini, 2016). This study also fills a gap in the research related to ECE teachers' intentional use of the OLE for teaching and learning.

Research Question

Research Question 1: What are ECE teachers' understanding of and experiences with using affordances in an OLE for teaching and learning?

Subquestion 1: What affordances in the OLE do ECE teachers recognize for teaching and learning?

Subquestion 2: What are ECE teachers' experiences in using affordances in the OLE for teaching and learning?

Subquestion 3: How do teachers see children using affordances in the OLE?

Subquestion 4: What do ECE teachers see as their role in design, redesign, and provisioning OLEs to ensure affordances are available and used for teaching and learning?

Subquestion 5: What training and/or support do teachers indicate they need to effectively use the OLE for teaching and learning?

Conceptual Framework

In this study the environment as a place for learning, derived from the Reggio Emilia approach to ECE (Gandini, 1993), was the overarching concept. Gibson's (1979) affordance theory was also a basis for this study, focusing on affordances as individually

perceived opportunities within the environment. Given the individuality of perception and perspectives, teachers and children likely see different affordances in the OLE. Both teachers' and children's perceptions of affordances can result in learning experiences. Dewey's (1997) ideas regarding experiences as part of teaching and learning were also included in the conceptual framework. Additionally, teacher capability in identifying children's developmental level and teaching at that level using child-initiated and teacher-directed experiences is a component of intentionally using the OLE for teaching and learning. Therefore, Vygotsky's (1978) sociocultural theory, specifically the zone of proximal development (ZPD), provided a structure for affordances as part of the teaching and learning process. Thus, the framework for this study was informed by the Reggio Emilia approach to ECE, Gibson's (1979) affordance theory, Dewey's (1997) ideas regarding experiences, and Vygotsky's (1978) ZPD, which will be described in detail in Chapter 2.

Nature of Study

The nature of this study was a qualitative approach. Qualitative approaches are used to gain insight and deeper meaning of a situation, event, or other phenomena (Ravitch & Carl, 2016). Themes and insights regarding ECE teacher thinking and experiences of intentional use of the OLE, specifically regarding affordances, were uncovered with a qualitative approach through interviews with ECE teachers.

Definitions

Affordances: Affordances describe individually perceived opportunities, in accordance with Gibson's (1979) affordance theory.

Early childhood education (ECE): ECE is defined as children birth through 8 years (National Association for the Education of Young Children, n.d.); however, for the purposes of this study ECE was considered children birth through 5 years of age who are enrolled in a program that provides care and education.

Outdoor learning environment (OLE): The term *OLE* was used to describe outdoor settings that include natural elements and contain more than manufactured equipment in which children's learning is a priority (Falk, 2018).

Assumptions

As a current college instructor in the ECE program, I have experience working with teachers because many students are employed in the field. Additionally, my past experiences include teaching young children and coaching/consultation in a variety of ECE settings. These experiences have given me understanding of teachers, classrooms, and children's experiences in an ECE setting, which created assumptions that are pertinent to the study. One such assumption was that teachers may not be aware of or intentional of their actions that support children's learning unless it is a planned game or teacher-directed activity. Teachers may observe and interact with children about affordances outdoors without recognizing that they are doing so. Another assumption was that teachers likely inhibit children's learning from engaging with affordances due to a preoccupation with safety concerns and focusing on supervision. Directly related to participants in the study was an assumption that once teachers learn about affordances, they could have learned about a framework for intentional teaching in the OLE. These

assumptions were addressed with reflexivity (Patton, 2015; Ravitch & Carl, 2016), and I was mindful that the data remained central to the study.

Scope and Delimitations

This study addressed what ECE teachers know about supporting children's learning in the OLE through affordances. This can include designing or redesigning the OLE with affordances, as some ECE teachers have the option of adding materials and changing the environment and some may have participated in outdoor space design. The OLE will be a regularly used outdoor space at an ECE program, most likely part of the facility.

Participants were ECE teachers because they work directly with children. Although administrators may have contributed to the teaching and learning process by influencing design and materials and scheduling outdoor time, they were not included in the study because their involvement is indirect. The decision to draw participants from licensed ECE programs and part-time preschools was made in order to represent programs and teachers who may have less resources, training, and/or education than in public school settings. Doing so helped uncover information that could be valuable for determining training and college course content. Fully outdoor programs, often referred to as forest schools, are specifically designed for learning from nature experiences and are less representative of the majority of ECE teachers and were not included in the study.

Limitations

A basic qualitative approach with interviews was used to gain insight about teacher experiences with and knowledge of intentional use of the OLE for teaching and learning, specifically affordances. The interviews allowed for teachers' voices to be heard but also posed a limitation because there could be a discrepancy between the teachers' interpretation of their experiences and what a trained observer would conclude. The interview questions were designed to elicit answers that portray teacher experiences and actions, but the possibility for differing perceptions exists.

Another limitation was the number of participants. Due to logistics and the basic qualitative design, the study was limited to 15 participants. There was also a limitation due the variety of approaches to ECE. Although child-care licensing regulations are determined by and should be consistent within state, there is considerable variability in how ECE programs fulfill the requirements. Additionally, child-care licensing is regulated by states, which creates variability throughout the United States.

Significance

This study can extend the literature regarding children's outdoor experiences in ECE settings. ECE OLEs and teacher roles in the OLE have been studied, but teacher experience with and knowledge of affordances as part of teaching and learning has not been clear. The results from this study can extend the literature and may inform professional practice, as insights and information regarding teachers' experiences with and knowledge of affordances as learning opportunities can be used to determine content for in-service and pre-service ECE teacher education. The results contribute to an

understanding of ECE teachers' experiences supporting children's learning within an OLE and could be used uncover what is working well and areas for improvement.

Nature and outdoor experiences are beneficial for children's development as well as part of the teaching and learning process in the OLE (Chawla, 2017; Kiewra & Veselack, 2016; Nel et al., 2017; Waters & Batemen, 2015). Training and education can enhance teaching practice and children's experiences in the OLE (Martin et al., 2015). This can lead to positive social change because nature and outdoor experiences promote the well-being of children (Chawla, 2017) and quality ECE experiences impact future academic success, which may reduce the need for special education (McCoy et al., 2017). Furthermore, children's nature and outdoor experiences may result in future environmental stewardship (Broom, 2017; McClain & Vandermass-Peeler, 2016).

Summary

Chapter 1 was an overview of the study regarding ECE teacher experience with and knowledge of supporting children's learning in the OLE, specifically using affordances for teaching and learning. The chapter began with background information. The problem and purpose of the study were then addressed, followed by the research questions, conceptual framework, and nature of the study. The last sections of the chapter included the definitions, assumptions, delimitations, limitations, and significance of the study. Chapter 2 is a literature review of key topics that pertain to the study and a detailed description of the conceptual framework.

Chapter 2: Literature Review

ECE teachers see the importance of using the OLE, but teaching practices are limited (Tuuling et al., 2019; Ihmeideh & Al-Quaryouti, 2016; McClintic & Petty, 2015; Nel et al., 2017; Zamani, 2016). Teachers may not fully understand how to intentionally use the OLE to support children's learning (Leggett & Newman, 2017; Nel et al., 2017; Wishart & Rouse, 2018). There was a need for further research regarding ECE teachers' understanding of and experiences with intentionally using the OLE for supporting children's learning, specifically regarding affordances as perceived opportunities (Gibson, 1979). The purpose of this study was to illuminate ECE teacher experiences with and understanding of supporting children's learning in the OLE through using affordances.

Chapter 2 begins with a description of the literature search, including key words and databases used. Next, the theoretical foundation is described, followed by an explanation of the conceptual framework used as a basis for the research study. The rest of the chapter is a review and analysis of the literature in three major areas: OLEs, children's learning in OLEs, and teacher roles in supporting children's learning in the OLE.

Literature Search Strategy

A literature review of seminal and recent research from the past 5 years was conducted. Articles were found in using the Walden Education, Academic Search Complete, and Ebsco databases. Additionally, Google Scholar and Child Care and Early Education Research Connections were used. The key search words were generated

around the topics of outdoor experiences for young children and early childhood teacher actions in the OLE. The search key words included *benefits of outdoor experiences for young children*, *outdoor experiences in early childhood*, *nature experiences in early childhood*, *young children*, *outdoor learning environments in ECE*, *outdoor learning in ECE*, *ECE teacher roles in outdoor learning environments*, and *early childhood*. The keywords were used individually and in combinations.

Conceptual Framework

The overarching concept for this study was that the OLE is a place that enhances young children's development and is a space for learning. The conceptual framework was derived from one approach to ECE and three theories. The Reggio Emilia approach to ECE includes the key concept that the environment serves in a teaching capacity (Gandini, 1993). Furthermore, children are considered capable of engaging in the environment in a manner that leads to learning and development and the teacher's role is to act as a facilitator and guide (Edwards, 1993). In this approach, the physical space as well as the people within it create an environment that is conducive to learning.

Gibson's (1979) affordance theory demonstrates the connectedness between physical space and people. According to this theory, affordances are individually perceived opportunities (Gibson, 1979). An example is a chair, which could be perceived as an opportunity for sitting or for standing on and reaching something from a high shelf. A tall person and a short person may both see the chair as an affordance for sitting; however, only the short person may see it as something to use to gain access to items that are out of reach. The physical space includes a variety of elements, which can be thought

of as affordances. Some of the elements (possible affordances) in an outdoor space at an ECE program are grass, wood chips, a climbing structure, rocks, trees, and sticks. Similar to the differences in how the tall and short person may perceive a chair as an affordance, children and teachers may see different opportunities within the physical space. The concept of the environment as a space for learning and Gibson's affordance theory work in conjunction in the OLE as both teachers and children can see opportunities for exploration and investigation. Exploration and investigations can create learning experiences.

Dewey's (1997) ideas regarding experiences as productive learning episodes extended the conceptual framework for the study. As described by Dewey (1913; 1997), educational experiences are based on the learner's interests. In this study, the OLE was considered a learning environment that consists of affordances, which can form the basis for educational experiences. The individual perception of affordances (Gibson, 1979) fit into Dewey's idea of interest. An example is a child notices a worm on the wet ground, picks it up, shows her friends, and together they ponder about where it came from and what it eats. The children are interested in the worm and together they raise questions and discuss ideas; they are cognitively and socially engaged. The worm is the affordance in the environment; the observation and discussion about the worm creates an educational experience. Dewey's ideas also included sustained interest with progressive activity on a topic of interest as key aspects of educational experiences. Teachers can observe and assess children's interests and take actions to sustain and extend their explorations and investigations.

The third theory in the conceptual framework for this study was Vygotsky's (1978) ZPD. Teachers are a significant component to ensuring sustained and connected educational experiences for children. Vygotsky described the ZPD as the range in which a child can function with varying levels of assistance to reach independence. Teachers provide assistance that builds on children's interests and creates a progression of educational experiences. The concept of environment as a place for learning, comprised of the physical space and people (Gandini, 1993), forms a basis for the ways in which teachers, as facilitators and guides (Edwards, 1993), scaffold within each child's individual ZPD (Vygostky, 1978). Working within each child's ZPD, teachers facilitate and guide with affordances to create educational experiences (Dewey, 1997). As shown with the worm example, these educational experiences derive from children's interests (Dewey, 1913).

A key concept inherent in this framework was affordance, which is a perceived opportunity (Gibson, 1979). As described by Dewey (1997), interest in the phenomena and a series of connected, active episodes create learning experiences, which was the second key concept in the framework. A third key concept was the ZPD (Vygotsky, 1989), which is the range of independence and assistance to complete a task and/or gain understanding of phenomena. The three concepts came together as a basis to provide a description of teaching and learning in the OLE, specifically the opportunities for learning that were present and the ways in which teachers supported children's learning.

Affordances in the OLE

Environment is a key component to high-quality ECE (National Association for the Education of Young Children, n.d.), and there are affordances in both indoor and OLEs. Affordances are potential opportunities that are based on an individual's perception (Gibson, 1979). A large rock is an example of an affordance; an adult might find it useful for sitting on and a child might see it as a place for climbing or balancing. Indoors, a child-sized chair may be an affordance for sitting or when tipped upside down could serve as a high chair for a doll. Affordances, indoors and out, can be used for teaching and learning. But the OLE offers different affordances than what are available indoors (Kleppe, 2018), and it has been shown that ECE teachers see outdoor spaces as an extension of the indoor environment (Nel et al., 2017; Zamani, 2016). ECE teachers consider the OLE important for promoting physical activity and for sensory and cognitive learning experiences (Wishart & Rose, 2018).

The OLE can provide risk-taking opportunities that are not present in the indoor environment (Kleppe, 2018). The OLE that includes a combination of manufactured equipment and natural materials provided more varied risk-taking opportunities for toddlers (children ages 1 to 3 years) than a natural environment or traditional playground (Kleppe, 2018; Zamani, 2016). The physical affordances are important, although children may not take full advantage of the opportunities without guidance from adults. Teacher involvement and interactions sustains and extends children's physical activity (Bjorgen, 2016). Additionally, people, children and adults, are social affordances (Bjorgen, 2016). Both children and adults can initiate, sustain, and extend engagement with affordances

(Bjorgen, 2016). Physical affordances allow children to engage at individual levels (Bjorgen, 2016; Kleppe, 2018), and the social affordances (people) can extend such experiences. For example, a child puts wood chips and sticks into a bucket. A second child comes along, joins the first child, and suggests making soup. The teacher observes the soup making and intervenes, asking who will eat the soup. The first child uses the affordances of the sticks, wood chips, and bucket but does not make anything. The second child extends by suggesting soup and the teacher further extends both children's thinking by asking who will eat the soup.

The concept of affordances in the OLE has been applied in recent research. A series of studies demonstrated affordances as learning opportunities (Bjorgen, 2016; Kleppe, 2018; Zamani, 2016). The concept of affordances as learning opportunities provides a specific lens from with which to examine children's learning and teacher facilitation of it in the OLE.

Literature Review Related to Key Concepts

OLEs

Outdoor spaces that include natural elements are considered OLEs (Cooper, 2015; Nature Explore Program, 2019). The OLE is of interest to teachers and children and can be a place of learning. Well-designed OLEs that include a variety of play options, open-ended materials, and natural elements are conducive to children's learning and well-being (McClain & Vandermass-Peeler, 2016; Murakami et al., 2018; Olsen & Smith, 2017; Refshauge et al., 2015; Sandseter & Seland, 2016; Smith et al., 2016; Stordal et al., 2015; Strachan et al., 2017; Waters & Bateman, 2015; Wight et al., 2015; Zamani, 2016).

Studies have found that regular visits to an OLE can promote a sense of place and contribute to children's learning and development (MacQuarrie, Nugent, & Warden, 2015; Mereweather, 2015, 2019; Moore, 2015; Murakami et al., 2018; Nel et al., 2017).

