

Understanding the outdoor play environment for preschool children in child care:

Should we just let 'em go?

Kelly Ross Kantz

A dissertation submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Major: Human Development and Family Studies (Early Childhood Special Education)

Program of Study Committee:
Mary Jane Brotherson, Co-major Professor
Christine C. Cook, Co-major Professor
Leslie R. Bloom
Gayle Luze
Lynn Paxson

Iowa State University

Ames, Iowa

2004

UMI Number: 3145656

INFORMATION TO USERS

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleed-through, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

UMI[®]

UMI Microform 3145656

Copyright 2004 by ProQuest Information and Learning Company.

All rights reserved. This microform edition is protected against unauthorized copying under Title 17, United States Code.

ProQuest Information and Learning Company
300 North Zeeb Road
P.O. Box 1346
Ann Arbor, MI 48106-1346

Iowa State University

This is to certify that the doctoral dissertation of

Kelly Ross Kantz

has met the dissertation requirements of Iowa State University

Signature was redacted for privacy.

Co-Major Professor

Signature was redacted for privacy.

Co-Major Professor

Signature was redacted for privacy.

For the Major Program

TABLE OF CONTENTS

ACKNOWLEDGMENTS	vi
ABSTRACT	viii
CHAPTER 1. GENERAL INTRODUCTION	1
Inspiration	1
Purpose	6
Method	7
Significance	8
Setting	8
Dissertation Organization	11
CHAPTER 2. LITERATURE REVIEW	13
Understanding Outdoor Environments	13
Historical Perspective on the Design of the Outdoor Environment	13
Types of playgrounds	17
Loose parts	19
Children's Outdoor Play from an Historical Perspective	21
Play Outdoors Today	25
A connection to nature	25
Indoor-Outdoor	27
Environmental stewardship	30
Play settings	31
Flow	32
Affordances	32
Aesthetics	33
Movement	34
Interaction	36
Including and accommodating children with special needs	36
Safety	40
Assessment	41
Teacher training	42
Summary and Conclusion	43
CHAPTER 3. UNDERSTANDING A QUALITY OUTDOOR ENVIRONMENT FOR PRESCHOOL CHILDREN IN CHILD CARE	47
Abstract	47
Introduction	48
Method	56
Findings	86
Discussion	94
References	102

CHAPTER 4. OPPORTUNITIES FOR SELF-DETERMINATION IN THE OUTDOOR ENVIRONMENT FOR PRESCHOOL CHILDREN IN AN INCLUSIVE CHILD CARE CENTER	105
Abstract	105
Introduction	106
Method	112
Findings	136
Discussion	139
References	142
CHAPTER 5. GENERAL CONCLUSIONS	146
My Biases	146
My Perspectives	147
Sample	148
Similarities and Differences Between Inquiries	149
Conclusions	150
Recommendations	152
APPENDIX A. CONSENT FORMS	154
APPENDIX B. SAMPLES OF DATA GATHERED	158
APPENDIX C. ASSESSMENT SCALE AND GUIDELINES	167
REFERENCES	190

ACKNOWLEDGMENTS

I would like to thank Drs. Mary Jane Brotherson and Christine Cook for their unending support and expertise in helping me complete this dissertation and degree. They have been unwavering advocates, leaders, examples and friends. Special thanks to Dr. Gayle Luze for her patience and support. I aspire to be more like her as she has inspired me on countless occasions. My other committee members, Drs. Leslie Bloom and Lynn Paxson, have provided assistance and guidance throughout my tenure at Iowa State University. Thanks also to Dr. Carla Peterson for serving as a mentor. I would like to thank Drs. Linda L. Hestenes and Deb Cassidy from the University of North Carolina at Greensboro, and Dr. Karen DeBord from North Carolina State University. These outstanding faculty members served as committee members during the first half of my pursuit of this degree. They kept me motivated and provided valuable insight and guidance throughout my studies.

Thanks go to colleagues and friends who have supported me in a variety of ways during this research. Beth Fleming opened her home to me, and has shared great coffee and offered continuous encouragement. Robin Moore, Nilda Cosco and Janet McGinnis showed me the importance of outdoor play. Janice and Paul McKenna are great friends who have taught me that one has to keep playing and learning. Della Williams has inspired me to work to live the life I want. Thanks for sharing Sleepy Goat Farm where we renewed our relationship with nature.

My family has been the overwhelming inspiration for my continuous pursuit of education. My parents sacrificed so that I could benefit from higher education and enjoy the wonderful opportunities that led me here. No words could express my deep gratitude. Both my parents worked countless hours so my sister and I could travel, study, and explore. My

mother and first teacher, Sue Ann Ross, taught by example; including innumerable Girl Scout and church youth group activities like camping in the rain and snow. She did all this to help us grow into strong and responsible women. My father, David G. Ross, built our home on his family's homestead. We had opportunities to wander, swim, and experience the outdoors there. He opened our home to unique and interesting people, awakened many nights to resurface the skating rink through cold western New York winters, and taught us how to mow the lawn correctly. My sister, Lynn C. Ross, shared in all of my growing up adventures. Anita and Rick Moreau have kept me in their prayers and listened willingly to my playgroundology rantings. The entire Kantz-Gross-Moreau-Silva-Smith family has openly accepted and supported the meanderings that have brought us to this place. Mary Lu and Barry Harlow have provided unconditional love that has made lasting memories and contributed to my life journey. I am forever indebted to them for making me watch Neil Armstrong walk on the moon, among many other things.

There are no words that can express the unconditional love and tremendous appreciation I have for Bill, my partner, best friend and soul mate. He provided support for this endeavor in every way imaginable. He inspired, cajoled, nagged, (and nagged and nagged), and made me laugh to help me through this. *We did it!*

ABSTRACT

The purpose of this study was to understand the outdoor play environment provided for preschool children in an inclusive early care and education center. This qualitative examination sought to determine what children and teachers do when they are outside and how the indoor and outdoor curricula are integrated. Supports and barriers for a quality outdoor play environment were identified. In addition, opportunities for development of self-determination in the outdoor environment were studied. This research sought to determine the opportunities children are provided to make choices, practice overcoming challenges, and develop friendships during outdoor play and learning.

The importance of an outdoor play area with numerous settings for play is accepted as the standard in the field of early care and education, however, outdoor play is arguably the most neglected aspect of these services. An emphasis on providing a natural setting for outdoor play is important since greenspace has been found to have beneficial influences on behavior and emotions.

Self-determination is the ability to make meaningful life decisions. This study examined self-determination opportunities for young children in the outdoor environment of an inclusive early care and education center.

The findings suggest that children are actively engaged while outdoors and have opportunities to make choices among a variety of different types of play and learning activities provided by teachers and the planned environment. A significant concern for safety has resulted in the exclusion of opportunities to overcome physical challenge, such as climbing on boulders or overhead ladders. Other opportunities, like playing on swings, are

also not available as a result of concerns for safety. Opportunities that support interactions between peers encourage the development of friendships. The environmental design provides play settings that accommodate small groups or pairs in a variety of types of play, are completely accessible, and support children moving from play setting to another with ease. The indoors and outdoors are connected through planned materials and activities. Teachers' provision of high quality services outdoors are supported by the administration through fiscal planning. Barriers include teacher workload, lack of training, and low prioritization of the outdoor environment by stakeholders.

CHAPTER 1. GENERAL INTRODUCTION

Inspiration

I am a middle-aged, white woman. I grew up in a bedroom community, but on land that was a part of my great-grandparents' farm. I have one sister who is about a year younger than me. We had woods, a pool, an orchard with various fruit trees, a vineyard, a skating rink in the winter, and a large garden. We went fishing at a nearby lake and camping in all seasons, sometimes in our back yard. There were not many children near by, since we didn't live in a neighborhood, but this presented opportunities. We had to be creative. We made up friends and settings for our play. Frequently the dogs, cats or various other members of our menagerie would become playmates too. We entertained ourselves. We played!

While most of our outdoor time was initiated by strong encouragement from our mother, "It's a beautiful day. Go outside and play," invariably the opportunities before us once we were outdoors made TV pale by comparison. Our outdoor world was three-dimensional and stimulated all of our senses. My favorite memory is playing in the woods behind our home. I could become anything adventurous that I wanted to be: a rock climber, an explorer, anything! I could pretend to live self-sufficiently off of the land, make forts, investigate birds' nests, make bark rubbings and classify the trees or moss, or just get lost in all of these sensory experiences. The textures, sights, sounds, smells and even tastes remain in my memory today.

My experiences may not resonate with everyone. I was also exposed to the plethora of opportunities afforded us in cities like Toronto, Washington, DC, Fort Lauderdale, and Buffalo, New York. As a child, I was given opportunities to enjoy the architecture, museums,

libraries, public transportation, and the diverse cuisines and cultures that intersected in these fascinating places. The sensory experiences in cities are unique and wonderful! Cities unquestionably provide tremendous opportunities for everyone and I enjoyed my exposure to the various places to which we traveled during my formative years. As a result of the majority of my positive play experiences having been in a more rural and natural setting, my biases for extensive green space were developed. I have experienced the restorative affects of nature first hand and I am committed to young children enjoying outdoor play in predominantly natural settings as a result.

These opportunities are not available for many of the generation of young children today. My nephew, for example, lives in a suburb of Washington, DC. He hears the sounds of traffic constantly. Last summer the people in his neighborhood were “imprisoned” in their homes by the killing spree of a sniper. He cannot play outside in his backyard for long periods of time as a result of his parents’ fear for his safety. He lives in an affluent neighborhood. His back yard is about 25 feet wide and 100 feet deep. There are two trees and one of them is ornamental. He won’t be able to climb trees there. There is a garden. Sam is not at home during much of the work week anyway. Like so many children in our country, he is now in child care.

The current generation of children growing up in the United States has a different life experience than those of us who grew up thirty years ago or more. The vast majority of today’s children spend much of their day, 8-10 hours daily during the workweek, in group care. They typically spend less than one hour daily outside. As a result of this trend, there has been a resurgence of interest in the early childhood outdoor environments (Children’s Defense Fund, 1990; Herrington, 1998; Travers, Goodson, Singer, & Connell, 1980). “The

playground at the child care center has become the surrogate backyard known to a previous generation” (Herrington, 1998, p. 191.)

My own experience mirrors these issues. I have more than 15 years of experience providing and managing early care and education services for young children. I would greet children five days weekly at 6:30 a.m. when they arrived at the centers in which I worked. Some of these same children would be at the child care centers in the evenings past 6:00 p.m., when the centers closed, waiting for their parents to pick them up. These preschool children would typically spend about 40 minutes outside daily. Their time outside did not include days when the weather was rainy, chilly or snowy. In retrospect, I feel like these children were robbed of a youth filled with the joy I had known outside. We have forgotten about the value of playing outdoors, in all kinds of weather, or about play altogether.

The following journal entry from the beginning of the undertaking of this work offers insight into my thoughts about the difference between children like Sam’s life experience and my own. It speaks to my inspiration for this study, as well as my biases.

September 4, 2002 Sam’s second Birthday! Families are such interesting things. As I persevere over my dissertation proposal – just the question – I think about Sam growing up. How, during these formative years for him, his mother is so driven. They want him to be successful and his parents have worked for that since before he was born. I admire their diligence and commitment, but their lack of joy scares me. I think that’s one of the reasons I’m so interested in outdoor environments. Some children never have the opportunity to really play and explore in nature – some because they’re too poor and some because they’re too affluent.

As an adult, I still enjoy the opportunity to escape into the natural world that exists so sparsely in most places. I will forever have my childhood memories of playing in the woods, the knowledge that was constructed and the respect for our natural resources that came out of these experiences. During a particularly adventurous period in our life, my husband and I

chose to manage a goat farm. We knew nothing of caring for farm animals. We knew we wanted to savor life in the rural area in which we lived and this opportunity spoke to us when presented. (It said, "low rent".) We thought even if we disliked the experience we could survive anything for a year. Four years later we tearfully departed the little ramshackle farm for our next destination. Our sense of commitment to nature and appreciation for all that we can learn from her was renewed. We also had countless happy memories of fishing and canoeing in "our" pond, wandering through the woods as the goats climbed the fallen trees, watching the wild turkeys fly away when we approached, realizing we were swimming with moccasins, fawns running through the front yard, feeding day-old kids, making s'mores by a fire, and the list goes on. A relative reflected following a visit, "This is like coming to camp."

As an experienced early childhood professional, one of my first thoughts during many new or unique experiences is, "Wow, this would make a great field trip." When the potential field trip turns out to be inexpensive or free, I usually spread the word to my likeminded counterparts to let them know about the opportunity. This is exactly what happened during the first kidding season we spent at Sleepy Goat Farm. I invited several child care centers and preschools to visit. Being the learning focused early childhood professional, I organized the setting into centers. The children had the opportunity to feed the yearling does peanuts, visit and smell the bucks, bottle feed the kids, milk a doe, and have goats milk and goats milk cheese on crackers for snack. While my biases are evident again, the following entry in my journal as I began preparing for this study reviews my thoughts about the children's unique experiences at the farm and my reaction which also served to inspire this research:

When kids came for field trips they were in such awe. The older they were the less interested they were. The shorter their attention span in each learning setting was as they reached and passed school age. The less they tried new

things and the more they wanted to be entertained. Nobody passed two years would try the milk without making a smirking face. I think we squeeze a sense of wonder out of most kids by the time they're six or seven. I think the reason this occurs is because kids are taught that video games, computers and television (Yes Mom, I understand why you put a baseball bat through our TV now.) are more exciting than some of the natural choices.

In my experience within the past 20 years, I have been frustrated by children's need to be increasingly entertained as opposed to having an interest in exploration and discovery for themselves. Frequently, this is more prevalent in children of means than those who have experienced economic disadvantages in their families. I fear that we may work for academic success, structure, and fill children's time so thoroughly that we may have eliminated their chances for independent exploration in an attempt to keep them safe and occupied so we can accomplish our tasks. We have taught some of them that adults do not play or converse with children; most just work to keep them safe. Other adults are to be feared. By the time children are four or five years old they are well aware of the expectations of them and their routine. Unusual activities or disruption to that routine may make them uncomfortable and frustrated, particularly if they do not have access to their Gameboy®, computer, or TV within which to escape. I believe adults should be engaged with children in play. Relationships with children and positive play experiences with them where adults demonstrate a *joi de vivre* is how best to protect children. Adults must provide opportunities for children to maintain their "sense of wonder" (Carson, 1956) and demonstrate that they, too, still enjoy play and learning. These biases have also motivated this inquiry for me.

The benefits of experiences outdoors, and specifically in natural environments, have been well documented (Faber Taylor, Kuo, & Sullivan, 2001; Fjortoft, 2001; Rivkin, 1995, 1997). Unfortunately, there is often little attempt at exposing preschool children to natural

environments for extended periods, or even on a daily basis. Preschool playgrounds are generally not rich with vegetation to provide an overall sense of a natural setting for children (Bowers, 1990). Little training occurs for teachers in the effective use of the outdoor classroom (Collier, 1985) or the benefits of play outdoors (Hendricks, 2001). The playground is frequently viewed as a break time for teachers who have overwhelming demands on time and energy placed upon them throughout a day working in a childcare center (Esbensen, 1990). Frequently the design of childcare playgrounds is left to an individual whose experience is in working with children, not design. Their focus may be on learning from an adult perspective instead of play as a child (Hendrickson, 2001). Choices are usually made from a catalogue with the direction of the manufacturer's representative (Moore, 1985).

Purpose

The purpose of this research was to study the outdoor play environment for preschool children in a child care center. The specific issues studied include: interactions between the children, the children and their environment, and the children and their teachers, as well as teacher planning and preparation for the outdoors in a natural setting, relative to their mission and philosophy. McAuley and Jackson (1992) argued that the outdoor environment: "should be compatible in aims and values with other classroom policies and the philosophy of the whole institution" (pp. 64-65).

This research was undertaken at a university based child care center in a mid-western town with a population of approximately 50,000. The university which the child care center serves has approximately 30,000 undergraduate and graduate students combined. The specific setting is described in the Setting section.

Method

Ethnography served as the method to study the outdoor environment for preschool children in this inquiry. Teachers and the director participated actively. Collaboratively, we developed the philosophical framework for outdoor play and learning, assessed, implemented, and evaluated the outdoor environment. Data examined included self-assessment tools, reflective journals, interviews, videotapes and photographs of outdoor time. The researcher is an instrument of analysis in qualitative research. We cannot approach inquiry without superimposing our values and history upon what we see and reflect (Denzin & Lincoln, 1998). That said, it is important to note issues about my experience that most certainly impacted on my data collection and analyses, in addition to my childhood experiences which have been previously stated. I have studied early care and education for children with and without disabilities for many years. I have more than 10 years of experience providing direct services in child care and early intervention. I have managed center based child care services for children with and without disabilities. I am not a parent. As a result, I cannot fully understand the joys or pains associated with raising a child.

Ethical issues of participants were considered. Respect was demonstrated through clear communication during data collection methods and the research in general, as well as by acknowledging the burden associated with participation. Participants were aware of the lack of anonymity associated with this-study.

The target audience for this study includes primarily teachers of preschool children and directors of child care centers and their advisory or governing bodies and designers of outdoor environments for preschool children. Individuals who prepare people to teach preschoolers or design outdoor environments, licensing and accrediting bodies are a target

audience as well. This research can provide insight into ways of improving the quality of outdoor environments and ways to overcome barriers to quality that are identified (Mills, 2000; Stremmel, Fu, & Hill, 2002). It is hoped that parents and preschool children will experience positive outcomes from teachers who glean information from the study.