Children and teachers appreciate outdoor experiences and desire natural elements in the OLE (Nel et al., 2017). Outdoor experiences are important to children (Mereweather, 2015), and they like being outside over being inside (Norõdahl & Einarsdóttir, 2015). Not only do children value outdoor experiences, they have clear ideas about what they want to when outdoors (Ernst, 2017). Children may want to engage in differing types of play, including risk-taking as long as they perceive it is safe to do so (Norõdahl & Einarsdóttir, 2015). Children have also found freedom, exploration, socialization with peers and adults, and secrets spaces interesting (Mereweather, 2015; Moore, 2015; Norõdahl & Einarsdóttir, 2015; Sandseter & Seland, 2016). Furthermore, children's ideas and voices as well as adult recognition of their competence and capability play a role in supporting children's learning in the OLE (Sandseter & Seland, 2016).

Intentionally designed OLEs are conducive to children's learning (McClain & Vandermass-Peeler, 2016; Moore et al., 2021; Murakami et al., 2018; Olsen & Smith, 2017; Refshauge et al, 2015; Sandseter & Seland, 2016; Smith et al., 2016; Stordal, et al., 2015; Strachan et al., 2017; Waters & Bateman, 2015; Wight et al., 2015; Zamani, 2016). OLE design can be examined in differing ways such as looking at the layout of the space, affordances within the OLE, and the design process. The overall layout of the OLE can support or inhibit the teaching and learning process. Research has shown that teachers see

supervision as a significant role in the OLE (Moore et al., 2021; Nah & Waller, 2015) and have expressed concerns that the layout can pose limitations on seeing children, so the need for extra effort in supervising can arise (McClintic & Petty, 2015). Additionally, there are differing perceptions among teachers regarding the design and use of the OLE for teaching and learning (Nel et al., 2017; Strachan et al., 2017; Zamani, 2016). Nevertheless, the OLE can be a place of learning and provide opportunities for development in all domains (Anggard, 2016; MacQuarrie et al., 2015; Murakami et al., 2018; Nel et al., 2017; Olsen & Smith, 2017; Richardson & Murray, 2017; Sandseter & Seland, 2016; Strachan et al., 2017; Waters & Bateman, 2015; Wight et al., 2015).

The design, affordances, and use of space are interrelated (Refshauge et al., 2015). Similarly, the types of places that children value in an OLE are places to socialize, pretend, move, and observe (Mereweather, 2015). Children also value secret and hidden places and had ideas of what constituted spaces as secret, some of which were unknown by adults (Aminpour & Bishop, 2021; Goodenough et al., 2021; Moore, 2015). The individual spaces as well as the layout can also influence play (Khan et al., 2019; Goodenough et al., 2021); therefore, each area and the OLE as a whole are key considerations for design (Refshauge et al., 2015). For example, the adjacency of areas contributed to or inhibited children's physical activity (Smith et al., 2016). Children who were able to see other children engaged in active play engaged in more physical activity, and those who viewed sedentary play were less active, which may lead to less activity in larger OLEs.

The observation in children's play and engagement in the OLE is also important, specifically in regard to designing spaces and opportunities for close observation as well as getting up high to see the larger view of the environment and affordances within the environment (Goodenough et al., 2021; Mereweather, 2015). OLE design can include opportunities for close and faraway observations by including a combination of natural and manufactured elements, which has been shown to be effective and preferred by both children and adults (Nel et al., 2017; Zamani, 2016). Both close and faraway observations can build on children's natural curiosity and affordances can lead to children observing, exploring, and investigating. The fixed items such as climbers, tree stumps, and rocks allow children to stand and take on a different perspective (Aminpour & Bishop, 2021; Goodenough et al., 2021; Mereweather, 2015; Moore et al., 2021). Seeing things from differing perspectives allows children to get to know the environment and develop a sense of place as well as learn from the changes that occur, seasonally and otherwise (Goodenough et al., 2021; MacQuarrie et al., 2015).

Fixed features are part of OLE design and movable items are also significant (Goodenough et al., 2021; Olsen & Smith, 2017), both of which can be considered affordances. Movable, open-ended items are often referred to as loose parts, a concept and theory introduced by Nicholson (1971) in a seminal article. This theory can be incorporated into the design and elements contained within the OLE. Loose parts as a concept and theory includes moving, manipulating, and creating with materials and such actions are part of the design process (Nicholson, 1971). Nicholson's theory addressed the importance of the inclusion of loose parts in the environment as well as the design

process as an opportunity for learning. Recent studies have confirmed that loose parts are part of a well-designed OLE (Larrea et al., 2019; McClain & Vandermass-Peeler, 2016; Olsen & Smith, 2017). Loose parts create opportunities for close up observations that were previously addressed (Goodenough et al., 2021; Mereweather, 2015). In addition to observation, loose parts create opportunities for pretend and social play (Larrea et al., 2019; Li et al., 2016; Norõdahl & Einarsdóttir, 2015) as well as for scientific inquiry (Wight et al., 2015). Loose parts, in and of themselves, are key components of the OLE; the design process also involves loose parts.

Nicholson (1971) also addressed children's involvement with space design and opportunities for teaching and learning within the process. According to this theory, loose parts are materials for constructive play and working with variables. Similarly, space design is working with materials to plan out (design) and consider variables within the environment. For example, the staff in the study by Khan et al. (2019) study created a series of activities that allowed children to plan and participate in the creation of the OLE. This was a comprehensive process that included visually documenting the ideas by drawing and sketching, and working with the ideas through creating models. By engaging in this process, the teachers and children were working with loose parts and variables in a meaningful design process. The results showed that children were able to use all domains of development (cognitive, social/emotional, physical) while engaging in the design process and in the renovated OLE (Khan et al., 2019). The teachers in this study saw the design process as an affordance for teaching and learning. OLEs can be dynamic places and used for teaching and learning. The design, both as an end product and as a process,

offers opportunities for learning (Khan et al., 2019; Nicholson, 1971; Olsen & Smith, 2017).

Children's Learning in OLEs

Similar to the concept as the environment as the third teacher in the Reggio Approach (Gandini, 1993), the OLE is place for learning. A literature review by Mustapa, Maliki, and Hamzah (2015) showed that children grow, develop, and learn in all domains of development through engagement in the OLE, which was supported in a study by Yildirim and Akamca (2017). Similarly, Sobko et al. (2018) found that parents perceived connections with nature supported their children's overall health, as did the parents in the case study in China by Wang et al. (2017). The literature review by Mustapa, et al. (2015) also revealed that the quality was a contributing factor for supporting children's development in an OLE, thus, as established in the previous section, OLE design is a key factor in creating the conditions in which children learn. Miranda et al. (2017) underscored the importance of the OLE as a place for learning and how it has been overlooked and underused. Norling and Sandberg (2015) concurred and extended this idea by adding in that there is a lack of teacher reflection regarding the OLE as a place for children's language learning. In a small study by Bilton (2021), findings indicated that the participants valued and supported children's learning in the OLE but their co-workers were seen as a barrier to doing so. If the OLE is not well-designed, is undervalued, and/or misunderstood, there may be missed opportunities for teaching and learning.

One way to analyze and understand the OLE as a place for learning is to use the concept of affordances (Gibson, 1979). As previously addressed, affordances can be described as individually perceived opportunities. Heft (1988) described and used Gibson's (1979) affordance theory as a way of seeing an environment beyond just as physical features—to look at the environment in terms of what a person can do in it. Additionally, Heft (1988) created a taxonomy of children's outdoor environments by classifying environmental elements by functionality, specifically what type of activity each classification affords. There are 10 classifications: flat, relatively smooth surface; relatively smooth slope, graspable/detached object; attached object, non-rigid, attached object, climbable feature, aperture, shelter, moldable material, and water (Heft, 1988). A small rock would fit into the graspable, detached object category and could be used for throwing, hammering, or building. It also could be considered a loose part (Nicholson, 1971. A large rock could fit into the climbable or aperture categories, either for climbing on and/or for being able to see in the distance from a higher point. Another graspable/detached object is a stick, which can be used for building, pretending, or walking. Each example shows opportunities for children's growth and development and the taxonomy allows for organized analysis of the environmental features as affordances for learning.

Heft's (1988) taxonomy is useful for considering teaching and learning in the OLE and it has been revisited in recent research. Lerstrup and Konijnendijk van den Bosch (2017) conducted a study in Danish preschool environments, specifically to address the terminology regarding affordances in OLEs. The findings resulted in a

revision of Heft's taxonomy, which included adding two new classifications, creatures and fire, as well as additional considerations. The additional considerations were the influence of people and the space, and the characteristics that are present in each category (Lerstrup and Konijnendijk van den Bosch, 2017). Other people, such as peers and teachers in the OLE, can be considered an affordance (Bjorgen, 2016; Gibson, 1979) for socializing as well as supporting and scaffolding learning. Lerstrup and Konijnendijk van den Bosch (2017) raised the point that the OLE as a space contains all other affordances. This fits in with the findings from other researchers (Aminpour & Bishop, 2021; Goodenough et al., 2021; Moore et al., 2021; Refshauge et al.; 2015); & Smith et al., 2015) regarding importance of the overall design of the OLE, as the space holds all affordances (opportunities) for learning, including the people that are use it.

Besides people and space, the findings by Lerstrup and Konijnendijk van den Bosch (2017) also revealed that there are four characteristics that are consequential in each of the categories: variation and uniqueness, sizes and gradation, novelty and change, and abundance. Other authors have addressed the importance of variety and novelty (McClain & Vandermaas-Peeler, 2016) as well as size and height (Goodenall et al., 2021; Mereweather, 2015) as promoting learning and engagement for children, therefore these characteristics are relevant and useful considerations when using the revised taxonomy to analyze children's learning in the OLE. Although not specifically addressed in other studies, the idea of the amount of any one affordance or affordances in general is noteworthy. Lerstrup and Konijnendijk van den Bosch make the point that if there is not

enough of one type of affordance, such as sticks or rocks, it can limit learning opportunities. Likewise, the total amount of affordances in the OLE can reduce learning.

Kyttä (2004) used Heft's (1988) taxonomy and extended the idea of functionality regarding affordances by describing actualized and potential affordances. According to Kyttä, potential affordances exist in a space and can be seen by individuals who use the environment; when a person engages with or uses the affordance, it becomes actualized. Previously, rocks (small and large) and sticks were used as examples of types of affordances in Heft's taxonomy. Kyttä concept of potential and actualized affordances can be applied to the examples of rocks and sticks. A four-year-old may notice a large rock and perceive it as a place for climbing, but may be engaged in a pretend play episode with sticks as fire hoses and does not use the large rock at that time. In this instance, the large rock is a potential affordance while the sticks are actualized. The fire play episode may evolve in a way the firefighters need to go on a higher level and the four-year-old tells his friends to climb on the rock to fight the fire, thus the large rock changes from a potential to an actualized affordance.

Affordances in the OLE create opportunities for teaching and learning. Children grow, develop, and learn through active experiences such as child-initiated play, exploration, and investigation. Miranda et al. (2017) described involvement as an indicator of learning and findings of the study showed that when children engaged in social play they were more involved. Similarly, Storli and Sandseter (2019) addressed play and involvement as an aspect of well-being. Additionally, these authors found that the amount of time children play is the same indoors and out, but that differing types of

play such as active, constructive, and symbolic tend to occur more often outdoors. Additionally, the findings by Bateman (2021) described toddler risk-taking as it relates to well-being. This indicates that the OLE is a place of learning with differing affordances for children's learning through active experience (Sandseter et al., 2020, 2021; Yilddrim & Akamca, 2017).

Harris (2017) conducted a study in a forest school, which can be considered a specific type of OLE in which the children spend most or all of their time outdoors. Similar to other researchers, (Nel et al., 2017; Stori and Sandseter, 2019; Zamani, 2016), Harris found that children's play and engagement was different in the OLE with the primary means of learning through child-initiated play, exploration, and investigation. Furthermore, the results in Harris' study showed that children's experiences in the OLE enhanced what happened in the indoor environment. These studies show that the OLE is important for children's growth, learning, and development. The next subsections will address how experiences in the OLE support growth in the differing domains of development.

The OLE and Children's Physical Development

Engelen et al. (2018) also found that children's play in OLEs is different from what happens indoors. These authors found that additional types of play occurred in the OLE. In the study, loose parts were the variable that led to increased engagement in differing types of play and more physical activity. Hyndman et al., (2017) also found that loose parts contributed to more creative play and imaginative physical activity.

Furthermore, these authors found that this type of play allowed children to meet health and physical activity goals.

Loose parts are one type of affordance in the OLE. As described earlier, the OLE is also an affordance and it can set the stage for and include equipment that encourages physical activity (Arvidsen et al., 2019). The results of a study by Khan et al. (2019) showed that children engaged in more physical activity in renovated OLEs, thus the design in and of itself is an affordance for supporting physical development. Storli and Sandseter (2015) found that teachers allowed children to engage in more rough-and-tumble play, a specific type of physical activity, in the OLE than within the indoor environment. This reinforces the previously addressed finding that the OLE is different from and an enhancement to the indoor classroom, specifically in regards to physical development.

The OLE supports physical development, however the duration and play episodes may also be important. Shorter, more frequent periods of play in the OLE have been shown to result in more physical activity (Razak, et al., 2018). This study addressed moderate-to-vigorous activity, which may or may not include rough and tumble and other types of physical play. Therefore, the OLE, along with the duration and frequency of time spent within it, are aspects that are significant for supporting children's physical development.

Risk-taking can be a part of physical activity. Lavrysen et al. (2017) used a description of risk that included seeing a risky situation and doing one of the following: engaging, changing it so it was less risky, or choosing not to engage. An example of how

children may engage in the OLE with affordances for risk and physical development is with a large, stationary log. A child may see the log as an affordance for climbing and balancing and decide one of the following: climb onto the log and walk across it, climb on the log but just sit, or ignore the log as a feature for climbing and balancing. In this example, the presence of the log in the OLE is either an actualized or potential affordance (Kyttä, 2004) for physical development, depending on the child's decision of what to do or not do with the log.

The description of risk-taking and the example show that children make decisions about engaging in risky, physical activity. Differing types of affordances allow for risk-taking and physical activity, and, engaging in such experiences may have a positive emotional effect (McClain & Vandermaas-Peeler, 2016). The next section will address social-emotional development in the OLE.

The OLE and Children's Social–Emotional Development

As previously addressed, risk-taking is often associated with physical activity and includes the emotional domain. The description used by Lavrysen et al. (2017) shows that children assess risks and such assessment requires an understanding of oneself. The log example from the previous section describes a child seeing a risky situation, however, what constitutes risk? The answer is determined by an understanding of oneself, including one's skills and the emotional wherewithal to take risks. A child who lacks confidence and willingness to take risks may not see the log as an affordance for climbing or balancing, rather the opportunities are blocked by an unwillingness to take such a risk. Another child may be very willing to take risks, have limited physical skills

yet a clear understanding of her developmental level, and make the decision to try to climb the log. If, while climbing the log the child discovers strategies such as foot placement and makes it to the top, the child has learned more about herself physically and has had a positive experience with risk-taking. In the OLE children determine their own risk level, undertake risks, and gain greater understanding of themselves (Bento & Costa, 2018; McClain & Vandermaas-Peeler, 2016; Laverysen et al., 2017).