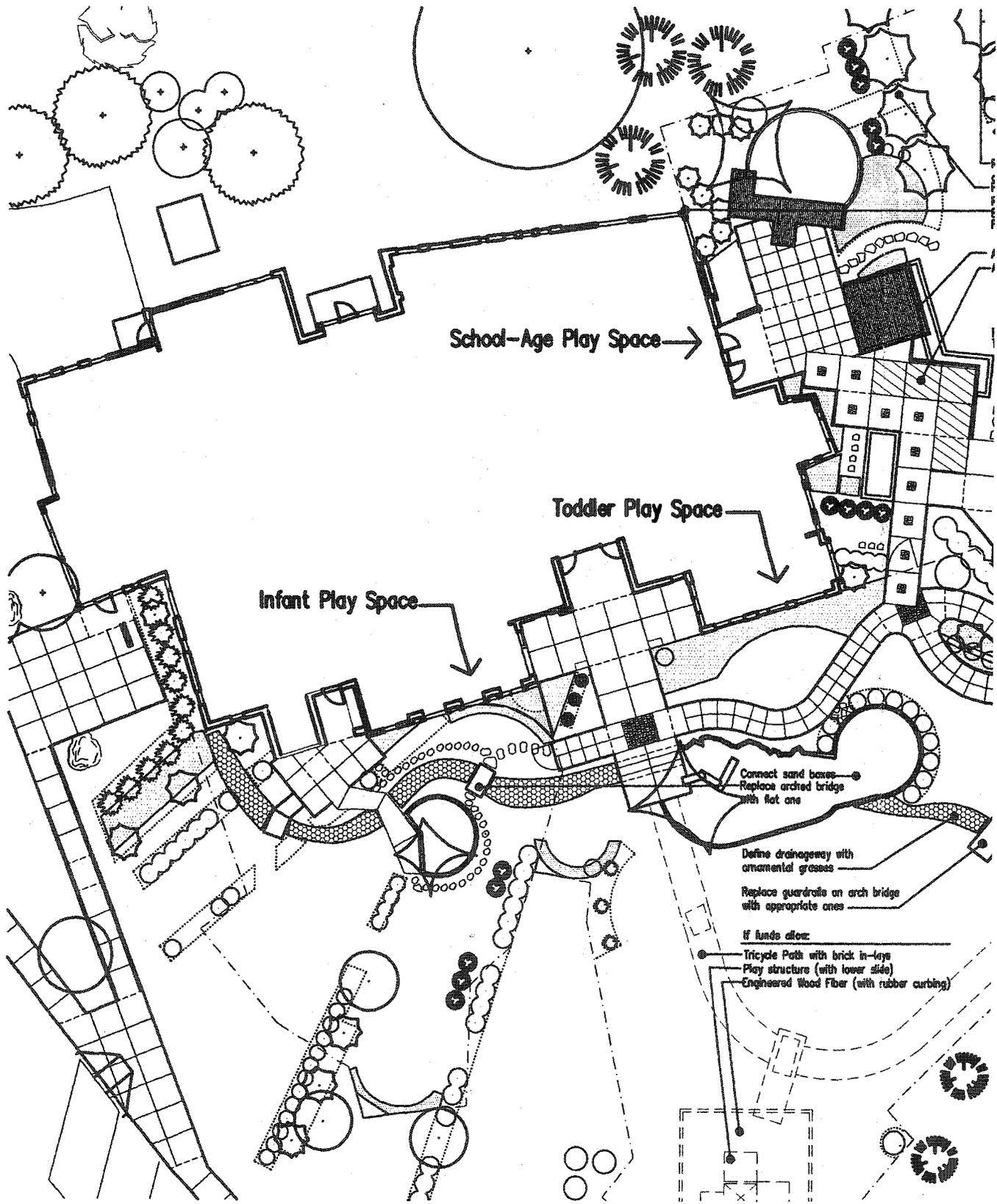
Significance

Little research exists in the preschool or child care teacher preparation literature that is set in the outdoor environment. This investigation provides information regarding strategies to facilitate an outdoor environment that is a natural setting and an integrated component of the curriculum through play. Outdoor environments have basically been studied from only three distinct perspectives previously. These have included; assessment of various types of playgrounds relative to others, safety issues such as design and management, and play in the outdoor context (Dempsey & Frost, 1993).

The use of participatory methods has been infrequent in child care settings. Opportunities for self-reflection and development of a greater bridge between research and practice in child care have the potential for great improvements in quality. Activism to enhance issues that contribute to quality in child care such as on-going professional development, and retention of trained teachers can be accomplished more effectively with input from the individuals who provide the service on a full time basis.

Setting

The setting in which this research took place is an outdoor environment designed for use by toddlers and preschoolers (see Figure 1). It provides an overall sense of being in a natural environment through the variety and amount of foliage available to the children. The



group of children that provided the focus for this research has direct access to their outdoor environment from their classroom. They enter the outdoor area onto a covered cement patio that provides convenient opportunities for transitional activities to the outdoors. This is also valuable space for activities like sidewalk chalk drawing or snack, regardless of whether or not it is raining. It provides adequate space for an entire class to remain sheltered from the elements. Immediately to the left of the patio is a grassy area. This flows the length of the windows in the classroom and can provide excellent opportunities for establishing a connection with the indoors through gardens, bird feeders, or other activities.

Across from the grassy area the cement trike path continues circuitously from the patio around the entire play area. A variety of textures are stamped in the cement at various places around the path to provide additional sensory experiences for children using wheeled toys. On the other side of the path is a large sand play area, some of which is covered by a lattice pergola. A water play trough with various heights is in the sand play area adjacent to the entrance to the outdoors from the classrooms.

Proceeding around the path in a clockwise fashion there are multiple plantings of low bushes. These offer the children a sense of division among play settings while allowing adults the opportunity to see the children. A storage building is located on the path to provide easy access for retrieval of equipment. The path continues on past a flat bridge with a grassy area, which includes mounds and small, slight hills. To the left, prior to the bridge, the children have an additional sand play area connected to an open grassy space by an arched bridge. The area is well shaded with mature trees. Again, ample foliage divides play settings. Further up the path we have a stage on the left. This provides opportunities for dramatic play when materials such as dolls or other accessories are brought out. There is another small

pergola adjacent to the stage to provide a nook for children to interact and gain a sense of privacy while outdoors. There are young trees to the left of the pergola that will provide shade in the years to come. To the right of the path is another grassy area that is used for group games, water play in small pools or reading in the sun. There is a small climber that is approximately 36 inches from the ground in the upper corner of the play space. It includes two steps, a domed window and a curved slide. It is frequently used for dramatic play. Surrounding the climber is a fall zone with 12 inches of wood mulch. There is a large boulder for climbing and sitting near the climber with additional plantings to separate the infant play area visually. There is an additional narrow grassy space that accommodates easels or a sensory table in the sun as we approach the entrance to the classroom.

The entire area is surrounded by chain link fence. Outside of the fence is a huge grassy area separating the child care center from the closest university building or a grassy strip separating the play area from the sidewalk and parking lot.

Dissertation Organization

The following chapter, Chapter 2, provides a review of the literature on outdoor environments for young children. Chapter 3 is comprised of a manuscript prepared for submission to *Environment and Behavior* on understanding a quality outdoor environment within a child care setting. Chapter 4 is also comprised of a manuscript. It examines opportunities for self-determination in the outdoor environment of an inclusive child care center and will be submitted to the *International Journal of Early Years Education*. The final chapter, Chapter 5, discusses the findings of both articles. Implications for children, families and providers of child care services are discussed, as well as implications for future research.

The appendixes include samples of photograph and video journals, samples from other reflective data, a site plan and other information that support the findings.

CHAPTER 2. LITERATURE REVIEW

Understanding Outdoor Environments

The purpose of this chapter is to discuss the current literature about outdoor play environments for young children. The chapter begins with an historical review and descriptions of outdoor play settings for young children. The importance of loose parts, materials children can manipulate while playing, is discussed. This is followed by a brief discussion of how play has been viewed historically, and how play impacts children. A variety of theoretical perspectives will be presented briefly. The current perspective on essential design components and keys for implementation of a high quality outdoor play environment are then reviewed. The importance of a connection with nature, play settings or zones, affordances, flow and aesthetics are discussed. The benefits of movement and interaction outdoors are presented. Safety in the outdoor environment is essential and is reviewed briefly. Furthermore, on-going assessment of any play setting for children is essential to enhance and maintain its quality. A brief discussion of the assessment of outdoor environments is included. Teacher training for implementation of an effective outdoor play environment is also reviewed. The perspectives of experts presented consider play essential to our health and happiness. These experts share the belief that it is important for the moment in which it occurs, as well as for the future it helps to build.

Historical Perspective on the Design of the Outdoor Environment

The beginning of the evolution of defined outdoor play environments in the United States remains obscure. Henry Barnard, a leader in school design in his era, described a play yard for young children in, *School architecture* (Barnard, 1950). In his description Barnard

includes swings, vaulting ropes, building blocks, storage vessels so the children can return their equipment, and engaged teachers. Teachers were involved in the play for children in his description, as well as to protect children from injury (Brett et al., 1993). A variety of foliage is present in his renderings. It provides an opportunity for children to experience a garden-like setting for play.

Clarence Rainwater, a pioneer in playgrounds, described the establishment of a play yard in Boston in 1868, based on the German philosophy of playgrounds for physical fitness. Sandgartens were introduced by Dr. Maria Zakerzewska in Boston in the late 1800s (Hartle & Johnson, 1993). Sand yards or gardens are made up of areas for small groups of children to play together within bordered sandboxes. All of these settings were generally targeted for children living in poverty and at tremendous risk for crime. The impetus for these changes was legislation against child labor and requiring education for all children (Brett et al., 1993; Hendricks, 2001).

During the same time period, based on the principles espoused by Friedrich Froebel and demonstrated in his kindergartens, others established outdoor play environments that met the overall developmental needs of a child, not just physical fitness. Plants, animals, sand, water, building materials, as well as stationary play equipment were components of these play yards. Opportunities for development in cognition, socialization, emotional, and physical skills were available in these planned outdoor environments. Unfortunately these environments were developed only by affluent families for use by their children and as a result were not widely available. Their design components were not revisited until the late twentieth century (Hartle & Johnson, 1993).

Playgrounds were being developed in New York City as well as in Boston in the late 1880s. Legislation was enacted and funding allocated in New York in 1887 to establish playgrounds throughout the city. Unfortunately, even after several years no work had been completed on any playgrounds. It was not until journalist Jacob Riis advocated through his book, *The children of the poor*, that playgrounds began to be developed for children who previously had no opportunity to play in natural or safe settings, like parks. Riis postulated that children were learning from the opportunities with which they were presented, regardless of whether or not they were learning positive skills. He believed that if presented with opportunities for play resulting behavior from the children, as they matured, would be more respectable and functional within the norms of the society of the day. It was thought that, “play represented a civilizing force in the education of the child” (Brett et al., 1993, p. 20). Soon similar opportunities for outdoor play were available for children living in Chicago and then other cities across the country.

Urban children were able to exercise their muscles and natural curiosity at vacant lots or construction sites. Frost and Klein (1979) described these first urban playgrounds:

These lots were used as garbage dumps by local residents and contained a wide assortment of refuse and junk, including the kitchen sink. Children would spend hours constructing forts and clubhouses, and often the construction would be aided by building materials and tools from a nearby construction site. Abandoned automobiles became airplanes and submarines, packing crates became castles and palaces. Caves and tunnels would be dug, and potatoes would be roasted over bonfires. At dinner time parents would have to drag their children home. In an attempt to keep children off of the streets, well-intentioned adults began to build neighborhood playgrounds. (pp. 201-202)

Little change occurred in the development of play yards until after World War II. Physical development and exercise became the focus of defined outdoor areas for children.

Lady Allen of Hurtwood (1968) described the chronological changes in outdoor play areas following the end of World War II in her book, *Planning for play* (pp. 18-19):

1. The prison period – These playgrounds resemble prison exercise yards. They consist of a barren expanse of concrete or asphalt surrounded by a high fence. Lady Allen refers to these as “an administrator’s heaven and a child’s hell.”
2. The ironmongery period – During this period of playground construction large metal climbing structures, slides, and other pieces of metal equipment were placed on asphalt play areas. The common activity on this type of playground was climbing to the top of the metal structure and then falling or getting shoved to the pavement below. “This is the major cause of serious injury on playgrounds today. Unfortunately these playgrounds of concrete and steel have lived up to the claims of their designers and have proven to be indestructible” (Frost & Klein, 1979, p. 202).
3. The concrete pipe period – Many playgrounds contain concrete sewer pipes of various sizes and dimensions. Playground builders intended for children to crawl through and on top of the pipes. Sometimes the pipes are covered with dirt to form a mound. What initially seemed to be a good idea has proven to be extremely hazardous. Concrete is a brittle material. It chips at the edges which are then sharp enough to cut a child playing on the apparatus. Climbing on or through these concrete culverts can quickly result in knees or elbows being skinned by this abrasive material as well.
3. The novelty period – At the other end of the continuum are the playgrounds that Lady Allen refers to as “over-elaborate, over-clever, too slick, the pride of architects” (Frost & Klein, 1979, p. 202). These playgrounds often include play sculptures that are nice to look at, but are not very functional and usually hazardous. The novelty of these static playgrounds soon wears off (Frost & Klein, 1979).

For most of the early 20th century, the focus of public funding for outdoor play opportunities in residential areas continued to be on children living in poverty in densely populated urban settings. It was assumed that children living in small towns and rural areas could explore their natural surroundings, discover, create and experience the landscape through every sense with little intervention from adults. No doubt, for some children living in more rural settings, play was neither natural nor idyllic, since children working in agriculture continued well after child labor laws precluded children from working in industrial settings.

Nevertheless, a focus on outdoor play settings for children living in rural areas did not occur until children began spending significant time in child care. This is a noteworthy void in the literature. The unintended message is that children with some opportunity for exposure to natural settings do not need additional planned environments.

Types of playgrounds

In the period that has followed the phases outlined by Lady Allen, a variety of types of playgrounds have been designed. (Brett et al., 1993; Dannenmaier, 1998; Frost & Klein, 1979; Hendricks, 2001; Moore, 1997, 1998; Rohane, 1981). Landscape designers and architects, as well as child development professionals and educators, planned for effective play environments outdoors (Brett et al., 1993; Frost, 1992; Frost & Klein, 1979; Frost & Sunderlin, 1985; Hartle & Johnson, 1993; Johnson, Christie, & Yawkey, 1987; Miller, 1972; Rivkin, 1990). According to Dempsey and Frost (1993, p. 315), "The labels or designations for playground types are essentially arbitrary, for no two are alike. Even within types, there are differences in space, natural features, equipment, materials and so on." Outdoor environment types may include traditional, contemporary, adventure, creative, and comprehensive playgrounds or variations thereof.

Traditional playgrounds are characterized by large pieces of equipment made from metal or wood. Typically these structures include things like swings, slides and climbers, among other things. These outdoor environments tend to be based in a "play as physical exercise and recreation" philosophy (Frost & Klein, 1979; Rohane, 1981). The focus on gross motor play, almost to the exclusion of development in other areas, may be a result of the

philosophical base and design of traditional playgrounds. It is much more limited than the perspective of a comprehensive outdoor learning environment.

Contemporary playgrounds are described as “novel forms, textures, and different heights in aesthetically pleasing arrangements” (Hayward, Rothenberg & Beasley, 1974, p. 134). These outdoor environments were introduced in the late 1950’s. In the 1960s, the concept of contemporary playgrounds was refined. These more sophisticated playspaces were denoted Designer playgrounds. Figure 2, photographed by Michael Carlebach, illustrates one component of a designer playground. Gross motor development and exercise are still the major objectives of these playgrounds. They accomplish this in a context that values aesthetics such as color, texture, and form (Brett et al., 1993; Frost & Klein, 1979; Rohane, 1981).

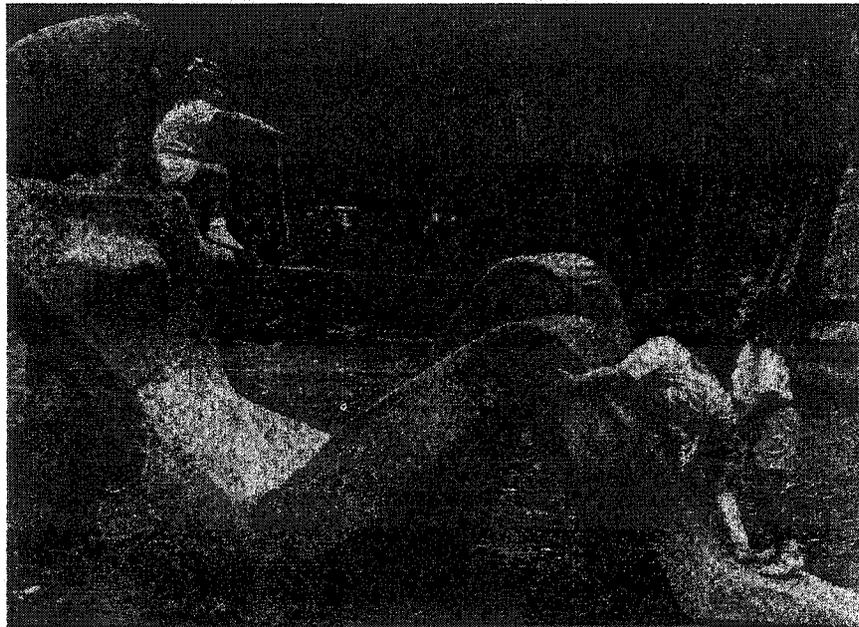


Figure 2. Designer component of a playground: Gross motor control

Adventure playgrounds were essentially inspired by urban children creating play with materials available to them in vacant lots. This included building structures. This concept has developed into learning environments with adult facilitated play that may include animals and their habitats, recycled materials such as tires, water, dirt, or other available resources (Rohane, 1981). They are characterized as places where children are free to do things they may not be able to do in any other place, given the children's restrictions of space and resources (Frost & Klein, 1979). Adventure playgrounds have a structure to enable children to play there in all types of weather. Materials from a variety of developmental domains are available. Children may be able to play with dress up clothes, paint, sculpt, dance or garden. Play facilitators are there as supports and will not interfere in children's play and learning, unless needed or requested. Their role "is to facilitate a safe, happy experience for each child while interfering as little as possible" (Frost & Klein, 1979, p. 204).

Loose parts

The incorporation of loose parts is central to the philosophy of adventure playgrounds. The phrase loose parts was first used in 1971 by Simon Nicholson. In his article, "How not to cheat children: The theory of loose parts," Nicholson (1971) described children's love of interaction with and exploration of various materials and shapes: "sounds, music, and motion; chemical interactions, cooking and fire; and other people, animals, plants...with all these things all children love to play, experiment, discover and have fun. The term is defined as essentially anything with which a child can interact that is not affixed" (p. 33). Loose parts include both natural items, such as sand, water or sticks, and manufactured pieces like creative drama props or blocks.

Nabhan and Trimble (1994, p. 26) talk about the value of found objects, which are also loose parts:

Found objects from nature can define a home and nurture self-esteem. Think back to your feelings as a child: wandering, you find wonders, identify them (sometimes), take them home to your room, show them off to friends, and protect them. No one has a conch shell or chip of obsidian or fragile wisp of snakeskin or sack of chestnuts or nub of deer antler just like you. Your possession is unique; thus, you are unique. (p. 26)

Loose parts enhance play for children in virtually any environment and are an essential component of an environment for play (Brett et al., 1993; Dien, 1991; and Moore, Goltsman & Iacofano, 1987, Olds, 2000).

Like adventure playgrounds, “a creative playground, is constructed primarily from scrounged materials such as tires, lumber, telephone poles, railroad ties, cable spools and scrap pipe” (Frost & Klein, 1979, p. 131). “The playground includes permanent equipment, provisions for sand and water play, and an array of loose parts to accommodate all forms of play. Areas for special activities such as art, gardening, and caring for animals are often included” (Frost & Klein, p. 131). Creative playgrounds are typically constructed as community projects. These play environments, not unlike adventure playgrounds, offer challenges physically, socially, and cognitively for the children and families who participate in their use. Children are active participants in the exploration and discovery of creative playgrounds, which offer numerous choices for play and learning. Children’s imaginations are challenged through the use of creative playgrounds. Opportunities for children to develop a sense of self through success or failure in a variety of developmental activities characterize the underlying philosophy of a creative playground (Frost & Klein).