Motivation and interest to engage in experiences are also part of the emotional domain. At this point it is useful to distinguish the difference between activity and experience. Activity is defined as being active; experience involves a personal connection (Merriam-Webster's Collegiate Dictionary, 2005). It is also useful to revisit Dewey's (1913; 1997) theory, specifically regarding interest and experiences that build on one another as key aspects of learning. It has been found that children are interested and motivated in the affordances in the OLE (Bento & Costa, 2018) and differing sensory experiences can be motivating for engagement (Brown, 2017). In the previous log example, the child with limited skill but emotional wherewithal to take risks showed interest and motivation in the log as a climbing affordance; future attempts to climb will make the experience educational (Bento & Costa, 2018; Brown, 2017; Dewey, 1913; Dewey, 1997). Furthermore, Bento and Costa (2018) found that the OLE supported the development of autonomy and independence. Thus, the OLE is a place in which all children can advance emotional development.

Other aspects of emotional development include self-regulation and resilience. In a small study conducted in Minnesota the results pointed to nature preschools as

supporting self-regulation and overall social/emotional development as it relates to resilience (Ernst et al., 2019). Similarly, Carrus et al. (2015) found that being outdoors and around nature seemed to counteract stress and build emotional reserves. Perhaps related to the findings on self-regulation and resilience is the evidence from studies that show there is less conflict among peers (Bento & Costa, 2018) and increased engagement and positive social behavior (Carrus, et al, 2015) in the OLE than in indoor environments.

Less conflict and more socialization create the conditions for relationships which are also supported in the OLE. Bento and Costa (2018) found that children interacted with one another in the OLE. Affordances, such as gardens and loose parts have been found to create opportunities for socialization and interactions among peers and between teachers and children (Bateman, 2021; Vandermaas-Peeler & McClain, 2016). The results from a study by Larrea et al., (2019), showed that affordances in the OLE contributed to social play, including loose parts being used in such play. When comparing previous and re-designed OLEs, children thought there was more to do and more peers to interact with in the re-designed OLE. Furthermore, Viega et al. (2017) conjectured that engagement in the OLE may be a key to building social competence.

Additional considerations for social/emotional development in the OLE include positive emotions and overall well-being. The OLE can bring about calmness and positive emotions (Vandermaas-Peeler & McClain, 2016). Teachers thought that space and freedom contributed to adults' positive feelings, which may be the reason they interacted more with children during free play (Bento & Costa, 2018). Although the study by Brown (2017) was conducted with adults, findings regarding the sensory experiences

of differing terrain as pleasurable, engaging, and informative regarding one's own body may be applicable to children. These findings indicate that experiences with affordances such as terrain promote overall positive emotions and well-being. Related concepts such as ownership, sense of belonging and place, and pride have also been supported in the OLE (Casey et al., 2019).

Children's social/emotional development is supported in the OLE. Additionally, it is also beneficial to recognize the interrelatedness of the domains. Physical activity such as running has been associated with social development and competence (Viega et al., 2017). In the next sub-section, cognitive development will be addressed starting with the emotional aspects of focused attention and sustained engagement.

The OLE and Children's Cognitive Development

Cognitive development is supported in the OLE (Ulset et al., 2017). Focused engagement and sustaining involve self-regulation and at times interacting with others, but are also a part of cognitive development. Li et al. (2018) found that children on the Autism Spectrum Disorder (ASD) were interested and able to sustain better outside than while indoors. Kiewra and Veselack (2016) found that creativity, which requires cognition (Isbell & Yoshizawa, 2016) is supported the OLE when children are allowed focus and sustain their efforts. Similarly, Carrus et al. (2015) found that nature and being outdoors led to more on task behavior.

ECE teachers in one study conducted in the southeast region of the United States have noticed that the OLE creates challenges and opportunities for cognitive development (Vandermaas-Peeler & McClain, 2016). Children notice and observe

seasonal, weather, and other changes, which sets the stage for using children's interests and curiosity as a basis for science inquiry and learning about nature (Beery & Jorgensen, 2018; Bento & Costa, 2018). Gardens, an affordance in the OLE, create opportunities for inquiry and math learning (McClain & Vandermaas-Peeler, 2016). Other affordances can also support math (Bento & Costa, 2018) and as children engage with the affordances and each other they ponder, discuss, debate about math (Sumpter & Hedefalk, 2015).

Discussions in the OLE about science, math, and other topics also promote language development and communication skills as children interact with one another (Norling & Sandberg, 2015). Such discussions can extend to literacy development. Bento and Costa (2018) reported children using sticks to make letters and Sarah, a forest school teacher in the Pacific Northwest (S. Heller, personal communication, October 24, 2019), described mud as an affordance for writing names and other letters.

In addition to discussions about science and math and the other literacy activities, the OLE sets a context for complex play (Zamani, 2017). Loose parts and natural materials can be used in pretend play (Beery & Jorgensen, 2018). Such materials have been found to lead to more complex play, which requires sustained, focused attention while materials that are too realistic and/or the lack of loose parts has been shown to limit play (Morrissey et al., 2017). Although the affordances such as materials contribute to complex play, one study pointed to other contributing factors, such as where the play happens and found that a somewhat secluded area may be the reason for sustained, focused engagement (Morrissey et al., 2017). Nevertheless, play and other experiences such as science inquiry occur in the OLE.

Experiences in the OLE are also rich for supporting children's individual development. Children with disabilities may perceive and experience affordances differently than typically developing children (Huessein, 2017). To illustrate these differences, consider two children sitting on the ground, one who can see and the other who is blind. They are playing with rocks, sticks, and buckets and a spider appears. One child can see it and the other may feel it if it walks on her hand. Another example is with verbal interactions. A child with language delays may not initially engage in a conversation about the spider about where it is going, how fast it is crawling, and/or its size, however may do so with teacher support and guidance. Although the perception and experiences with the spider are different, the spider is an affordance that can be actualized for each child (Broom, 2017; Kyttä, 2004). The child with limited vision can use feeling to determine size and speed, or, her peer can describe in words, which supports language development as well as addressing science and math content of speed, size, and number if legs of the spider were part of the conversation. The spider is a topic to talk about for the child with language delays; for a child with limited social skills it presents an opportunity for interactions with peers. The spider affordance is similar to what was referred to as devices (ropes, ladders) used in an adventure program and found to be beneficial for children on the autism spectrum (Zachor et al., 2016).

In addition to cognitive development, the OLE offers opportunities for learning about the environment and natural world. Being outdoors can foster an appreciation of nature and the natural world (Beery & Jorgensen, 2018; Bento & Costa, 2018; Broom, 2017; Jorgensen, 2016; McClain & Vandermaas-Peeler, 2016). When children have

active experiences in the same space over a period of time, they may develop a sense of place and can learn about nature and the natural world (Beery & Jorgensen, 2018; McClain & Vandermaas-Peeler, 2016). The OLE is a place of learning and it can support development for each and every child, however ECE teachers are significant in the teaching and learning process. Teachers may be considered affordances and their roles in the OLE will be addressed in the next section.

Teacher Roles in Supporting Children's Learning in OLEs

A primary responsibility for ECE teachers is to develop and implement curriculum that supports each and every child's development and learning. Teachers value children's nature and outdoor experiences, yet struggle to support learning in the OLE (McClintic & Petty, 2015; Nel et al., 2017). A resounding theme in the literature is the issue of safety, with some teachers seeing supervision as their primary role (Ihmeideh & Al-Quaryoutie, 2016; Kemp & Josephidou, 2021; McClintic & Petty, 2015; Sandseter & Sando, 2016). This may be due to societal values (Sandseter & Sando, 2016; Skar et al., 2016), which can influence policies at the national and program level. In some studies, teachers expressed concern over policies and found they were restrictive to children's experiences as well as put pressure on adults to emphasize safety rather than learning (Mawson, 2014; Sandseter & Sando, 2016). Thus, the literature shows that there is an emphasis on safety and supervision as a primary responsibility for ECE teachers.

Teacher beliefs and values are an influence and potential barrier to supporting children's learning in the OLE. As noted previously, teachers in several studies believed their primary role was supervision to ensure safety (Ihmeideh & Al-Quaryouti, 2016;

McClintic & Petty, 2015; Moore, 2015; Nel et al., 2017). This belief translated into practice and teachers spent the majority of their time supervising rather than supporting children's learning, which reduced the opportunities for instruction. In some studies, the teacher practice of supervision was also related to the belief that outdoor time was for recess rather than for learning (Ihmeideh & Al-Quaryoutie, 2016). Related to supervision and safety is the belief and values regarding risk-taking as part of learning. Sandseter & Sando (2016) found that safety was emphasized in policy and practice, however some teachers resisted such constraints due to an understanding of the benefits of risk-taking.

Although safety is a priority, the balance between risk-taking and keeping children safe is a teacher role and responsibility (Bateman, 2021; Bilton, 2021: Sandseter & Sando, 2016). As previously addressed, risk-taking happens in physical activity and is a part of learning and development in all domains. Children take risks to try out new ideas, enter into play episodes, and engage in physical activities. Some cultures, such as in Norway, recognize and value risk, although cultural values seem to be shifting toward a more cautious approach (Sandseter & Sando, 2016). Reasons for emphasis on safety vs. risk taking vary, however in some cases it stems from perceived dangers. Coupled with the increased use of technology, the reduction in risk-taking behaviors can impact children's development (Nel et al., 2017; Sandseter & Sando, 2016). Therefore, one of the ECE teacher roles is to understand the value of physical activity and risk-taking and offer opportunities for it in the OLE (Bateman, 2021; Bjorgen & Svendsen, 2015).

Children's selection and invention of secret spaces is related to risk-taking. In such spaces, adult supervision is minimal and they are completely child-initiated and

managed (Aminpour & Bishop, 2021; Moore, 2015). Children seek out such spaces for respite from groups and out of personal interest. OLEs offer opportunities to create such spaces, either within or outside of adult view and children use these opportunities, often without teacher knowledge (Aminpour & Bishop, 2021; Moore, 2015). Children value these spaces and as shown by Moore (2015), have a clear sense that teachers and other peers are unaware of these spaces, thus making them secret. This creates an interesting juxtaposition given teachers' view one of their primary roles is to supervise and ensure safety, yet children are finding secret spaces that are hidden (even if in plain sight) from adults. Perhaps the importance of secret spaces is not recognized by teacher and therefore goes unnoticed, which brings back the teacher role of knowing about and balancing risk-taking and safety.

Secret spaces are one beneficial aspect of the OLE that seems to elude ECE teachers. Another aspect is using the OLE to its full potential. Martin et al. (2015) found that professional development increased teachers' use of instructional interactions in the OLE. Nel et al. (2017) uncovered teacher lack of knowledge regarding using the OLE for children's sensory and motor development. Although teachers see the OLE as a space for physical activity, it is not used for intentional instructional activities (Nel et al., 2017).

Several studies have indicated a need for ECE teacher professional development, either in-service or pre-service regarding the intentional use of the OLE for ECE curriculum and instruction (Ihmeideh & Al-Quaryouti, 2016; Kemp & Josephidou, 2021; Martin et al., 2015; McClintic & Petty, 2015; Nel et al., 2017; Sandseter & Sando, 2016). Knowledge and skills are needed for using teacher roles to support children's learning. In

order to effectively employ differing teacher roles in supporting children's learning in the OLE, teachers need an understanding that goes beyond awareness that outdoor and nature experiences are beneficial for children's development to the knowledge and skills for intentional use of the OLE for teaching and learning. With training and instruction teachers were able to implement the teacher role of engaging in instructional interactions to encourage and support children's play (Martin et al., 2015). Similarly, other studies have shown that professional development was needed for supporting children's learning in the OLE (Ihmeideh & Al-Quaryouti, 2016; McClintic & Petty, 2015; Moore, 2015; Nel et al., 2017). Thus, teacher training and professional development can reduce the barrier of teacher knowledge and skill for intentional use of the OLE in the teaching and learning process.

Additional barriers such as weather can create challenges for using the OLE for teaching and learning, therefore another teacher role may be to address such issues, and, when possible, use them to support children's learning (Elliot, 2021). Weather can provide affordances such as rain, snow, and wind. In some climates weather is harsh, such as in the Midwest region of the United States during winter or desert areas of the world with extreme heat. In such climates, weather can be a true barrier for outdoor experiences (Nel et al., 2017). Affordances in the environment, such as trees for protection from the sun, as well as winter apparel may reduce these types of barriers. Additional factors in regards to weather as a barrier is the perception of what constitutes harsh weather and/or the ways in which weather can alter the environment. Weather can influence teacher roles and the wherewithal to follow child-initiated exploration and

investigation. Puddles, snow, wind, leaves, and other such natural elements are interesting to children; the observant and skillful teacher can capitalize on these learning opportunities (Elliot, 2021; Omidvar et al., 2019).

Intentional design and affordances in the OLE have been previously addressed, however teacher thinking and pedagogy impacts the recognition and incorporation of affordances for teaching and learning. Recognition and incorporation of affordances highlights the complexities in the teaching and learning process. Affordances can be used for extending learning from child-initiated experiences (Sandseter & Sando, 2016), thus a teacher role is creating the conditions for children's actualization of affordances (Kyttä, 2004). The studies by Bilton (2021) and Moore (2015) addressed the influence of teacher thinking and pedagogy, including understanding children's perspectives, as teacher roles in the OLE. All teachers, especially with professional development and training, can go beyond the perceived primary role of supervision and safety (Ihmeideh & Al-Quaryouti 2016, Kemp & Josephidou, 2021; McClintic & Petty, 2015; Sandseter & Sando, 2016) to intentional use the OLE for teaching and learning (Moore, 2015).

Summary

In this chapter, recent research along with seminal studies were reviewed. The chapter began with an explanation of the conceptual framework, which was used as a basis to review key concepts related to the study. Literature related to the key concepts of OLEs, Children's Learning in the OLE, and Teacher Roles in Supporting Children's Learning in OLEs comprised the rest of the chapter. This review showed the benefits of children's experiences outdoors, the importance of a well-designed OLE, and a summary

of the teacher's role in supporting children's learning outdoors. The concept of affordances (Gibson, 1979) is addressed in recent research. The review revealed a gap regarding teacher knowledge of and experiences with intentional use of the OLE, specifically using affordances in the teaching and learning process. This study investigated this gap in the literature through a qualitative approach, which is described in Chapter 3.

Chapter 3: Research Method

The purpose of this study was to illuminate ECE teacher experiences with children's learning in the OLE by using affordances for teaching and learning. Chapter 3 is a description of the research method. The first section will address the research design and rationale for selecting it. The following sections describe the researcher role, methodology, trustworthiness, and pertinent ethical issues.