Comprehensive playgrounds, as the name implies, include configurations of sports fields and anchored equipment for development of gross motor skills set among pathways, water features and rich foliage. Loose parts play a significant role since cognitive, social and emotional development, in addition to physical development, are key in comprehensive playgrounds. Play and learning together is the philosophical foundation for planning and use of comprehensive playgrounds. (Taylor & Vlastos, 1975).

Children's Outdoor Play from an Historical Perspective

Historically the scientific perspective of outdoor play began with four classical theories and then progressed. Classical theories include the surplus energy theory, recreation theory, instinct theory and recapitulation theory (Frost, Wortham & Reifel, 2001). The surplus energy theory explains children's need to play by asserting that when children build excess energy active play is needed to eliminate the surplus. These early theorists believed that obtaining food and shelter did not require all of a person or animal's energy as our lives became easier. Play occurred to use the excess energy. The recreation theory asserts that play occurs to restore an individual's attention following focused work. Jean Jacques Rousseau developed the instinct theory. He claimed that children innately engage in play behaviors beginning in infancy and the complexity of the play increases as development occurs. The recapitulation theory is related to instinct theory in that it supports the idea that play is innate. Recapitulation theory contends that children are acting out activities of their ancestors. All of these theories recognized the positive value of play in children's growth and development, and accepted play as a natural activity (Frost et al., 2001).

Other important theories of play have developed during the twentieth century. Stage theories of development explain the benefits of play. While still controversial, the psychoanalytic theory of play is rooted in Freud's theory, then reexamined and redefined by Erikson. Children move through the stages of the theory as the result of pleasures and rewards combined with positive and negative motives. Play is therapeutic as it provides opportunities for catharsis when children can gain control of emotions through replaying unpleasant activities (Ginsberg, 1993). Piaget's (Piaget & Inhelder, 1969) cognitive theory explains play as dependant upon cognitive development and central to cognitive development. Play changes as the child has opportunities to master skills and thereby develop new or changed cognitive structures. As cognitive structures change and develop relative to the stage of the child's thinking processes, play becomes more complex. Providing a well-planned environment facilitates the child in building his or her own knowledge through play. Social-constructivists, such as Vygotsky, extend the theory to include the necessity of social interaction as a developmental component of play. Scaffolding, defined as mediation or guidance from more advanced peers or adults, can facilitate development through play (Vygotsky, 1978). This perspective supports the inclusion of multiage groups in play environments together. It is different from direct teaching in that it is "a much more subtle phenomenon, one that involves a complex set of social and communicative dynamics" (Stone, 1993, p. 80). While these theories differ significantly in their descriptions of play and learning, all are centered on children moving through stages of development.

Hedges and Montessori view play from somewhat different perspectives. Hedges (2000), tells us that "uninterrupted, free-flow play has the capacity to promote depth of learning in children, teachers must be actively involved in the play in order for this to occur"

(p. 22). In contrast, Montessori (1936) dismissed what some termed “play” as frivolous. She believed that goal-oriented activity was motivating for children and she called this behavior work. She implemented organized environments with materials that were comfortable and to a child’s scale for them to complete their work of developing skills (Montessori, 1936). Her words give us insight into her perspective and remain current:

Education is a natural process spontaneously carried out by the human individual, and is acquired not by listening to words but by experiences upon the environment. The task of the teacher becomes that of preparing a series of motives of cultural activity, spread over a specially prepared environment and then refraining from obtrusive interference. (p. 3)

Learning outdoors was viewed by Montessori as an extension of the indoor environment (Wardle, 2003). Children’s work encouraged by a Montessori program might include gardening, collection and classification of stones or plant leaves, sand sculpture or maintenance of a pond habitat. While Montessori encouraged goal oriented activity for children which was facilitated by a well-planned environment, Hedges recommended that teachers be directly involved facilitate play and learning.

Rudolph Steiner developed the Waldorf Approach, which has a somewhat different perspective on child development and play. This perspective understands the young child as an entity that is taking in everything presented in the environment and actively attempting to develop into its own being. Young children’s development occurs through imitation and practice within an environment where the child “can be physically active in a meaningful way” (Leighter, 1980, p. 327).

Behavior theory and arousal-seeking theory both see play resulting from responses to stimuli in the environment. Behaviorists propose that play is learned behavior as the result of negative consequences or positive reinforcement. In arousal-seeking theory, play occurs to

continue to present challenge and variety in interactions with the environment. "Level of interest and behaviors change to maintain arousal" (Frost et al., 2001, p. 5).

The expression theory of play and competence-motivation theory both assert that play is a means for children to meet emotional needs and demonstrate their abilities. Expression theory contends that children are interested in play in order to express themselves. Play serves to facilitate an individual gaining approval through achievement or creativity (Galgeno, 1973). Competence-motivation theory asserts that we play to demonstrate our abilities of mastery over an environment. Play is repetitious to achieve competence and efficiency in play behaviors. Whether the child is seeking challenge, self-expression, or to develop mastery, positive motivation for play is described in each of the aforementioned perspectives (Frost et al., 2001).

Play fosters development and learning for children. Various perspectives support the concept that different areas of development, such as cognitive or motor, result from play. Some theorists believe that play fosters general well-being through development of motor, cognitive, social and emotional skills (Frost et al., 2001). Hendricks (2001) contended that "asking why people play is like asking why we breathe. Both are essential activities that satisfy needs" (p. 9). Hendricks (2001) continued:

Today we are beginning to realize the importance of play and a playful attitude toward life, both as an intrinsic healthy human drive and as a means of developing, and growing in a complex and stressful environment. Developing, not just in terms of developing muscles and physical skills, but also in terms of spiritual, intellectual, creative, social and emotional growth. The twenty-first century should be the century when it becomes acceptable to be a lifelong player – and when it is recognized that players often enjoy a long life (p. 9).

Regardless of the theory to which they subscribe or whether or not they call it play, designers, planners, teachers and other child development professionals recognize the importance of positive environments in which children can play and develop.

Play Outdoors Today

“Outdoor play is commonly believed to be an important form of play for young children. Teachers include it in their daily plans, parents admonish their children to ‘get some fresh air,’ and the press decries the replacement of traditional outdoor play with passive entertainment” (Theemes, 1999, p. x). Within the following section information about current practices regarding outdoor play and relevant research will be discussed.

A connection to nature

Professionals from various disciplines who value outdoor play for children today support play opportunities that are connected with nature. Great benefits of components that provide a feeling of being in a natural setting have been identified. Rich vegetation supports children in developing an appreciation of nature and has restorative benefits (Faber Taylor et al., 2001; Fjortoft, 2001; Hartig, Kaiser, & Bowler, 2001; Kaplan, 1995; Olds, 2000; Rivkin, 1995, 1997). The concept of biophilia underlies this belief. Biophilia is defined as “research across many disciplines...brought together to support the hypothesis that there exists a fundamental, genetically based human need and propensity to affiliate with life” (Kahn, 1999, p. 9). Recent studies have demonstrated that minimal connections to nature, such as looking at greenspace through a window or brief interactions with animals, can have noteworthy and therapeutic effects (Kahn, 1999; Wells, 2000).

In support of this concept, Coley, Kuo, and Sullivan (1997) studied residents of the Robert Taylor Homes and the Ida B. Wells housing development, public housing projects in Chicago. They completed 96 observations and recorded the number of trees, people, and distances between the people, trees and buildings, as well as peoples' activities. They found that residents avoided spaces that were devoid of natural elements and conversely used outdoor spaces more if they included trees. Further, they found that increased outdoor space helped facilitate stronger social relationships, including mixed-age groups. The greenspace also helped to build a greater sense of community among residents.

Wells and Evans (2003) studied 337 children in grades three through five from five rural communities in upstate New York. They administered three tests to the children. The Naturalness Scale was used to assess the amount of natural elements in their window view (Evans, Wells, Chan, & Saltzman, 2000). The Global Self-Worth subscale of the Harter Competency Scale provided data on the children's perception of their well-being (Harter, 1982). The Lewis Stressful Life Events Scale was administered to determine the frequency with which the children experienced stressful events (Lewis, Seigel, & Lewis, 1984). They found that the children's access to natural elements was linked to their socio-economic status, with more affluent children having greater access to natural settings. They also found that rich vegetation can offer a reduction in stress and provide a greater sense of well being.

Another study completed with children in the Chicago inner-city found a significant and positive impact on the amount of adult-child interactions, and the children's involvement in play, when their environments had more foliage and trees. Sixty-four public housing spaces outdoors were observed on four occasions. They were ranked in terms of the amount of vegetation and divided into two groups. Thirty-seven of the spaces were considered high

vegetation and 27 were considered low vegetation. Of the 262 children observed, 73% were involved in play and 87% were supervised in some manner. The number of children observed engaged in play and supervised in high vegetation areas was twice that of the children in the low vegetation group. Implications from this research include the potential reduction of risk factors for children growing up in poverty by increasing the foliage and greenspace within which they can play at home (Faber Taylor, Wiley, Kuo, & Sullivan, 1998).

Nabhan and Trimble (1994) remarked:

Many naturalists start their journeys on ditch banks, in empty lots – in any open space just beyond the backyard fence. We are concerned about how few children now grow up incorporating plants, animals, and places into their sense of home (p. xiii).