Research Design and Rationale

A basic qualitative research approach with interviews was used in this study regarding teacher intentional use of the OLE for teaching and learning. Qualitative research can be used to gain insight and deeper meaning of a situation, event, or other phenomena (Ravitch & Carl, 2016). The main research question was designed to illuminate teacher understanding of and experiences with using the OLE for teaching and learning, which uncovered insight and deeper meaning. The subquestions related to affordances teachers recognize and use, how they see children using affordances, what they see as their role in designing OLEs to ensure affordances, and what training they need to use OLEs. A quantitative approach would not have been appropriate because it would not have generated data from teachers' thinking and ideas. The basic qualitative design was chosen over other qualitative methods because it allowed for ECE teachers' voices to be heard but did not limit to a specific program or situation, require any length of time, or include other data collection procedures such as observations, as would other approaches such as case study or ethnography (Merriam & Tisdell, 2016; Patton, 2015).

Role of Researcher

The role of the researcher is significant; the researcher determines the topic, focus of the study, and design. The data that are collected and analyzed are also influenced by the researcher's experiences and biases that should be made transparent to the readers (Merriam & Tisdell, 2016; Patton, 2015; Ravitch & Carl, 2016). It is the ethical responsibility of the researchers to describe their relationship with the participants and address biases as they relate to the study. In this section my relationship with the participants, professional roles, and related biases are described to provide transparency.

The study regarding ECE teacher intentional use of the OLE for teaching and learning was conducted by me as a PhD student at Walden University. I currently work in the ECE field and have for over 20 years in differing capacities: teaching young children, consulting, and teaching college courses. Experiences in these roles has led to my familiarity with ECE teaching practices and the wide variety of programs and environments in the field. Furthermore, I taught a college course on children and nature for 7 years and have designed and assessed assignments related to the research topic. It is possible that I had worked with three of the participants in the past, as one as a coach and two as a college course instructor. These relationships were from previously held positions that were not supervisory roles and the college courses were completed; thus, all previous positions of power have been terminated.

I bring knowledge and ideas regarding ECE teaching, teachers, and environments to the study—a bias about teaching practices in the OLE. Therefore, I was attentive and careful to allow the participants' voices and ideas to remain central to the data. Another

way to consider this bias is in terms of power. Quality in the research process is preserved by ensuring power is not only held by the researcher and that the participants are considered authority figures with valuable contributions (Ravitch & Carl, 2016). Because the purpose of this study was to illuminate teacher experiences, it was important to ensure the data, not my ideas, were at the heart of the collection and analysis process.

Methodology

Participant Selection Logic

The targeted group of interest for this study was teachers who work in ECE. Teachers have direct experiences with and knowledge of teaching and learning in the OLE. Furthermore, teachers know the children and can speak about their interests and engagement in the OLE. Purposeful sampling was used to identify participants who have information to help answer the research questions (Ravitch & Carl, 2016). Purposeful, convenience sampling was used to identify 12 participants who met the inclusion criteria. Convenience sampling was employed to address the potentially large number of participants and limit the sample size to 12 (Merriam & Tisdell, 2016). Teachers from ECE programs in the Pacific Northwest were invited to participate, and the first 12 who identified themselves as meeting the inclusion criteria were selected as participants.

There were several inclusion criteria. The criteria for participation in the study are as follows: teachers who currently work in an ECE program and have done so for a minimum of 1 year; the ECE program must serve children 1, 2, 3, 4, and/or 5 years old and can be full- or part-day, Head Start, or any other type of ECE program that has an outdoor space that teachers take children to at least four times a week for a minimum of

30 minutes an outdoor session; and the program is within a 50 mile radius of an urban setting in the Pacific Northwest region of the United States. If a person did not meet one or more of the criteria, they were not eligible to participate in the study.

Theoretical and data saturation were addressed during data analysis as patterns and themes were identified (Guest et al., 2006; Merriam & Tisdell, 2016; Patton, 2015). Themes and patterns did emerge, therefore a snowball sampling technique (Patton, 2015) was not used to identify additional participants to generate saturation.

Instrumentation

A common data collection method in the basic qualitative approach is interviewing (Merriam & Tisdell, 2016; Patton, 2015; Ravitch & Carl, 2016). The interview questions will be designed by the researcher to address the research questions. The conceptual framework includes the overall concept of the OLE as a place of learning (Gandini, 1993) and the teacher responsibilities to create and support children's learning based on the theories of affordances (Gibson, 1979), purposeful experiences (Dewey, 1997), and the ZPD (Vygotsky, 1978). This framework was used as a basis to design questions that uncover teacher experiences and actions in and knowledge about the OLE (Patton, 2015). The Interview Protocol (see Appendix A) was developed with two out of the six types of questions described by Patton (2015): experience and behavior, and, knowledge questions. These types were chosen because they directly fit with the conceptual framework and key research question.

ECE teachers may not be aware of their actions that support children's learning in the OLE, including affordances as opportunities for teaching and learning. A basic

qualitative approach using interviews with experience and behavior as well as knowledge questions as the data collection method allowed teachers, as participants, to describe what they do when outside with children and their thinking about the OLE and generated data to sufficiently answer the research questions and it allowed for the participant's ideas to remain the central focus (Patton, 2015) of the data. The Interview Protocol (Appendix A) provided consistency and it was used with all participants, yet the open-ended nature of the questions, developed and aligned with the research design, establish credibility (Patton, 2015; Ravitch & Carl, 2016) allowed them to share ideas. Additionally, data analysis in basic qualitative research allowed for emergent themes which uncovered information that provided insight regarding ECE teacher knowledge and actions for supporting children's learning outdoors, which can add to the literature on intentional use of the OLE for teaching and learning.

Procedures for Recruitment, Participation, and Data Collection

Purposeful sampling (Ravitch & Carl, 2016) was used to identify ECE programs in the Pacific Northwest. The researcher selected programs from the list and asked administrative staff for permission to invite teachers to participate. Invitations to participate were sent to all teachers, who will self-selected based on the inclusion criteria, their willingness, interest, and availability to participate. The first 12 teachers who met the criteria were selected and all followed through with the interview process. Participants were given written information about the study, including options for exiting the study at any time.

Data were collected over the course of seven months through individual electronic (Zoom) interviews with each participant, conducted by the researcher. Interview questions and protocol (Ravitch & Carl, 2016) were designed by the researcher to elicit participant description of experiences in and knowledge of supporting children's learning in the OLE, specifically with affordances. Interviews allowed for participants to talk about what they do and know which generated data that was used to gain insight and meaning regarding intentional use of the OLE for teaching and learning (Ravitch & Carl, 2016; Rubin & Rubin, 2012). The interviews were recorded, transcribed, and each participant reviewed the transcriptions for accuracy. After reporting via email regarding the accuracy of the transcription, the interviewees received a response thanking and informing them that their participation in the study had concluded, along with a $20 amazon.com gift card.

Data Analysis Plan

Each interview was recorded with the Zoom digital recording tool. The recordings were transcribed by the researcher into a word processing document. The transcription was used in a manual (no software) iterative data analysis process to identify codes, categories, and themes (Patton, 2015; Ravitch & Carl, 2016; Saldaña, 2016). Codes which are short, descriptive phrases were assigned through first and second cycle coding process described by (Saldaña, 2016). Codes were sorted and synthesized into sets of similar items, creating categories. The categories were analyzed for broader themes that were descriptive of the participants' (as a whole) experiences with and knowledge of supporting children's learning in the OLE (Ravitch & Carl, 2016; Saldaña, 2016).

The data analysis process began with the first interview transcription. Data were organized using Microsoft Word tables that include codes, categories, and themes as well as separate documents for analytic memos were written throughout the process (Merriam & Tisdell, 2016; Patton, 2015; Ravitch & Carl, 2016; Saldaña, 2016). The analytic memos included my thoughts and ideas as the data was collected and analyzed (Ravitch & Carl, 2016: Saldaña, 2016). I engaged in multiple readings and manually created codes and categories, and went through a cyclical process to identify emergent themes and any possible unique, discrepant ideas that did not fit into a theme but were important for gaining insight and understanding about ECE teacher experiences with and knowledge of intentional use of the OLE for teaching and learning (Ravitch & Carl, 2016).

Issues of Trustworthiness

Trustworthiness is important for the audience who is reading and possibly using the study as well as for supporting the efforts of all qualitative researchers (Lincoln & Guba, 1985; Shenton, 2004; Tracy, 2010). Researchers can use the four criteria of credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985) to establish trustworthiness. This section is an exploration of how each of these concepts were employed in the study regarding ECE teacher experience with and knowledge of supporting children's learning in the OLE, specifically using affordances for teaching and learning.

Credibility is whether or not a study addressed the intended phenomena (Lincoln & Guba, 1985; Shenton, 2004). For a study to be of use to readers, it should provide insight and answer the research questions. Shenton (2004) described the strategies of

alignment of phenomena and research approach and doing member checks. In this study, there was careful attention to the alignment of the purpose, research questions, qualitative approach, and the planned data collection and analysis procedures. Member checks were used as a method to determine if the data collected were an accurate depiction of the participants' ideas and thoughts (Merriam & Tisdell, 2016; Ravitch and Carl; 2016). Member checking was done by sending the transcription of the recorded interview to each participant via email with a request to review it for accuracy. The member check was listed in the Consent Form as part of the responsibilities of the participants.

Transferability was addressed by providing thick description (Lincoln & Guba, 1985; Merriam & Tisdell, 2016;). Patton (2015) described intentionality with detailed descriptions as a means for interpretation. Detailed descriptions were as a basis for analysis and provided the reader with the necessary contextual information from with which to draw conclusions about the study as it relates to other situations.

Dependability and confirmability were addressed through reflexivity and an audit trail (Lincoln & Guba, 1985; Shenton, 2004) was kept. Ravitch and Carl (2016) described reflexivity as an ongoing process of examining oneself as a researcher conducting research within a context. Patton (2015) emphasized reflexivity as a method of deeply understanding oneself, including thinking and meaning-making within the research process. Throughout the study, memos will be written and kept as a method for engaging in reflexivity.

Ethical Procedures

Before engaging in the study and collecting data all institutional requirements, including approval from the Institutional Review Board (IRB) (approval number 09-04-20-0558657), was completed. Written informed consent from each participant was collected and it included information regarding participation, choosing not to participate, and withdrawing from the study. Additionally, the identities of the participants remained confidential by use of pseudonyms. Electronic data is stored on a private computer that is password protected. Any hard copies are stored in a locked file cabinet and will be destroyed five years after the dissertation has been published.

Ethical concerns were addressed during the recruitment process. The initial contact was to the ECE program's administrative staff. Once permission to contact teachers was obtained, teachers were invited but not pressured (Rubin & Rubin, 2012) to participate. Interviews were conducted at a time and location (Zoom) that was convenient for participants.

Summary

The research methodology for the study regarding ECE teacher experiences with and knowledge of supporting children's learning in the OLE, specifically using affordances for teaching and learning has been described in this chapter. The rationale for selecting a basic qualitative design with interviews was addressed. Other related information including the role of the researcher, participant selection, data collection, and establishing trustworthiness was also addressed.

Chapter 4: Results

The purpose of this study was to illuminate ECE teacher experiences with and knowledge of supporting children's learning in the OLE through affordances. A main research question with several subquestions were designed and used to gather information from teachers on their understanding and experiences with affordances, the affordances they recognize, how they see children using affordances, what they see as their role in designing OLEs to ensure affordances, and what training they need to effectively use OLEs. Chapter 4 is a description of the findings from the study. It starts with a brief description of the setting, the participant demographics, and data collection procedures. The next sections are an explanation of data analysis procedures, trustworthiness and the results of the study, followed by a summary.

Setting

At the beginning of the study one partner organization was selected, but due to lack of participants more organizations were added during the data collection phase. Data collection began in early September, the same time as the start of the academic year for elementary school children. The partnering organizations were not elementary schools; however, many provide before/after care for school age children. Due to COVID, many ECE programs shifted to providing childcare and support for children doing remote school. This shift created new challenges for teachers and administrators with setting up remote classrooms, ensuring new health guidelines were followed for the additional children at the program, learning new technology used by the various public schools, track the schedules for children attending different remote schools/classrooms, and

manage hardware issues such as children forgetting to bring their headphones and other equipment.

At the same time as the start of the academic year, the Pacific Northwest had poor air quality due to wildfire smoke. This resulted in challenges for teachers because children could not play outside and they had to manage their own health concerns. In addition to the challenges at the start of the academic year, there were changes in enrollment and staffing due to the overall COVID situation. The extra energy to manage the change in programming due to remote school, the unhealthy air, and the continued COVID situation created conditions in which many administrators and teachers were doing their best to get through the day and unable to add anything extra (K. Sheridan, R. Hernandez-Greenfield, & C. R. White, personal communication, September, 2020).

These challenges continued through fall. One positive aspect directly related to this study was that spending time outdoors was encouraged. All 12 participants spoke about how they valued outdoor time for children and for themselves. One participant spoke directly about how the ECE program responded by increasing outdoor time for children and indicated she was pleased with his change. Although data collection took longer than anticipated, there were 12 people who volunteered to participated, and several expressed their appreciation with being included in the study.

Demographics

There were 12 participants in this study. All were currently teaching in a program that served children under 5 years of age. The level of teaching experience ranged from 4 to about 30 years of experience. Two of the participants had been teaching approximately

4 years, one for 6 years, five teachers had about 10 years teaching experience, one 26 years, and one has been teaching at least 30 years. Participants reported total years of experience rather than years at their current teaching position.

The participants' current teaching roles were categorized into lead, assistant, and other/float. Eight of the 12 participants were lead teachers, two were assistants, and the remaining two fall into the other/float category, filling in for other teachers' break, mealtime, and as subs. Both also had previous roles as lead teachers. One was in the floater role because she was recently hired and the other described her current position as parent aide until 10:30 in which she greeted the parents outside and took children to the classrooms; this was a new position created to comply with COVID regulations of no parents coming indoors. At 10:30 this person moved into a floater or substitute role as needed. Four of the eight lead teachers identified their role as outdoor teacher in which their job was to provide intentional curriculum in the outdoor setting. Three of these four spend the majority of time outdoors with children in a dedicated space and one said her official title was outdoor specialist. As such, she spent her entire shift outdoors, which was a half day morning program. At the beginning of the study, it was anticipated that participants would be in lead, assistant, or floater roles but not as a dedicated outdoor teacher.

In addition to categorizing the teacher roles, the types of ECE programs were categorized. There were four categories: licensed child care program, Head Start only, combined Head Start and licensed child care, and special outdoor program embedded into licensed child care. Four participants worked in a licensed child care program, one

worked for Head Start, two worked at a program that had combined Head Start and licensed child care, and six worked for licensed child care facilities that had a special outdoor program embedded into licensed child care. As with the outdoor teacher role, it was not anticipated that any of the programs would have a special, dedicated outdoor program even with recent addition in May 2021 of including fully outdoor programs into child care licensing rules in Washington State (Department of Children, Youth, and Families, 2021). But half of the participants worked at a licensed child care facility with a dedicated outdoor program embedded into it. The participants in this study did not work at a fully outdoor program; however, shortly after data collection the new licensing rule was enacted, which seems to show increasing value of children's outdoor experiences enough to create regulations and guidelines. Similarly, the unanticipated role of outdoor teacher and half of the ECE facilities in the study as including dedicated outdoor programs indicates interest in intentional use of the OLE for teaching and learning.