They continued:

We look to our own childhoods, to our children, and to children of other places and cultures with whom we have spent time. We find enormous diversity in these lives, but we also sense some common ways in which wildness - even in its simplest forms – can nourish a lasting attachment to the earth, and, in turn, nurture self-esteem. We know, too, that many now consider children's experience of wildness a luxury rather than a basic human need. Children *do* need wildness. (p. xv)

Indoor-Outdoor

Some researchers purport that a connection between young children's indoor and outdoor worlds is important. The presence of natural light through large windows in classrooms can help children to feel a part of their natural world, in addition to providing opportunities for observation of greenspace and to maintain well-being (Edwards, 1993; Gandini, 1994; Gillespie, 2000; Greenman, 1988, Olds, 2000). Incorporating activities that may have been reserved for the indoors may support learning and interactions outdoors too (Nabors, Willoughby, Leff, & McMenamin, 2001).

Research has been conducted that supports the concept that views of natural settings through windows can have positive and restorative effects. Wells (2000) studied nearby natural environments for a group of 17 children, between the ages of 7 and 12, living in poverty. This longitudinal study examined the cognitive functioning of the children while living in poor quality housing with few natural elements, and following moving into better quality housing with increased green space nearby. They studied the impact the view of the natural elements had on the children's cognitive functioning. They found that the children with the greatest positive change in the amount of natural elements in or near their home had the most significant positive change in their ability to direct their attention. This research supports the value of a connection to the natural outdoors to enhance environments for children from the indoors.

Kaplan (2001) conducted a survey among 188 apartment residents regarding the views from their apartment windows. The content of the view was rated by the residents based on 17 dominant characteristics and through comparison to 40 photographs. Kaplan found that views of natural elements had restorative effects and positively impacted residential satisfaction of the participants. This research also supports the value of a connection to nature even if it is only through a window.

Bringing natural elements such as window gardens, or collages of found natural objects inside and taking blocks or dramatic play materials outside can facilitate this connection as well (Edwards, 1993; DeBord et al., 2001; Gillespie, 2000; Gandini, 1994). Supporters of the Reggio Emilia approach advocate for these elements as well, Figure 3 depicts a child care center that uses the Waldorf approach. It demonstrates a connection with the outdoors from the inside. The large windows provide substantial natural light, materials

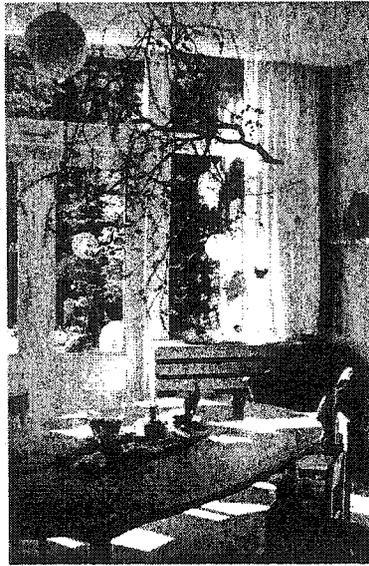


Figure 3. Connecting the outdoors from the inside

used to decorate and furnish the room are all natural, predominantly wood, and the hanging branch evokes a feeling of being in a wooded area while seated at the table.

Bringing toys and activities that had previously been reserved for the indoor classroom, such as blocks or dramatic play materials can help facilitate interaction and inclusion of children with varying abilities. Nabors et al. (2001) found that bringing loose parts such as dolls, puppets or cars can promote pretend play between children. This can give teachers an opportunity to facilitate interaction for children with special needs or give children a structure within which they are familiar to join the play. Other activities, such as reading or a marching band with musical instruments, also provide an opportunity for adults to be involved in directing play and support inclusion of children with special needs. This provides further evidence that a connection between the indoor and outdoor classrooms is important for young children.

Environmental stewardship

Outdoor play also provides a unique opportunity to teach children about citizenship and the important role they play in keeping the earth clean (Rivkin, 1995, 1997). Children can understand from jumping in a pile of fallen leaves they've raked why raking is necessary. They can understand from experiencing the weather what role the rain and snow play in renewing the earth. They can watch birds nest and then babies hatch in the spring. Certainly books can relate all of these issues on a representational level, but the sensory experiences and opportunity to manipulate the components make learning fun, regardless of your learning style (Brett et al., 1993; Caesar, 2001; Frost et al., 2001; Hendricks, 2001; Piaget, 1926; Theemes, 1999; Wardel, 2000).

“Contact with nature alone is not all that is required for a child to spontaneously develop understanding of and a caring relationship to the natural world. The role of adults is crucial” (Hart, 1995, p. 60). It is important for adults to support children in developing relationships with the natural world through example and opportunity for practice. The feeling of “participation” children enjoy from working with nature to create “something beautiful and more magical than could have been created alone is at the core of fostering earth stewardship in children” (p. 63). Opportunities for children to connect to nature are important components of a high quality outdoor play environment of today.

Play settings

“The playscape must be capable of supporting every form of play naturally engaged in by children in order to achieve the developmental advantages afforded play” (Sanoff, 1995, p. 85). Professionals from various disciplines who value outdoor play for children

today recognize this need for comprehensive play opportunities, generally somewhat organized in settings or zones for play (Olds, 2000), or “activity pockets” (Hart, 1997, p. 15). These settings can “enrich children’s interactions with the equipment, nature, adults and one another” (Theemes, 1999, p. 33). Settings offer varying opportunities for play and learning, e.g. water play area, sand play area, garden, etc. Play settings or zones can be delineated outdoors by pathways, hills or mounds, foliage, rocks or boulders, built structures such as pergolas, bridges or playhouses, or by borders which may not be visible. Different types of play or activities are contained therein (Hart, 1997; Herrington, 1997, 1998; Kritchevsky, Prescott & Walling, 1969; Olds, 2000; Theemes, 1999). An example of a space with multiple play settings is shown in Figure 4. The railroad ties, storage building and a fence create an area that can accommodate activities that must be protected from traffic and are valuable play spaces for the children. Within the setting, the children’s flower and vegetable garden, bird bath and rain barrel are each delineated by slate paving stones and pine straw. The sneaker garden (hanging on the fence) is an additional play setting.



Figure 4. Multiple play settings

Flow

Circulation throughout a play yard is essential to create a sense of flow. A trike path that travels circuitously throughout the outdoor environment seemingly connecting potential play settings is a common example of how flow can be established effectively. This encourages the children to move from one play setting or zone to another. As they move they participate in exploration and free play. Children also develop decision-making skills as they move from activities and are provided with multiple choices for the next activity. Well-designed flow within a play space can support the development of spatial awareness too (Olds, 2000). Spatial awareness can be characterized as an understanding of how to navigate within an environment from one place to another. It is the understanding of distances between points within the space (Heft & Wohlwill, 1987).

Affordances

Play settings are made up of affordances. The term affordances was originally used by J. J. Gibson (1966, 1979) as a component of his theory of perception. They are real objects or environments given meaning by the person who perceives them. For example, a fallen tree becomes an object on which to climb and balance by a young child. While that was clearly not the function of that fallen tree, the child perceives it as such. Another example relative to loose parts: pea gravel may function as a buffer in a fall zone to reduce the likelihood of injury. Young children may perceive it as a material to be loaded into their dump truck and moved to their "construction site" in the sand play area. An understanding of the affordances of an environment, as seen by a child, is essential in providing an exciting setting for play (Heft, 1988).

As when we study the affordances offered within a play setting, we have to consider the children, other components, and the way they fit together when studying an outdoor play space. We can talk about “within settings” or “between settings” components of a play environment. Within setting components describes those things that can change within a play and learning setting such as peers, including group size and density of children in the allotted space and relative to the adult interaction available, materials, organization of the space or equipment, and time allocated for play. Between setting components of an outdoor environment are those grand issues in which the child is embedded such as gender, culture, socioeconomic status or design of the environment (Dempsey & Frost, 1993; Hendricks, 2001). Both within and between settings impact the way a child sees a component of the outdoor play space, and therefore changes the affordances for that child. A gender-based stereotypical example may be, a girl sees vines grown over a small pergola as a playhouse and a boy may perceive it as a fort. The affordances provided by the between setting components are different for each of those children and their play is impacted as a result.

Aesthetics

We must appreciate the aesthetic experiences offered through opportunities for outdoor play as well. “Young children – as travelers of the world for the first time – see and are aware of the beauty of many things - things we adults have come to overlook. This is the advantage of experiencing things for the first time in a state of heightened awareness” (Hendricks, 2001, p. 30). Consistent with this statement, Kaplan, Kaplan, and Ryan (1998) suggested that the impact of an environment’s aesthetics are determined by each individual’s

perspective. What attracts and holds a person's interest varies by the way they understand and explore that environment.

Seeing, smelling, tasting, hearing and feeling objects of beauty, both natural and man-made, must be a part of play for children, especially outdoors. Consistent with the Reggio Emilia approach to early childhood education, natural beauty in terms of form, texture, color, shape, and other characteristics related to children's experiences are displayed throughout their environments both indoors and out, not just in art activities as is frequently a misunderstanding of the Reggio Emilia approach in the United States (Gandini, 1994). Opportunities to recreate these aesthetic pleasures is the essence of play and resulting learning (Hendricks, 2001). Outdoor play areas must "evoke an aesthetic response – an urge to reach out and see what can be done with it" (p. 36).