Data Collection

Data were collected from 12 participants through interviews. There was one interview for each participant done through Zoom, and each was approximately 1 hour. Interviews were scheduled at a time that was convenient for me and the participants. The interviews were recorded with the Zoom recording tool. One unusual circumstance was that participants, all ECE teachers, had extra duties and stress due to COVID, which at times made response times and/or scheduling challenging.

Data Analysis

The Zoom interview recordings were manually transcribed in Microsoft Word to create a written account of each interview. Each participant was emailed a copy of the transcription and conducted a member check for accuracy. The manual transcription served as a first read/review of the data and allowed me to revisit each interview before beginning the manual coding process.

I engaged in multiple readings, beginning with pre-coding to identify information from that data that stood out to me and/or seemed significant (Saldaña, 2016). Throughout the process I kept analytic memos to identify and keep my own thoughts and ideas separate from the data (Ravitch & Carl, 2016: Saldaña, 2016). Additionally, I periodically reviewed the problem statement, research questions, and conceptional framework. After pre-coding there were three rounds of coding described by Saldaña (2016): first cycle structural coding, which is assigning general codes based on the content; lump coding with assigning broader codes that can also fit as categories; and split coding to code for details and nuances that may have been missed during lump coding.

In the lump coding (Saldaña, 2016), round eight general codes/categories were identified: teaching, development, and learning; teacher beliefs, thinking, experiences, and interests; sensory; teacher roles/actions; affordances; indoor/outdoor; learn more (participants each identified topics for further learning); and clarification/connections regarding instances in which the participant asked questions and/or seemed to need further explanation about the concept of affordances or prompting to describe their

responses and actions rather than what children would do in the OLE. Some of the general codes/categories included more specific yet general codes. The teaching, development, and learning code/category is broad, so more specific codes of child-initiated, teacher-led, and children's learning and development were added where appropriate. Affordances was another broad area and significant to the research questions; therefore, it included more specific codes of children's use, types of identified affordances, and participants' understanding/uncertainty regarding affordances. The indoor/outdoor code/category had two areas: outside experiences different than inside and combination of outdoor and indoor.

During the split coding (Saldaña, 2016) round, the data were read and many specific codes were assigned. To allow details or nuances that may have been missed during the lump coding rather than sort the split codes into the general codes/categories, the data were read and assigned codes. This was the fourth round of reading (pre-coding, structural coding, lump coding) as well as the review of the data during transcription so I was familiar with the content. At midpoint during the split coding I organized the split codes into eight content areas in order to create more efficiency. The split code content areas were: children (32 split codes); teachers (52); OLE/nature/outdoors (seven), affordances (40); in & out (six); learn more (22), participant interests, beliefs, values, thinking (eight); and miscellaneous (12). Throughout split coding I made notes on a flip chart about possible themes, connections to the literature, and data that fit directly into the conceptional framework.

After the split coding was finished, I completed an overall review of the documents and generated six themes that answered the research questions:

- Theme 1 participant recognition and understanding of the differences and relationship between indoors and outdoors
- Theme 2 participants' understanding of affordances in the OLE
- Theme 3 teacher roles/actions and engagement with children in the OLE
- Theme 4 the range of comfort levels with risky play and affordances
- Theme 5 affordances in the OLE
- Theme 6 is participant interests for future learning.

The themes are described and supporting quotes for each are described in the Results section.

Evidence of Trustworthiness

Trustworthiness is a key aspect in qualitative research (Lincoln & Guba, 1985; Shenton, 2004; Tracy, 2010). This section is a description of credibility, transferability, dependability, and confirmability, the criteria of trustworthiness. Each criterion was met as planned and described in Chapter 3.

Credibility

Qualitative studies provide insight and answer the research questions (Lincoln & Guba, 1985; Shenton, 2004). Credibility for this study was addressed as planned through the qualitative approach and alignment of the purpose, research questions, data collection and analysis (Shenton, 2004). In addition to alignment, each participant conducted a

member check of the interview transcription, for accuracy in reporting their ideas and thoughts (Merriam & Tisdell, 2016; Ravitch & Carl, 2016).

Transferability, Dependability, and Confirmability

Transferability refers to providing detailed descriptions in which the reader can draw conclusions about how the study relates to other situations (Patton, 2015). Transferability was addressed through multiple readings and quotes intentionally selected to provide thick description in order to allow the reader to interpret the results as they relate to other situations. Dependability and confirmability were addressed through engagement in reflexivity and writing analytic memos throughout the study (Ravitch & Carl, 2016).

Results

Six themes that answer the research questions were identified. This section is organized into sections for each theme. Under each theme the research question and subquestions that were answered are described with supporting quotations from the data.

Theme 1

Theme 1 is participant recognition and understanding of the differences and relationship between indoors and outdoors. Participants spoke about two aspects of the differences and relationship between indoors and outdoors. One aspect was that the possibilities and constraints were different inside than outside. The second aspect was how the indoor and outdoor environments complement each other, which expanded and enhanced children's learning. These two aspects addressed the main research question as well as Subquestions 1 through 3 related to teachers' understanding and experiences with

affordances in an OLE in terms of what affordances they recognize, the experiences they had, and how the teachers see children using affordances.

The participants described differences between the indoor and outdoor environment and what they thought children could do and experience in the OLE. One difference described was the freedom and space in the OLE, which can create possibilities for teaching, learning, and development. P2 provided an overview and said "like there are so many teaching opportunities that happen outside that just, they feel different because there's no ceiling, there's no barrier and I think that's super important." Similarly, other participants gave a description of the overall space, freedom, feeling, and learning outdoors. P10 said, "children are calmer because they can wiggle around and be louder and expel their energy and express themselves more freely because they are not so confined, like you have to be indoors." P11 was clear in her thinking and description with: "The number one thing I think is really important to understand about nature and going outdoors is your space opens up." P12 said, "I feel outdoors we are able to do things and move in certain ways that we can't necessarily do inside" and "they are able to observe and move their body and imitate and speak and yell and sing … so they are able to explore what they are capable of, without having any sort of restraints."

Participants also spoke about the how the sensorial experience and options for learning were different from inside. P1 said, "I think it is important for them to be outside and learning different textures and different stuff that is outside … the flowers, the fall leaves falling, and just being outdoors. P11 summed it up as: "They have the freedom, the

world opens up to you, it affects all of your senses. Your sense of smell, touch, you know, just the feeling outside is different." P12 said,

> I feel like outdoor learning spaces are a bit more stimulating to the senses … their minds could be busier outside because you are like this dirt is dirty and I need to be okay with my hands being dirty but I also can smell it and I also see the dirt over here and I see that this dirt is wet but that one is dry and there is a lot of learning to be had outside.

These comments extended what other participants said about the sensorial aspects by relating it to learning and development.

One participant, P11, shared her thinking about why experiences in the OLE were important, especially for children "who need more bodily autonomy and need more space around them, that is the number one thing that is granted when we go outside." She went on to describe freedom of movement: "can move their bodies and not hurt anyone, not get in trouble for it … they can crash into a tree, crash into the ground and they are not going to hurt anyone." This participant observed that at the beginning of the COVID restrictions when her class was smaller there was less competition for space and teacher attention: "space is the biggest issue I am finding … now that we are back up to 18 they are fighting for space, they are fighting for attention." For this participant, the OLE offered a solution for this problem because

> they don't need as much attention … because they might be distracted by a bird or they might see something and look at it … and they are all into that and they

hyper focus … so their need for attention and their need for space goes away when they are outside.

The participants also thought that there were less constraints and differing teacher expectations for children's behavior in the OLE. A nice summary was given by P2 with "It's almost as if I can see their minds becoming more creative, they're learning, they have the space to do gross motor stuff that they might not have inside" and added "it would not be okay for a kid to throw that or run with it … there's more opportunities to do 'dangerous' things or like 'unsafe' things … and limit test everything." P3 specifically addressed risk-taking by saying "risky play inside is seen as red flags and you're like 'no, no, we can't run fast inside, we can't jump inside." P5 described: "You know when kids they go outside they can run around, they can let their energy go … some children, it seems like they are more relaxed when they go out." P6 spoke about experiences with materials and said "If you keep the kid in the classroom until they are seven and then hand them a huge stick they are going to whack each other with the stick." P9 brought up a constraint related to the additional health measures instituted because of COVID: "getting that sensory experience because they can play with the wood chips outside and they can feel the grass and they can do all that sensory stuff that we cannot do inside anymore."

P9 compared and contrasted the physical challenges outdoors and indoors. She said she thought children "see those things as, like challenges. Like the container we keep the blocks in, they are super interested in trying to get into it." She described the container as such: "It is pretty tall. I am about five foot two and I can barely bend over to

the bottom of it." She observed a child "stacking the chairs on top of one another" and "which mind you, was almost taller than me at that point." When asked in in the interview if she thought something like that would happen indoors, she indicated that it would not: "our play stuff inside is all open and it is accessible. It is all child level." She went on with "the opportunity isn't there because all of the classrooms are made for child-sized."

In addition to physical activity, P9 and her co-teachers were more willing to allow for messy play outdoors: "we weren't so worried about them getting paint all over the classroom … we unconsciously had put these restrictions on the kids … but then outside … we gave them like free paint which we don't tend to do inside." P11 said "Outdoors is just more of a canvas for doing" and identified messy activities as well as risk-taking. She said: "Inside there are so many rules and restrictions about what is proper … that kind of goes away outside. You climb on rocks, it's no big deal. If you climb on shelves, it's a big deal." P12 spoke directly about restrictions by saying, "And there is just less restriction outside."

Although the participants saw differences, they also thought the indoor and outdoor environments complemented each other. Several participants spoke about how something gets started indoors and continues outdoors or vice versa. P1 said, "Well, a lot of times that starts in our classroom … we are talking about insects … then we explore the outdoors with bug boxes and magnifying glasses." She also gave an example of children's observations of birds: "kids noticed birds out the window … we were feeding pigeons that come sit on our windowsill … they made up a pigeon dance" and "when we

were outside they made little nests for themselves." P4 described: "our theme for the month is trees or plants … then we take them outside and we can continue our lesson outside." For P4 this was "more hands on … you can actually look at the difference in plants and the tree, the leaf color changes, and all these kinds of things outside." For this participant the OLE was "an extension. It gives richness to the child's learning."

P11 and P12 gave examples of topics taught both indoors and outdoors. P11's example was: "we were talking about rainbows this week and a brought a prism … we brought it outside." She spoke about what they did in the OLE: "I said we need to find a source of light … make sure that it goes through so it can show use the rainbows." P12 spoke about implementing a purchased curriculum in the OLE: "There is also one that is called playground textures and we would say … this walkway is bumpy but the grass is smooth and it is wet." She also said she "took the butcher paper and it was the whole length of the tree they can reach … and we talked about how we are coloring texture and we hung them up on the walls inside the classroom." Additionally, P12 "brought branches and sticks and stuff and taped it on. So, we brought nature inside."

P10, who spends the majority of time outdoors with children, spoke about how she used both the indoor and outdoor environment: "I was planning out for the next two weeks and we will be indoor and outdoor … studying drama to build our literacy and storytelling." She had planned: "We can't build a fire indoors but we can walk over to the park … there is a ring of rocks … so we can build a fire there." The fire is the setting: "The day we do the fire pit we will all be sitting in a circle around the fire and so that day I have planned in my lessons that we will do a shared story." P4 also spoke about planned

activities in the OLE: “We were talking about insects … and just being outside helped make it more fun for them, a fun experience for them because creatures were naturally present.” She also said, “when we do implement and plan activities outdoors it’s more exciting … because it is something new and we actually feel like doing things outside, like all three of us teachers.”

For P5, the OLE complemented indoors because she observed two things: some children do things outdoors that they typically do not do indoors, such as read books, and that she had more time to work one on one or in small groups with children. She described that “in the classroom I kept the book … in the quiet area and we kept books here and there but they don’t touch it but for some reason when I take it outside they do.” P5 also said “I think outdoors is better because I can give them more attention, like customized attention, you know” and went on to give a bit more information about how she does this: “outside time I will have two or three at a time, only so when they wanted to ask a question or if I wanted to share more information, I feel like I have more time” and this went beyond books and interactions to “like scissor cutting and other stuff, you know, I can help them to hold the scissors in the right way and I can help them.”

All of the participants, with the exception of P7 and P8, spoke about differences and the relationship between outdoor and indoor environments. Both P7 and P8 identified themselves as teachers who worked only outdoors. In the next section, the data for Theme 2 participants’ understanding of affordances will be reported.

Theme 2

Theme 2 is participants' understanding of affordances in the OLE. This theme answered the main research question: What are ECE teachers' understanding of and experiences with using affordances in an OLE for teaching and learning? When speaking about affordances, most of the participants' comments ranged from uncertainty to definitive statements and/or naming affordances as it pertained to the questions. Two made definitive statements only.

P1 expressed uncertainty as: "Um, I think it's just anything." P5 said "Um, can you give me an example?" Then said "Can we use the tree as an affordance? and later on said "I don't know, my brain freezes." When P6 was speaking about affordances she said, "I think that when it comes to affordances, assuming I have the right idea of what it is" When answering question five regarding affordances, P7 expressed "I hope that I am understanding your question correctly." P10 expressed, "The park is, how to say it, an affordance" and "I don't know if it is an affordance but my kids like puddles and mudpits." P12 described, "Honestly, I am not familiar really with that word and it is kind of distracting my thinking. Um, affordances are props and materials?" and "This is a tricky question."

Both P9 and P11 named affordances. When asked about affordances in the OLE, P9 described "the puddles for sure. They love using the puddles for other things." and "Yeah, our big toy." P11 also named affordances after saying "Oh, um, I have seen so many." She went on with saying "we've had the children find … a worker bee" and then described how the children "took a little cup from the sandbox" and "took some grass and

leaves and made a bed for the bee." She said, "we see a lot of that. Other materials too. Using sticks…they have made nests." P8 said "I think I saw this on the Consent Form example" and shared additional thinking with saying "after we talked about affordances I am thinking a lot about the playground time vs. the garden space. Because the garden was not created as a classroom initially but playgrounds were created for children to use all the time."

The participants also made definitive statements about affordances. P3 was familiar with affordances: "Yes, so affordances. I miss that word. I used it for my final when I was studying risky play for my schooling." P3 was not one of the participants who expressed statements of uncertainty, however P6 was and at another time said "Very cool … I kind of like it" and shared her thinking with "I think it is really important to just allow them and allow kids to use them the way that is working for them and the way they are curious" P7 described "we have some jump ropes that I have never seen children use to jump rope with" and "I most certainly do think the rock and hill are affordances." P10 said "Rocks and sticks and berries are pretty much affordances that can be turned into anything." P10 also described,

> To them they can spend a long time in puddles and mud … it is a very social affordance. They will congregate and laugh there. Sometimes they lose their boot … and will rely on each other to have another kid help pull their boot out of the mud. It is like a community gathering in the mudpit.