Movement

Children have loved to run and jump and skip since time immemorial. "Archeologists found footprints of children zigzagging and circling while adults were plodding sedately along a river bank thousands of years ago" (Hewes, 2003, web). "Plato saw the model of true playfulness in the need of young children, animal and human, to leap. Leaping expresses faith in yourself and your environment" (Greenman, 1988, p. 181). We need to offer these opportunities for children to express themselves physically outdoors. Trees to climb, big rocks or stumps to jump from, swings, slides, balls to throw and kick all provide these opportunities for children to exercise and play. These, too, are important and fun opportunities which children need to develop strength, balance, coordination, and self-confidence (Bilton, 1999). Mary Rivkin (1995) remarked, "on large, fixed equipment

children develop their bodies and experience basic physics – gravity, pendulums, inertia, the optics of being upside down” (p. 25). In addition, “Children need physical challenge from a playground: the opportunity to literally reach new heights and run wild. They need the stimulus of risk; they need choices in climbing, sliding, swinging and so on so they can determine the excitement and challenge they are ready for” (Greenman, 1988, p. 179).

Fjortoft (2001) examined outdoor play and learning and children’s motor development in a natural outdoor setting. Television, video games and computer usage have had a significant and negative impact on the level of activity and motor development in children, specifically in Norwegian children for the purposes of this study (MMI, 1995). A number of kindergartens in Scandinavia have attempted to reverse this trend by supporting the play of the children they serve in natural outdoor environments. Some have become “outdoor schools” providing educational services for children outside in natural environments for most or all of the day. Fjortoft (2001) studied 75 children between the ages of five and seven who attended kindergarten in Telemark, Norway. The experimental group included 46 children from one kindergarten. The control group was made up of 29 children from two neighboring kindergartens. The mean age of the groups was 6.1 years, with no significant difference between the groups. The experimental group was predominantly boys and the control group was predominantly girls. Children in the experimental group participated in free play and other activities in the forest next to their school for 1-2 hours daily throughout the year. They occasionally participated in activities within their fenced playground as well. The control group participated in free play and other activities in the fenced playground next to their school for 1-2 hours daily throughout the year with

occasional visits to the natural setting. A pretest for motor skill and fitness was administered in September. A posttest was administered following the treatment period in June.

At pretest, the control group scored better than the experimental group for motor skills and endurance. Following the treatment period the experimental group caught up with the control group. The experimental group showed significantly better improvement on two items (balance and coordination tests) (Fjortoft, 2001).

Takahashi, Yoshida, Sugimori, Miyakawa, Izuno et al. (1999) compared 427 three-year-olds to a control group from a longitudinal study of children born in 1989 in Japan. They found that limited playtime outdoors was one of six factors that significantly contributed to obesity in three year olds. Implications they discussed include a need for increased physical activity among children to reduce the possibility of obesity. Play time outdoors reduces the use of technology, like video games, and thereby increases physical movement.

Interaction

It is essential that the environment be designed and implemented to help children interact with adults and peers to have fun and develop social skills. This is accomplished through opportunities for pairs or small groups to play together, either through organized games and activities or simple conversations. Settings such as cozy nooks, porch swings, picnic tables or stumps placed together can accomplish this task nicely (Bilton, 1999; Moore et al., 1994; Theemes, 1999). Adults and children work together to develop social play and learning outdoors. Group size and adult to child ratios are important and interdependent issues to be studied outdoors (Bilton, 1999). Teacher planning to facilitate opportunities for

manipulation and exploration outdoors is essential. Teachers must establish an environment that fosters development, supports positive behavior and stimulates creativity outdoors as indoors (Collier, 1985; Wardel, 2000).

Fromberg (1999) found that when children play with toys that are general in their nature and appearance, such as blocks, their play outdoors includes more interaction, more shared themes for play with others, and the play is interrupted less frequently by children changing activities than when children play with loose parts with specific themes.

Bullying can be a significant problem in the outdoor environment. Collins, McAleavy, and Adamson (2004) studied bullying in 120 schools in Northern Ireland by using questionnaires. Their inquiry included 1,079 primary age children and 1,353 post-primary age children. They found that 40% of the primary age children reported being bullied in school and 25 % reported bullying. Thirty percent of the older children reported being bullied and 28 % reported having bullied. This is consistent with previous studies which indicated that bullying decreased as children aged (Smith & Levan, 1995; Whitney & Smith, 1993). Name-calling was the method of bullying used most often followed by exclusion from interaction. They found that the greater the number of friends children reported having the less likely they were to be bullied. They found significant gender issues. Children tended to bully children of the same gender as they. Girls tended to be bullied by someone in their own class and were more likely to report the bullying. Boys tended to be bullied by someone older and were less likely to report the incident. Forty-two percent of the bullying reported took place on the playground. The engagement of adults supporting inclusive play, design which facilitates small group interaction and the development of

friendships, and the way multi-age groups use space together can impact bullying based on this research.

Including and accommodating children with special needs

It is important that children and family members with disabilities can participate actively during outdoor play. As a result, the environment must be accessible and supportive for children with disabilities. Children with physical or sensory challenges must be actively included in outdoor play through the physical environment and interactions with teachers (Hudson, Thompson, & Mack, 2000; Nabors et al., 2001). Sometimes this is not accomplished to the extent it needs to be. The outdoors may be viewed more as a “free play” opportunity by teachers and therefore teachers may not provide the level of intervention needed to facilitate inclusion outdoors. Interactions outdoors tend to be more fast paced than indoors. This may not give children with varying abilities the opportunity to become engaged in group play without intervention. Children’s experience in outdoor play if they have special needs may be less than their typical peers. This may have had a negative effect on their interaction or outdoor play skills further increasing problems with inclusion (Nabors et al., 2001).

Unique accommodations to meet the needs of each child are needed. For example, children with visual impairments can be accommodated through the use of sounds. Dragging a stick along a buried drainage pipe can create a sound that can help a child independently negotiate from one learning setting of the playground to another. Kern and Wolery (2002) reported on a playground that was adapted for a child with a visual impairment who was having difficulty participating with peers outside because of his lack of familiarity with, and

familiarity with, and fear of, such a large and open environment. In addition to the aforementioned path for him to negotiate the playground, the playground incorporated music into each learning setting to increase his awareness of play opportunities, choices of activities and encourage peer interaction. Wolery found that the child enjoyed increased independence in outdoor play, increased security being outside, demonstrated through discontinuation of crying and clinging to teachers, and increased interaction with peers. Furthermore, the typically developing children actively participated in the musical components of each learning setting. This environmental and curricular adaptation facilitated interaction and inclusion.

Barbour (1999) completed a qualitative case study of play and peer relationships for eight second grade children with varying physical abilities while outdoors. She found that the design of outdoor environments impacted children's ability to interact and participate in physical activities, which also impacted on peer relationships. Playgrounds designed for exercise or physical development primarily tended to have a limiting effect on opportunities for children with physical challenges. Playgrounds that were designed with more comprehensive play choices did not have the same limiting effects on children's interactions, peer relationships and physical activities. In play environments with a variety of play choices available, the children moved on to other opportunities when they were not allowed access to some activities. Unfortunately, children with physical challenges experience rejection from peers at times regardless of the design of the playground.

Safety

Providers of high quality outdoor environments are committed to safety. This means that the environment is fenced securely and monitored continuously to insure it is free from debris that may be sharp or attract animals. Equipment is in good repair and intact, meaning they have no missing pieces and are free from rust or cracks, sharp edges, protrusions or entrapments. There are no parts that move as a result of a defect or outdated design and could potentially pinch or crush a limb or finger. Equipment must be securely anchored so it does not tip when children are climbing or participating in creative drama. The play area is sheltered and secure from traffic, fumes, and excessive noise. Canopies, pergolas, trees and other elements can protect children from extreme weather such as wind or sun. There is adequate drainage so that standing water and resulting insects do not occur for extended periods. Most importantly in terms of safety, surfacing is adequate to reduce injury during falls (U. S. Consumer Product Safety Commission, 1997; National Program for Playground Safety, 2000). Safety is clearly a key component in providing a high quality outdoor play environment. Issues of supervision are of extreme importance in maintaining a safe play environment. Assuming child to adult ratios support safe outdoor play, teachers must interact with children to insure their safety. A surveillance perspective is inadequate in keeping children safe. Engagement, without intrusion on the part of the adults, will ensure that children play with appropriate equipment for their development and that they use loose parts in safe ways (Dempsey & Frost, 1993).

Assessment

There are several measures designed to assess the quality of the physical environment of outdoor play areas in childcare centers, or provide guidance in developing and maintaining safe learning environments, whether for establishing baseline information or evaluating change. When used, these measures can highlight areas that need change to prevent injury or reduce liability (Frost & Klein, 1979; Kritchevsky, Prescott, & Walling, 1969; National Program for Playground Safety, 1999; U. S. Consumer Product Safety Commission, 1997). These instruments address issues of design such as drainage, play settings or zones, fall zone size and surfacing. Qualitative tools such as teachers' reflective journals, children's journaling, or videotaping also provide valuable data to study the quality of an outdoor environment and identify opportunities for positive change. Qualitative data can provide insight into interactions and curricular issues, in addition to concerns with the physical environment.

The first comprehensive assessment of the quality of the outdoor environment for preschool children is in development stages. A multidisciplinary team, including child development experts, designers, and health and safety experts have collaborated to create an assessment that addresses all key areas with one assessment to be administered in approximately 90 minutes. (DeBord, Moore, Hestenes, Cosco, & McGinnis, in press).