After expressing previously described uncertainty, P5 said "Everything! Now I have clarity. Everything is an opportunity" and named "Sounds that are happening outside …

birds … spider webs … people walking by … a friend falling … two friends that want the same purple shovel." P3 answered interview question five with "Well, pretty similar to the classroom stuff. Their imagination is definitely there" and when asked if a previously described situation with "a random thing that was sticking out of the ground" was an affordance said: "For like the outsider's perspective probably not, but like knowing what I know, a lot is going on in their head, even in that three-minute conversation."

Theme 2 is participants' understanding of affordances in the OLE. One participant was familiar with affordances, one remembered it from the Consent Form, and others expressed uncertainty, named affordances, and at times expressed definitive statements. Theme 3, teacher roles/actions and engagement with children in the OLE will be addressed in the next section.

Theme 3

Theme 3 is teacher roles/actions and engagement with children in the OLE. The research questions answered for Theme 3 were Research Question 1 and Subquestions 1 through 4 related to teachers' understanding and experience with affordances as well as what they see as their role in design, redesign, and provisioning OLEs to ensure affordances are available. This subsection is a report of the results as they relate to these questions. The participants' responses for Theme 3 described their roles/actions as playing with children; observation, assessment, and documentation; instructional interactions and asking questions; provisioning the environment; and supporting building empathy.

During the interview each participant answered a question about what an observer would see them doing in the OLE with children and later in the interview were shown a series of pictures of affordances (bean tipi, sticks and small rocks, a tree, and large stationary rock) and asked how they would respond if they saw children using or playing with each item.

All participants indicated that one of their actions in the OLE is to play and engage with children. In response to interview question three, P1 said, “Playing with them. Or, puddle jumping when we have a lot of rain. I have my boots and I puddle jump too.” P2 said “when I know I have more support around me, usually I tend to lean towards playing with them.” P2 also described a situation that showed involvement with children: “We were playing this game and this kid stopped and they looked at this thing that was coming out of the ground.” P3 responded with “definitely still playing with the kids.” P4 provided an example of what they play: “Yes, it’s a drive through so I have to pretend I was driving. I play with them … ‘What’s your order?’… it is an ice cream place. Or, a prison. They love cops and robbers so they take you there.” She quoted the children: “‘You can’t come out’” and herself “‘Okay but I might try to escape.’” P4 shared her feelings about playing with children by saying “Yes, it’s very fun and I truly enjoy playing outside.”

Being invited was spoken about by P5: “I’ll just join in if they invite me” and P12: “they would most likely invite me to do something with them and so I will follow their lead and see what they want me to do and interact with the materials with them.” For P6, it was about engagement “we are doing something and we are in this question

and we are going to figure it out, we are in this explorative situation, you know." P7 gave a description: "I also do quite a bit of playing! … me getting right in there and digging in the dirt and getting wet, jumping in puddles, and having a lot of fun interacting with the elements." She spoke about the bean tipi "I could also see me sitting in there and inviting children to join me." P8 would also be involved with children: "I think the first thing that jumps into my head is me being down on the ground, sitting or squatting, with the children and exploring." Similar to P8's engagement, P9 said "I like to get down on the ground with them" and P11: "So you might see me crouched down, looking at a worm or a rock or something they have shown me." P10 incorporated playing and supervising into her description and said: "Running around and playing! Running around while I protect and talk to children." Each of the participants played and engaged with children in the OLE.

Another common action was to observe and assess. P7 gave this description: "I do a lot of observing to see what their interests are and what their needs might be and how I can build my curriculum around those things." P11 said she "would step back for a bit and watch and just see … I don't want to interrupt them in any way but I might peek in." P11 also said "I love to hear what they think." When answering the questions with the photos and how she would respond if she saw children using or playing with the pictured affordances, P12 described "I think at first observe to see what they are trying out." And also said "it sounds like I am repeating myself but I would really observe first to see what they are doing."

P8 was interested to learn more about children would do in the tipi that was shown in the interview: “I feel that space … it’s almost secret and private or something. So, I would be very curious about what is going on but wouldn’t want to feel like I am interrupting or derailing.” P8 extended her observation and assessment by taking documentation: “two girls were just exploring the mushrooms … I knelt down and starting recording” and “This was a child we didn’t hear much from the first month but having her voice on be heard on the video and showing it and reflecting.” P10 described an experience with fairy houses: “I just sat back and enjoyed and talked with them to hear what they want” and “they found a black and white rock and said ‘This is their dalmatian, this is their pet.’” She also said, “It’s so good in building their literacy and their vocabulary and their communication skills, and, their imagination.”

Participants described how they supported children’s learning. Some of the participants used scaffolding and provided assistance. P5 said “I will just help them. I will pick them up so that they can touch the leaves” and P12 said “With scaffolding, of course. I might hold onto a 3 year old’s hand while they jump so they can follow the five year old.” In some cases participants spoke about being in close proximity and scaffolding. P2 spoke about children climbing and said to a child: “‘I’m right here’ … ‘I can tell you where to put your feet’” and added “We worked through it and now that kid climbs that thing by himself, he doesn’t need anything.” P4 described: “I’d probably go stand up there and make sure no one was going to fall out.” P10 said “I will stand there and guide you … maybe you should try putting your foot on this branch or put your

hands right there, with both hands." P11 described, "You might see me helping them climb a tree, standing next to them and making sure that they are safe."

P3 quoted herself with: "Let's practice on that" and "Once we master that, we can do the tire." Another quote from P3 described how she would scaffold and provision, if children needed materials: "You guys are really interested in building this, how can I assist you, what do you need?" Other participants spoke about provisioning the environment. P1 said, "We even have a little cabinet that we pull out and they have bug boxes and stuff like that." P5 said, "I try to take out a bunch of stuff when we go out … art materials, writing materials, some books. We have a cart … have everything in there like chalk and stuff like that" and "Whatever the kids need we will bring outside and work with them." P7 described "We have adventure backpacks that have magnifying glasses, rulers, and clipboards and binoculars … on a daily basis the nature backpacks are available." She also said that "In the fall I made some really beautiful nature paint brushes where the handles were sticks" and that "I use a lot of books in our outdoor classroom … also we use a lot of identification guides … we have some small little blankets that are in the nature backpacks." P8 spoke about how she provisioned the environment with "I brought the oldest kitchen set outside … I knew it would likely to get trashed."

The participants spoke about how they engaged in instructional interactions, asking questions, and science inquiry in the OLE. P11 said "we counted their little legs so they know roly polys have 14 little legs and the two antennae." P6 takes children on field trips and described: "we have spent time talking about avalanche preparation, we've

talked about climate … talked about layering clothing" and "when we are on location a lot of the time I am asking problem solving questions like what would we do if." Other questions and content-related interactions for P6 included, "a lot of math lessons have to do with rocks and sticks" and "What kind of rock is that? How heavy is that? How long do you think that is?" She continued with "I don't always seek the right answer … it is more so that I ask questions just to get them thinking." P6 also saw science inquiry as part of what she did with children in the OLE: "They will come up with these concepts. The last one we did was mushrooms … they wanted to know everything about them and it got science … wrote about it in our journals … tried to inoculate a log in our school." In response to the question with the picture of the tipi P7 said, "I see it's going to grow some food…it would need those flowers to turn into beans. Lots of conversations for sure." P9 said "I would ask what they thought it was and see where their mind went with it." For P10 outdoors "creates that opportunity to have those conversations" and described how the children asked "why is the ground dug out in a straight line here?" and as they "kept hiking … then later on found … some of the ruts still had rushing water going down" and the children realized that "water is digging the dirt out." P10's response was: "Yeah, that is called weathering and erosion." She commented that "They are hearing all of this vocabulary as they see it in real life."

Another area that participants supported children's learning was regarding empathy toward nature. P11 said they "talk about trees, please don't pick the bark off trees because it might hurt, think about somebody pulling your hair or picking your skin." P12 described that the children "were really interested in bugs that came out in the spring

… the first impulse … was to kill the bugs." She responded with 'Oh, we don't hurt living things. Let's take a look and let's see why." The children in P5's classroom were interested in roly poly bugs and she said "I think they learn, they will be aware that the roly poly is a living thing" and "the earthworm and stuff … it is too slimy and they just drop it and kill it. They just stomp on it." She also said, "Information like they are not hurting us and you know, like where they live and stuff like that…use it as a teaching opportunity to learn."

The participants in the study described ways they engaged with children in the OLE. Theme 4 also describes the participants actions in the OLE. In Theme 4 the participants shared information about comfort levels with risky play and affordances.

Theme 4

Theme 4 is the range of comfort levels with risky play and affordances. The research questions answered by Theme 4 are Research Question 1 and Subquestions 1–3. The participants spoke about children's risk-taking, their thinking about it, and their reactions to it. P3 said "it just helps with risk assessment which I think is something we don't give kids enough credit for building their own risk assessment. We think that is something we develop for them but obviously I don't" and expressed "we are starting to see that over-bubble wrapping kids is not helping them develop skills. It's actually hindering that" and "everything is like fall zones, everything is measured, and everything is so safe that we don't realize what we are giving up." Risk assessment was included in other participants' comments. P10 said, "We are big with risk management. We let them take risks, to a certain point … you can climb this rock but that rock is a little too steep

for us, we are not there yet." For P11 supervision was included in her comment: "If I had enough supervision and I felt it was safe enough … I think some risk-taking is good and children generally know their limits." She also said "That is their natural inclination, so why would we stop that? Because they might get hurt? They might, but … their understanding of themselves" and "a teacher would not walk away from that area if the children are jumping off of there."

Walking, not typically thought of as risky, was described as so by P12 for one child in her classroom who had a specific health issue: "sometimes they are completely immobilized, sometimes they walk, sometimes they don't have a lot of balance … she was almost three when she came to us and she had been walking for a week." She goes on to describe "the mom was really concerned … she was going to hurt herself somehow because all the kids are running" and realized "it was a learning experience for the child" who "has the motor strength now thanks to OT … that's a learning experience for the mom to … wait to see if she gets up" She also said, "but who am I do tell her to wait, that's her child … but there is a part of me that's like wait a minute, she can get up."

As with P12, P6 expressed some hesitation with risks: "I helicopter from time to time … sometimes he [referring to co-teacher] has to say 'They can do it'" and added "And, it is good for all of us to push ourselves and we might fail but it is always going to be a lesson." Two participants spoke about safety and risk. In response to the tree picture P4 said "Some of them might like to climb. We'd usually say 'no' because somebody might fall and we are just afraid, you know." For the rock picture P4 indicated: "they would love to climb on it. It doesn't look super high. I feel they can. My kids are big

enough to explore with this rock." P9 explained regarding jumping at her program: "It honestly depends on the age group … the school age children not so much … that is because we have been telling them not to jump off of it since they were three." She also said the following about climbing:

> don't want the kids to have anxieties … I would go up and get as close to them as possible … maybe talk with them about how we can safely explore things … if you want to climb the tree let's ask for a teacher's help.

Additionally, P9 described that she might say "You know guys it is not safe to jump off this … find a better alternative to jumping. If you'd like me to hold your hand and help you jump, yes."

In addition to speaking about themselves, the also shared what they observed and experienced with colleagues' comfort with risk-taking and affordances. P3 said, "I have had a couple of co-teachers that were not as comfortable with sticks and rocks" and added her thoughts: "I know I started scared … this subject can be a little unapproachable in ECE … we see safety as no physical injury. We don't think about safety as a mental perspective and resilience." She added that "We didn't realize we traded safety for resilience" and "I think we really need to … explore the benefits of letting children be in more 'unsafe' environments." P10 said, "Oh you know one thing I would say about sticks is I worked in a lot of places that see sticks as a threat" and "I have heard from a lot of teachers, drop the stick, put the sticks down, we don't play with sticks, even at child-oriented places." She continued with "And that kind of breaks my heart because … those

sticks are precious to them" and when asked if this was only in ECE or also when she taught elementary school she replied, "Both, on the playground and at the preschool … adults are just fearful of children getting hurt so they want to eliminate the possibility of getting hit by a stick so there's just not sticks around." P12 said, "You know, I was just reminded about something with a co-teacher of mine. She did not like the kids playing with sticks." She shared that "to me it is a teacher preference" and described "we had our safety checklist … I started to notice that when she did the checklist there were no sticks in the yard … when I did the checklist I would notice, oh, great stick … I am just going to leave it."

P11 articulated her approach to stick play and her thinking about the children in her classroom. P11 said, "we'd have a little talk … about safety and not poking each other's eyes." She explained, "With the high needs children sometimes they are not real cognizant of where their bodies are" and "we'd have a little discussion to make sure we are given each other space for the sticks … the longer ones especially."

Theme 4, the range of comfort levels with risky play and affordances, was addressed in this sub-section. Theme 5 is affordances in the OLE. The next section will share findings regarding Theme 5.

Theme 5

Theme 5 is affordances in the OLE and answered Research Question 1 and Subquestions 1–3. Participants named and described affordances in the OLE. At times they just named affordances in the OLE. In addition, their descriptions included what they observed children doing as well as what they, as teachers, thought were affordances.

In naming and describing affordances, P1 said: “there was a hole in the hill and they would gather rocks and twigs and make a peregrine falcon nest. They sat on it.” She also described that the children “use wood chips all the time as lipstick or the pinecones are candy.” Similarly, children in P4’s class “use wood chips all the time. Like this is your ice cream” and “They just love the chips. They throw them around and feel like it’s snow … or “use it as a shovel, the bigger ones … bugs, they kind of look at bugs with the wood chips, like a tool.”

P3 shared a story about children who are two years old playing with water in tires:

> they were all hunched around and looking inside and they noticed there was water in there … they all started moving the tire … to work together. I was like “teamwork!” They noticed that the water was moving inside the tire when they were moving it back and forth. And so then they started getting toys and putting them in the tire to see if they would float … and so they were doing a buoyancy project without even realizing it.”

She continued with: “I explained to my co-teacher, she was like ‘Why are they putting toys in the water?’ and I was like ‘they are studying.’” The children used materials: “They tried bark … puff balls … and they realized the pom poms … don’t stay puffy” and that “we talked about how it changes when it gets wet.” She articulated that “the water in the tire was an affordance and it just built and built and built from the kids were curious about the water … from buoyancy to why do things shrink in water.”

Participants described puddles, weather, and gear. P4 said, “Weather wise they still run around anyways, especially when they see puddles. They love puddles! They’d

jump in it!" P1 described: "Oh my gosh, they were going crazy. So today I just ordered rain suits … so they don't have to get wet." In P8's outdoor classroom: "they know where it puddles and will create a kitchen or a cafeteria or a restaurant or this may be…bake shop" and "Using our bowls and buckets and scoops … we even have old plastic spoons and that becomes a whole new area based on where the puddle is." Furthermore, "One puddle lasts longer than another so sometimes it shifts where they play. And, sometimes we get a giant storm and the whole playground is a puddle and how that shifts play." P8 continued with her realization: "I realized that we didn't have rain today or yesterday and … they were like 'Where are the puddles?' … so I filled up a watering can."

Worms, along with other natural materials, manufactured items, and stationary objects were also described as affordances. P4 said, "they sometimes find worms in there and it is a very hands-on experience for them on their own without us even telling them that they can do that" and "one of my students … would pick a ton of flowers and … give it to me … I said 'Let's set it aside'" but the child replied, "'I know where to put it'" and put them in what P4 said was "like a holder and you can put stuff in it … so it was like a vase." P4 said about the flowers and the vase: "So, those things I don't even think of doing they think of." P5 described "bicycle too, sometimes they will use it as a police car." P7 described children's engagement with affordances:

> group of boys rolling balls down our slide … we had just gotten some new … Tonka trucks and construction vehicles … pretty soon someone was curious about how that might go down the slide … it became this thing

about how far it would go and how fast … of course it was a muddy day … child noticed the different track marks … on the slide.

P8 also described her thinking about children's use of affordances: "They are developing questions in their head as they are using the material in a particular way. Maybe thinking 'what would happen if' … doing trial and error … maybe creating more questions" and described it as "a lot of inquiry happening and lots of ideas developing. I think they are forming ideas about the different ways we can use materials."

Inquiry was also described by P8 with: "We took note of where the mushrooms were and how, even in different areas, mushrooms did not look the same … we talk about how they felt and how or why they were there." She also said "that month … there were mushrooms everywhere. We brought them to a table with magnifying glasses" and "At the end of the day they could just break it apart if they wanted to feel what it felt like."

P10, who described "The outdoor is a tool to teach" spoke about play and science inquiry. She said, "My kids are very good at engineering things with logs and sticks and little forts." She also described children's play as relating to science: "they are running around … pretending to be rainforest animals … pretending to fly because they know that is how or they know how a jaguar was running with his feet" and that "It makes me happy because … when I taught fifth grade lessons and the structure and function of animals, why birds have wings instead of feet … it is like my kids are literally acting out what they are going to know later." P2 said that outdoors "There is no ceiling on anything." P12 described "It's like of like the outside is the third classroom … the first is going to be the home … second is my indoor classroom … third would be outside

because every moment that children are outside, they are learning." P12 also said that "I feel they are exploring something that calls their attention…and they are exploring their immediate environment." She went on to say "They are learning the benefits of being curious and being motivated and being persistent and being focused and what happens when you finish a task to the end" and connected it to developmental domains: "The cognitive piece but they are also learning from each other, I think."

Stationary objects were described, including manufactured and natural items. P5 said, "We have a little playhouse on your playground and some of the kids will go in there and play McDonald's." P6 shared about a stationary object that also had movable pieces: "We have a Pacific Madrone tree in the yard … so when the bark is falling off the kids were harvesting the berries and they decided they were seeds … they were going to plant the seeds." Trees were also mentioned by P8: "they have used the trees … that they have just realized they can climb … the rest of the trees there are very few branches they can climb" and for the bigger trees "They say this is my house and they go stand next to the tree." She also described "an elevated plastic pallet and that often becomes a house." For one child the smaller trees: "becomes a climbing space and a lookout space for her."

Theme 5 is affordances in the OLE. Participants described a variety of affordances. Some descriptions included examples of children's play and inquiry and in other cases affordances, both movable and stationary, were described. The last theme is participant interests for further learning and will be described in the next section.

Theme 6

Theme 6 is participant interests for further learning and answered the last research subquestion: What training and/or support do teachers indicate they need to effectively use the OLE for teaching and learning? In this theme participants identified areas for professional development and learning. Topics for both formal and informal learning were described.

Two participants identified formal learning options that they thought would be beneficial for them. P6 said, "My main focus is … wilderness preparation aspects so I had plans to do my emergency first responder training for wilderness preparation…then COVID happened so they cancelled all classes." P10 had specific plans: "I am super excited. In June I am taking a week off work … because I am going to the ERAFANS, Eastern Region Association of Forest and Nature Schools"

Three participants wanted more training in the area of social/emotional development and children's outdoor experiences. P5 said, "I know that the kids … when they go outside, I feel they are less aggressive … I feel like maybe mental health and outdoor play." Similar, yet different to P5, P3 identified that "Hands down I would like to study infant to five, um, the benefits of kids who have experienced trauma and toxic stress and their experience in the outdoor environment … trauma changes the brain." P7's interests are also in the social/emotional domain. "Um I was thinking about identity the other day…I believe some of our identity comes, develops over time from our interactions and our experiences" and she made a connection to nature experiences: "I see part of my role as helping children make those special connections so that as they grow

they have had those interactions and those experiences … that nature can become part of their identity."

P1 and P2 were interested in resources. P1 said "Um, more ideas, I think, of what other people do" and also said "I don't know. Is there a good book?" For P2 it was resources as well as additional teaching experiences: "Another thing that would be nice is having enough resources" and "I also think continue to have more experiences … I have never taken a class field trip to like the woods … I would love to see how it would unfold" as well as "That is not necessarily a thing I could learn in a book, it kinds of needs to happen. Let me think. Anything I don't know."

P9 was interested in learning more about infant outdoor experiences: "I think one of my things would be definitely learning how to integrate … infant outdoor play. We don't have a strong area for infants outside." P8 was also interested in outdoor spaces: "how I could use other natural elements, even though we have a variety of materials and we are doing the best we can with the space we have" and "creating spaces, more spaces in environments that children can engage with whether they want it to become a dramatic play area … or to take art." Similarly, P4 wanted to learn more about the OLE: "Maybe how, in what ways teachers can be more creative, maybe using more affordances, like how to spot an affordance."

Summary

The data analysis generated six themes to answer the research questions. Research Question 1 was about teachers' understanding of and experiences with using affordances in an OLE. All of the themes with the exception of Theme 6 answered the Research

Question 1 and Subquestions 1–4. Subquestions 1–4 directly fit into either teachers' understanding of or experiences with using affordances in the OLE. Subquestion 5 pertained to training and education, therefore does not directly fit into the main research question but was answered by Theme 6.

Research Question 1 and Subquestions 1-4

Themes 1, 2, 3, 4, and 5 answered Research Question 1 and Subquestions 1–4. Research Question 1 and first four subquestions were about teachers' understanding, experiences, recognition, and use of affordances and their roles in the OLE. Theme 1 is participant recognition and understanding of the differences and relationship between indoors and outdoors. In this theme the participants described the possibilities for teaching and learning in the OLE and how they were different from the indoor environment. They also described how the outdoor and indoor environment work together, specifically how content/topics could happen both outside and indoors, which allowed for enhanced teaching and learning.

For Theme 2, participants understanding of affordances in the OLE, there was a range of comments. Some of the comments indicated uncertainty about what affordances were, some were clear statements about affordances. One participant was familiar with affordances from a previous educational experience. In some cases, participants made statements that were uncertain towards the beginning of the interview but later on were definitive about affordances in the OLE.

In Theme 3, teacher roles/actions and engagement with children in the OLE, participants described what they did while in the OLE with children. The roles/actions

were categorized into six areas: observation, assessment, and documentation; instructional interactions and asking questions; provisioning the environment; and supporting building empathy. For each of the categories, participants provided descriptions and examples of what they did while they were outside with children.

In Theme 4, participants also described some of their actions in the OLE. Theme 4 is the range of comfort levels with risky play and affordances. Some of the participants expressed that they were comfortable with risky play and understood the value of it. Others expressed that at times they are willing to let children engage in risky play, especially with support and assistance. Participants also commented on colleague's lack of comfort with risky play.

Theme 5 is affordances in the OLE. When asked about affordances for teaching in the OLE and during other interview questions, the participants named and described affordances in the OLE. In some cases, they shared an example that included more than one affordance. The affordances included natural and manufactured items, some of which were movable and some that were stationary. Wood chips and puddles were two common affordances that participants mentioned.

Subquestion 5

Subquestion 5 and Theme 6 pertain to training and support needed to effectively use the the OLE for teaching and learning. Participants each identified areas of interest for future learning regarding supporting children's learning outdoors. Two participants had specific ideas for formal training. Two participants indicated resources would be helpful. Other participants wanted training regarding benefits of outdoor experiences for

children's social/emotional development. Two indicated an interest in learning more about working with affordances and environmental design in the OLE. One participant expressed interest in learning more about providing outdoor experiences for infants. Interpretation of these results will be described in Chapter 5, followed by limitations, recommendations for future research, and implications for positive social change.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this qualitative study was to illuminate teacher experiences with and knowledge of supporting children's learning in the OLE, specifically using affordances for teaching and learning. The key findings were categorized into six themes that answered the research questions: (1) participant recognition and understanding of the differences and relationship between indoors and outdoors; (2) participants' understanding of affordances in the OLE; (3) teacher roles/actions and engagement with children in the OLE; (4) the range of comfort levels with risky play and affordances; (e) affordances in the OLE; and (5) was participant interests for future learning. The next section is an interpretation of the findings based on the literature review and the conceptual framework, which is followed by recommendations for further research. The section after is a description of the limitations of the study. The last two sections are the implications for social change and the conclusion.

Interpretation of the Findings

This section includes an interpretation of the findings based on the literature review and the conceptual framework. The first subsection will address the main research question and Subquestions 1 through 4, all of which pertain to participants' work with children. The topic for Subquestion 5 is training and support for effectively using the OLE for teaching and learning, which will be addressed separately. This section ends with discussion of findings as they relate to the conceptual framework.

Research Question 1 and Subquestions 1-4

Research Question 1 was about teachers' understanding of and experiences with using affordances in the OLE for teaching and learning. The first four subquestions were more specific and relate directly to recognition, use, availability through design, and provisioning of affordances in the OLE. In this study, the participants all appreciated and valued outdoor experiences, for themselves and for children, which confirmed previous research (see Nel et al., 2017).

The findings show that participants saw a difference between indoor and outdoor environments. The participants described possibilities for teaching and learning because there was more freedom and fewer constraints for children and for themselves, which shows an understanding of the OLE and items within it (affordances) for teaching and learning. Furthermore, the participants spoke from their observations and teaching, so their experiences with the OLE as an overarching affordance is evident. In this study, all participants expressed interest and experiences with using the OLE for teaching and learning, which related to previous research (Bilton, 2021). This raises the question of how the findings might be different if teachers who do not value outdoor experiences and OLE as a place of learning had participated.

Although all participants described interest in and experiences with teaching in the OLE, there was a range of intentionality. Moreover, all participants indicated they enjoyed playing and engaging with children, but none described how doing so supported children's learning. The participants may be knowledgeable about how teachers playing with children can support learning. Additionally, they may or may not have been

intentionally doing so to support learning, but the findings only demonstrated that they did play and engage with children and that they enjoyed it. Some participants spoke directly about supporting learning through observation and assessment, instructional interactions, engaging in science inquiry, and asking questions. Others' comments were descriptive of doing these things, but it was not clear if the awareness and intention of doing so was to support children's learning. This confirms the findings in previous studies regarding teachers' being challenged by fully using the OLE for teaching and learning (Bilton, 2020; Ihmeideh & Al-Quaryoutie, 2016; Tuuling et al., 2019; Zamini, 2016). The results that indicated all participants described play and engagement without mentioning children's learning also confirms previous research. These results also extend the literature because some of the participants were able to describe intentionality with supporting children's learning.

Participants' comments related to space design further confirm and extend the literature regarding well-designed OLEs as conducive to teaching and learning (McClain & Vandermaas-Peeler, 2016; Murakami et al., 2018; Olsen & Smith, 2017; Refshauge et al., 2015; Sandseter & Seland, 2016; Smith et al., 2016; Stordal et al., 2015; Strachan et al., 2017; Waters & Bateman, 2015; Wight et al., 2015; Zamani, 2016). It also confirms previous research regarding affordances in the OLE (Bjorgen, 2016; Kleppe, 2018; & Zamani, 2016) and loose parts (Nicholson, 1971). Some of the participants described provisioning the environment with materials such as furniture for mud kitchens, adventure backpacks, and magnifying glasses. One participant spoke about adding bicycles to ensure gross motor experiences. Another pondered about space design and

children's play, specifically by comparing and contrasting the difference between the space used in her outdoor classroom that was originally intended as a garden and the playground at the program. Other participants spoke about what was, or was not, on their playground such as sticks, rocks, manufactured climbing equipment, pallets, blocks, and natural stationary objects such as trees.

Though most of the participants named and spoke about affordances, they did not seem to fully understand the concept. The exception was one participant who was familiar with affordances from previous academic work. Participant comments showed uncertainty about affordances, although as the interviews progressed, they appeared to gain an understanding of the concept. The uncertainty was likely due to the unfamiliarity with the idea of affordances as individually perceived opportunities and as the interview went on, they may have gained an understanding of the concept. Some participants expressed enthusiasm about the affordances. P12 referred to "sticks as the highest currency" in childhood and another indicated she wanted to learn more about using affordances in the environment. The participant who had previously studied about affordances said that she "missed that word," which indicated an understanding but perhaps not as an intentional, current use of the concept for teaching and learning.

There were no specific interview questions regarding risky play and safety, but participants spoke about children's risk-taking and risk management, especially in reference to affordances such as trees and the stationary rock that was in one of the interview photos. Participants expressed a range of comfort levels with children's risk-taking and risky play. Some participants valued children's risk-taking as part of learning

in both social/emotional and physical domains, which this confirms previous research (Bento & Costa, 2018; McClain & Vandermaas-Peeler, 2016; & Laverysen et al., 2017).

On the other hand, as in previous research (Ihmeideh & Al-Quaryouti, 2016; McClintic & Petty, 2015; Moore, 2015; Nel et al., 2017), other participants indicated that safety was the priority and if it was safe, they may let children take risks. Furthermore, some participants spoke about colleagues who were not comfortable with children's risky play and risk-taking. In this study the participants just described that their colleagues' values and actions were different; however, other research has shown coworkers as a barrier for participants who valued and wanted to support children's risky play (Bilton, 2020). The findings from this study also shows the awareness of other colleagues' comfort levels with children's risk-taking; however, it does not confirm, disconfirm, or extend colleagues as a barrier. But this study does confirm how children respond to risks: engage, change it to make it less risky, or avoid it (Lavrysen et al., 2017). Participants described their observations of children choosing to engage, sometimes with verbal support. A common risky activity described in this study was climbing. Participants said children may ask to be lifted rather than climb but that they would not do so because children know their own capabilities and engaging in risk-taking such as climbing was something they needed to do without physical assistance but with verbal support (see Bateman, 2021). In this study, the participants described offering verbal support and scaffolding to preschoolers.

The three choices for risk-taking (engage, change, or avoid) could also be applied to the participants providing verbal assistance (Lavrysen et al., 2017). Verbal support and

scaffolding could be considered changing the activity to make it less risky. Although the children themselves did not change the activity of climbing, the situation was modified with adult presence and scaffolding. Moreover, a couple of participants said that they might demonstrate to children that risk-taking was allowed by modeling in the activity, such as jumping off a rock or walking over a wet surface. This sets the stage for engagement in risky play which could be considered a form of scaffolding, especially for children who are less confident with physical activity and taking risks. One participant described a child who was 36 months old and had just starting walking due to a health condition. For this child walking, especially outside, was a risk-taking activity because her motor skills and strength to get up after falling were still developing. The participant described allowing the child to take steps independently without intervening and encouraging the mother to do the same. Although this is one example, it shows that risk-taking goes beyond activities such as climbing and jumping and confirms the importance of allowing risk without providing physical support (Bateman, 2010). This example also shows that children's risky play may require adults to engage in risk-taking by assessing the situation and choosing whether to intervene and how to do so to allow for maximum independent engagement.

Possibly related to risk-taking and risky play is the affordance of secret spaces in the OLE. Children's interest and use of secret spaces has been addressed in the literature (Aminpour & Bishop, 2021; Goodenough et al., 2021; Moore, 2015). In such spaces, teachers may or may not be able to keep the children under sight and sound supervision because they may not be able to see the children. Participants in this study mentioned that

children may use spaces such as the tipi or a fort built from materials in the OLE as a secret space. The participants' comments indicated they would respect the children's "privacy" and allow them to be in the space; however, they would listen to what was going on. For some the primary purpose of listening was to ensure the children were safe and for others it was curiosity about the children's interests and ideas. One participant described that she would be mindful while listening because she thought the children would change their conversation/play if a teacher was present. This participant worked for a Reggio-inspired program, and the respect for children in the Reggio approach may have contributed to her awareness and actions regarding children's ideas and play.

Another area participants spoke about was supporting children with building empathy for nature. Participants spoke about children's interest and fear of insects and other creatures such as spiders and how they would share information to help children gain an understanding that these were living beings. They described how they would make connections that were relevant to children, such as pointing out that insects and creatures have homes and eat. Some participants shared examples of how they would address plants as living beings and how they would not allow children to pick leaves from trees. One participant gave an example of toddlers' interest in the crows on the playground and how they observed, talked about, and even named a crow. The findings from this study confirm what past research has shown regarding the OLE as a place for learning about the nature and fostering an appreciation for the natural world (Beery & Jorgensen, 2018; McClain & Vandermaas-Peeler, 2016).

As described in this sub-section, the findings in the study confirm and extend past research regarding ECE teachers' understanding of and experiences with using the OLE for teaching and learning. In the last research sub-question, participants were asked to identify their interests for learning more about supporting children's learning in the OLE. This content will be addressed in the next sub-section.

Subquestion 5

Theme 6, participant interests for further learning, answered the Subquestion 5, which was about the support and/or training teachers need for effectively using the OLE. Each participant expressed interest in learning more and improving their teaching practice, which shows they value the OLE (Bilton, 2021). Two participants had clearly defined formal professional development opportunities and had plans to follow through. Both of these participants' primary teaching responsibilities are outdoors. Other participants expressed interest in learning about supporting children's social/emotional development and one added gaining a better understanding of other adults' hesitancy and reluctance to allow children to play and engage in the OLE.

One participant identified that she thought infants should have outdoor time. She wanted to learn more about creating spaces and ensuring infants had appropriate, beneficial outdoor experiences. This participant described that she observed infant interest in being outside and acknowledged that it did not happen very often. She was able to describe barriers such as following individual infant schedules and that the OLE at her center was not well-designed.

As a coach, on-site consultant, and college instructor I have visited many ECE programs and my observations have been consistent with this participant's descriptions. I remember working with infant teachers at one program that had an outdoor space that could be described as adequate and convenient. These teachers were reluctant, perhaps not even interested, in taking the infants outside. Within a 3 month time frame many reasons were given about why they did not go out, one of which was that it was too difficult to get the infants dressed in outdoor clothes because they would run around the room, however none of the infants in that room were walking, let alone running!

In a recent literature review study, Kemp and Josephidou (2021) found that teachers were a significant factor to ensuring infants get quality time outdoors. The participant in this study expressed concern as well as interest in providing appropriate outdoor time for infants. Although she is one person, there are likely others who have similar interests, while at the same time there are teachers who feel it is unsafe, too much effort, and/or lack the knowledge of the benefits and importance of infant outdoor time.

The participants in this study were all currently teaching young children. Each expressed, through their answers and stories, an understanding of and experiences with using the OLE for teaching and learning as well as ideas for professional development. These participants had knowledge and experience using the OLE for teaching and learning, however there was a range of intentionality in doing so. Furthermore, the participants all enjoyed playing with children, but did not describe that as part of the teaching and learning process. The section will address the Conceptual Framework and the overarching concept that the OLE is a place of learning.

Conceptual Framework

The conceptual framework for this study consisted of one approach to ECE and three theories. The overarching concept was the OLE is a place of learning and within that environment affordance theory (Gibson, 1979), Dewey's (1997) ideas regarding educational experiences, and Vygotsky's (1978) ZPD are employed in the OLE.

In the Reggio Emilia approach, children are seen as capable and teachers as facilitators and guides (Edwards, 1993). Participants described their thoughts and experiences working with children in the OLE and all considered it a place of learning. Some participants directly spoke about children's capabilities and others implied that they viewed children as competent. Furthermore, all participants described what they either have done and/or would do with children in the OLE and the underlying their actions was that they would facilitate learning rather than use direct teaching strategies.

The participants in this study used (would use if describing a hypothetical situation) children's interests and developmental levels as a basis for teaching. This fits with Dewey's (1997) ideas regarding interests and educational experiences. Some participants described sustained, connected experiences such as engaging in science inquiry. All participants spoke about and named affordances. Mainly the participants described actualized affordances (Kyttä, 2004) that were used by children and in some cases used for teaching. With the exception of one person, affordance theory (Gibson, 1979) was a new concept. At first most participants expressed some uncertainty with understanding the idea of affordances as individually perceived opportunities, but later in

the interview they seemed to come to a sense of what it meant. Some even expressed enthusiasm and added additional thoughts about affordances at the end of the interview.

In describing their actions in the OLE, participants identified playing with children, using observation and assessment, engaging in instructional interactions, asking questions, provisioning the OLE with affordances. Additionally, they described supporting children to build empathy for the natural world. Each of these actions could fit with using the ZPD (Vygotsky, 1979). Several participants specifically described using scaffolding. Many of the comments regarding scaffolding were provided as a way of supporting children's risk-taking, however some participants described using it to extend children's thinking.

The conceptual framework was used to design and conduct the study. The overarching concept of the OLE as a place of learning was the basis for collecting and analyzing the data. The Reggio approach and theories (Dewey, 1997; Gibson, 1979; Vygotsky, 1978) formed the structure for the study to investigate ECE teachers' understanding of and experiences with using the OLE for teaching and learning, specifically regarding affordances.

Limitations

One limitation to this study was that it was a small group of participants, 12 total. All participants were from the Pacific Northwest. It is possible that in other parts of the United States teachers would have differing experiences and ideas regarding spending time outdoor and/or teaching and learning in the OLE.

All 12 participants indicated they valued children's outdoor experiences, which is another limitation because teachers who are reluctant and/or not interested in teaching and learning in the OLE may yield a different set of results. An additional limitation is that the study addressed participants experience with and understanding of using affordances in the OLE, however it did not address potential ideas for intentional use of the OLE and affordances for teaching and learning, including in an ideal space rather than the existing OLEs at participants' work sites. Lastly, the results were derived from participants' explanations and an observer might notice things that were different from what was described; teaching is complex and participants may not have fully captured their experiences with children in the OLE.

Recommendations

A recommendation for future research is to conduct a similar study with participants who express concern, reluctance, and/or lack of interest in using the OLE to support children's learning. Additionally, a study that addresses different viewpoints regarding risk-taking as part of supporting children's development. Such a study could investigate differences among teachers, teachers and parents, and perhaps within family structures such as between mothers and fathers or grandparents and parents.

A study using field observations and interviews may show that teachers use affordances in the OLE more than what they describe in interviews. Similarly, a teacher research study may help participants come to an understanding of their teaching in the OLE and the model for this type of study could be used in a college practicum course. Affordances could also be addressed in future research. Specific research regarding

affordances that are present in the OLE, what is missing, and potential affordances present but not actualized (Kyttä, 2004) could inform outdoor space design and instruction in the OLE. Affordances for children with disabilities is also a topic that could be studied, perhaps even with specific groups such as children on the autistic spectrum, with physical limitations such as mobility or visual impairment, or children with health concerns. Additionally, a study could be conducted to uncover ways in which children with disabilities are included, or not, in the OLE based on the affordances that are available. Young children's learning is not limited to educational settings, therefore affordances in children's museums, parks, and other similar places could also investigated.

Implications

Positive social change can be described as addressing an issue and taking steps toward improvement. Underlying factors can be influential in contributing to change. In this study an underlying piece is teacher thinking, knowledge, and attitudes that influence actions. Participants were willing to and did support learning in OLE, however intentionality could be increased with deeper understanding and expanded knowledge. For the individuals in the study and possibly for readers, it may be that an introduction to the concept of affordances resulted in some learning during the interview. This new information could contribute to a better understanding of using the OLE for teaching and learning. With the exception of one person, all participants were unfamiliar with the concept, however they seemed to gain an understanding as the interview continued. Some expressed appreciation for affordances. The participant who knew about affordances was

able to revisit a concept that she had not recently thought about and possibly consider how affordance theory could be used in her current teaching practices.

The potential for social change also exists at what could be referred to as the organizational or societal level for ECE programs that serve children, college ECE classes and departments, and the field of ECE. The results from this study contribute to the literature regarding children's learning in the OLE. These results can be used to inform training and education, both in-service and pre-service. Because the participants were from licensed ECE programs that were not fully outdoor programs, the results show that some teachers see the OLE as a place of learning. There seems to be an emphasis on the fully outdoor ECE programs, which is evident in the new WA State child care licensing rules (Department of Children, Youth, and Families, 2021) that are designed for fully outdoor ECE programs. Although it is positive that there are licensing guidelines and standards for fully outdoor programs, it is also needed for programs that serve children both indoors and outdoors, specifically in regard to how the OLE can be an intentionally created and used for teaching and learning. In addition, the results of this study can be used to extend future research regarding ECE teachers' use of the OLE in their teaching practice.

An implication for practice is to use affordance theory as a framework for training and education. The idea of affordances as individually perceived opportunities could be a basis for developing and articulating an understanding of oneself as a teacher. This includes comfort levels and interest with outdoor experiences, nature, and risk-taking. One participant in this study described: "my co-teacher who is not on board with the

outdoors." Affordance theory (Gibson, 1979) is a framework for gaining personal understanding regarding teaching as well as an awareness that there are differing viewpoints and ideas regarding situations. An additional implication for practice is to include two topics in ECE college courses. One topic is that forest schools/fully outdoor schools as an approach to ECE, similar to Montessori and Reggio. The other is to specifically address that the OLE as a place of learning. Doing so may send a message that fully outdoor programs are one way to approach ECE. Furthermore, the underlying message that outdoor experiences are for all children, including infants, and their teachers, not just those who work in a fully outdoor program, may contribute to social change regarding teaching practices in the OLE. Change in teaching practices can impact children's experiences and learning. Infusing children's learning in the OLE to courses such as environmental design, health and safety, curriculum, and exceptional children shows that the OLE and outdoor experiences are part of the teaching and learning process.

Conclusion

In this study 12 teachers' voices and ideas were expressed to answer the main research questions regarding teaching and learning in the OLE, specifically with using affordances. All of the participants valued children's outdoor experiences and saw the OLE as a place of learning. It is my hope that the results of this study can be used as a guide for future research and as insight for providing in-service and pre-service training and education. It is also my hope that the underlying message of nature experiences are for all children, not just those who attend fully outdoor programs, and this includes

children with disabilities, has been shared through this study. I appreciated hearing from the teachers who participated in this study and it is my intention to use what I have learned in my own teaching practice as a college instructor as well as to share the results wherever it is appropriate.

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Appendix: Interview Protocol

Title of Study: Early Childhood Education Teacher Experience and Knowledge Regarding Outdoor Learning and Affordances

Interviewee Name:

Date/Time of Interview:

Introduction

My name is Jennifer Karshna and I am a PhD student at Walden University. I am conducting a research study on how early childhood education teachers support children's learning in outdoor settings. I am also a college instructor and as such I am interested in learning more about ECE teachers experiences with children in outdoor settings in order to gain a better understanding of creating college courses that are beneficial and interesting.

As an ECE teacher you have insight and knowledge about children and your teaching. The purpose of this interview is to collect information regarding your experiences with and knowledge of supporting children's learning in an outdoor setting. All of your answers and your identity will remain confidential. The interview will be recorded and transcribed and the transcription will be sent to you to review for accuracy. Your participation in the study is voluntary. If you have any questions, concerns, and/or want to exit the study at any time during the interview, please let me know. Do I have your permission to record the interview?

1. How long have you been teaching?

2. What type of ECE program do you work at? (full or part day, Head Start, private, public)
3. What is your role as a teacher? (head teacher, assistant teacher, co-teacher, other)
4. If you could tell me anything about your own (childhood memories or as an adult) outdoor experiences, what one or two things would you most like to share?
5. What do you see as the benefits for children of nature and of outdoor experiences (including playing outside in the backyard or in an early childhood education (ECE) program outdoor space)?
6. If I observed you in an outdoor environment (such as a playground at your program or a park you visit on a regular basis with your classroom) with young children, what would I see you doing?
7. In what ways are children learning when they are engaged in child-initiated (things children do on their own) experiences in an outdoor environment? Teacher-led (things teachers plan and lead) experiences?
8. Affordances are opportunities. Each person sees affordances differently. An example of an affordance is a basket: one person may see the basket as something to use to carry items around and another person may see the basket as a decoration. An example of an affordance in an ECE indoor setting is a child-sized chair in the dramatic play area: most often it is seen as a place to sit but a young child may see it as a way to reach something high up, or, might turn it over and use it as a high chair for a doll. As a teacher, what are some of the affordances (opportunities) for teaching that you see in the outdoor environment?

9. Think about what you have observed children doing in the outdoor environment. When answering this question, try to take the child's perspective and consider what the child is doing on his/her own. In what ways do you see children using affordances in the outdoor environment?
10. What can you tell me about your experience with planning and implementing teacher-led activities in an outdoor environment? This includes the outdoor space at your ECE program as well as a park, wooded area, or other outdoor environment in which you have been in with the children in your classroom.
11. Look at the picture A. If you saw a child using or playing with this item, how would you respond? (Imagine what you think a child is likely to do with the item.)

12. Look at the picture B. If you saw a child using or playing with this item, how would you respond? (Imagine what you think a child is likely to do with the item.)

13. Look at the picture C. If you saw a child using or playing with this item, how would you respond? (Imagine what you think a child is likely to do with the item.)

14. Look at the picture D. If you saw a child using or playing with this item, how would you respond? (Imagine what you think a child is likely to do with the item.)

15. What are you interested in learning more about regarding supporting children's learning in the outdoor environment?

16. Is there anything else you would like to tell me about affordances in the outdoor environment as teaching and learning opportunities?

Conclusion: I appreciate you taking time to talk with me and answer the interview questions. Your answers are helpful and together with the information from the other interviews will provide insight regarding ECE teacher experiences with and knowledge of supporting children's learning in an outdoor learning environment. Please remember your identity and the information you provided will remain confidential. I will send the transcription via email for you to review for accuracy. Thank you again for participating in my study!