The majority of injuries to children in early care and education settings occur on the playground (Charlesworth, 1987). Tools that focus on safety provide standards that centers can follow to minimize liability and potential injuries to staff and children.. The American Society for Testing and Materials (ASTM) and the Consumer Product Safety Commission (CPSC) both provide published guidelines to reduce injuries to young children while playing

outdoors. Their publications address issues of “design, durability, and installation of equipment; zoning of the area; surfacing; maintenance of both equipment and surface” (Dempsey & Frost, 1993, p. 316). These publications, among others, are necessary components in a comprehensive assessment of an outdoor play and learning environment for young children.

A delicate balance between reduction of risk and opportunities for developmentally appropriate challenge must be maintained (Greenman, 1988; Theemes, 1999). Children learn from new and exciting opportunities that expand their skills, such as climbing a tree, playing in the mud, or catching tadpoles in a stream (Nabhan & Trimble, 1994).

Teacher training

Little training occurs for teachers in the effective use of the outdoor classroom or the benefits of play outdoors (Collier, 1985; Hendricks, 2001). “Teachers and caregivers should continue to support and encourage children during outdoor play just as they do during indoor time (Theemes, 1999, p. 67.) Unfortunately, the playground is frequently viewed as a break time for teachers, an opportunity to “let the kids run” without much interaction (Esbensen, 1990). The role of adults in “policing” playgrounds has been encouraged, but this is not the role they should play (Theemes, 1999, p. 67).

Research has previously supported the success of teacher training in play leadership and play tutoring (Collier, 1985; Dempsey, 1985; Wade, 1985). Training teachers in effective facilitation of language skills outdoors through open ended questions, development of opportunities for small group interaction and lack of intrusion on the part of adults when children are conversing and scaffolding effectively are needs that have thus far gone unmet

(Collier, 1985). Play tutoring is an important concept in terms of adult/child interactions in the outdoor learning environment. It is defined by Dempsey and Frost (1993) as “encouragement in play through indirect means, such as the provision of time and materials, or through direct means, such as the timely suggestions offered by the adult, and if the adult’s interventions respect the child’s initiatives” (p. 311). Play tutoring has been found to increase the frequency and quality of the type of play targeted (Smith & Sydall, 1978). While the majority of the play tutoring literature is based in the home or classroom, play leaders in European adventure play are analogous to preschool teachers in the United States. They are responsible to facilitate play and learning through providing materials, equipment, and supervision while allowing the child to explore and create. Unfortunately teacher training in facilitation of a high quality outdoor play environment has not been on a research agenda for two decades.

Summary and Conclusion

Effective planning and use of the outdoors in children’s environments is essential. We have a substantial amount of information about how to effectively plan and use the outdoor environment to help children develop well in all areas and gain a sense of respect and responsibility for our natural resources (Bilton, 1999; Brett et al., 1993; Bruya, 1985; Chawla & Hart, 1988; DeBord et al., 2003; Dempsey & Frost, 1993; Fjortoft, 2001; Frost, 1992; Greenman, 1988; Hart, 1993, 1995; Herrington & Studtmann, 1998; Malone & Tranter, 2003; Moore, 1994, 1997; Nicholson, 1971; Olds, 2000; Rivkin, 1990, 1995, 1997; Sutton-Smith, 1990; Takahashi et al., 1999; Theemes, 1999; Vagnini, 2000). Some of this information is well supported empirically and some is not. Most of the research we draw

from has not been completed in an early care and education context with preschool age children. Gender issues have been virtually ignored regarding the outdoor play environment. Little information is gleaned from qualitative studies.

The therapeutic benefits of nature have been well established (Kaplan, 2001, 1995; Kaplan & Kaplan, 1989; Kaplan et al., 1998). Experiences in natural surroundings increase cognitive functioning, ability to focus for some children, and reduce stress (Faber Taylor et al., 2001, Faber Taylor et al., 1998). Theories that espouse the benefits of connecting the indoors and outdoors, such as the Montessori or Waldorf approaches, have existed for decades (Leichter, 1980; Montessori, 1936, 1963). Multiple studies have been done, and some are referenced, regarding the positive and restorative impact of views of nature (Coley et al., 1997; Kaplan, 2001). While there is literature supporting the therapeutic effects of a connection with nature, none has been completed with preschool age children. Gender issues have been identified but not explored within this body of research. Longitudinal research, including children who grew up in child care and their environmental stewardship, could answer questions about how we support the development of positive attitudes toward citizenship in our natural environment for people that had different exposure to the outdoors as children. Issues associated with the amount of time spent outdoors for children have not been studied relative to the therapeutic impact of nature or environmental stewardship.

Designers support the merits of both natural and manufactured loose parts outside and bringing natural elements indoors (Bilton, 1999; Brett et al., 1993; Herrington & Studtmann, 1998). Research about the social implications of loose parts has been included, and additional examples exist (Fromberg, 1999; Nabors et al., 2001). Continued research about the impact of loose parts on all aspects of play and learning outdoors would be valuable. We know little

about the gender and socio-economic variation in play with loose parts. Implications for public play spaces have not been discussed.

The importance of a planned play environment outdoors is accepted. Affordances and aesthetics are accepted to be different based on individual perspectives and preferences, yet research in this area is virtually non-existent (Hendricks, 2001).

Movement has been well studied in the outdoor environment, probably because the perspective of the outdoors as a place for exercise is well established (Fjortoft, 2001; Takahashi et al., 1999). Continued research regarding the connection between outdoor play and obesity in children is necessary.

While interactions among children on the playground have been studied, additional research regarding interactions, specifically surrounding bullying and inclusion of children with disabilities, could support increased quality in the outdoor environment by improving the experience of all children outdoors (Collins et al., 2004; Nabors et al., 2001). Teachers could change the environment and their interactions to reduce bullying or facilitate inclusion more effectively.

Since the majority of injuries to young children in care occur on the playground, continued study of the injuries and diligence in implementation of prevention strategies is beneficial (National Program for Playground Safety, 1999; Wortham & Frost, 1985). In addition, research regarding opportunities for challenge for children balanced with safety concerns is needed. Again, study of these issues in preschool settings is needed, as well as the implications based on gender and socio-economic status.

Little information exists about the use of assessments for outdoor environments on an on-going basis among providers of early care and education. Data gathered on assessments

completed and resulting changes made to outdoor environments relative to injuries and overall quality of the environments may provide valuable insight into the level of quality of outdoor environments in child care, increase opportunities for children and reduce injuries.

We fail to train teachers about the importance of the natural environment and the value of outdoor play, yet we have evidence that it benefits children socially and emotionally, in addition to cognitively and physically (Bilton, 1999; Faber Taylor et al., 2001; Fjortoft, 2001). A culture exists that supports a lack of engagement outdoors on the part of teachers (Bilton, 1999; Nabors et al., 1999). We need to work to change this culture so that teachers facilitate inclusion and positive interactions, as well as positive play and learning.

Unfortunately, the outdoor environment continues to be overlooked as a priority in each child's educational or life experience (Esbensen, 1990). We need to know more about the barriers to implementation of proven strategies for a quality outdoor play and learning environment. Qualitative methods that glean information from the children are used infrequently. We need to find effective ways to gain their input as a young age.

**CHAPTER 3: UNDERSTANDING A QUALITY OUTDOOR ENVIRONMENT
FOR PRESCHOOL CHILDREN IN CHILD CARE**

A manuscript to be submitted to *Environment and Behavior*

Kelly Ross Kantz

Abstract

On average, more than 35 million children in the United States are placed in care outside of their home for 22 to 40 hours weekly. Eighty percent of these children are under six years of age (National Research Council, Working Families and Growing Kids, 2003). As a result, early care and education professionals have a tremendous responsibility in providing our children with opportunities for play and learning to help them have a happy and healthy childhood. The importance of an outdoor play area with numerous settings for play is accepted as the standard in the field of early care and education, however, outdoor play is arguably the most neglected aspect of these services today.

This study provides an in-depth, qualitative examination of an outdoor play environment for preschool children. It also investigates daily planning issues regarding that environment. The findings suggest that in this high quality child care center children are actively engaged in play and learning of all kinds while outdoors. Teachers plan and supervise these activities in various ways. The indoors and outdoors are connected through materials and activities planned for the children. Teachers' provision of high quality services outdoors is supported by the administration through fiscal and planning support. Barriers to providing a high quality outdoor environment, however, were identified including the workload of teachers in child care, lack of training in providing a high quality outdoor

environment, and the low prioritization of the outdoor environment by stakeholders. This ethnography highlights areas for future research to determine if other early care and education settings experience similar struggles in terms of prioritizing training and work load to insure that children have ample opportunity to play outdoors in positive, natural environments.

Introduction

Changes in the workforce between 1970 and 2000 saw the rise in the number of working mothers from 38% to 68%, with little reduction for fathers. This has resulted in more than 35 million children in the United States placed in care outside of their home for 22 to 40 hours weekly on average. This includes 80% of children under age six years spending an average of 40 hours weekly in childcare and 63% of school age children spending 21 hours or more in childcare, in addition to their time in school (National Research Council, Working Families and Growing Kids, 2003). As a result of the tremendous amount of time many children spend in care outside their home, early care and education professionals are key in insuring that children have opportunities to help them develop into happy and healthy citizens.

Child development professionals recognize the importance of an outdoor play area with numerous settings for play (Sanoff, 1995). However, the outdoor play area is arguably the most neglected aspect of early care and education services today (Bilton, 1999; Dempsey & Frost, 1993; Esbensen, 1990; Hart, 1993). Natural outdoor environments are of special significance in the lives of young children. There is a body of evidence that indicates that natural settings have restorative effects and are frequently identified as individuals' favorite

places from childhood (Chawla, 1994; Kaplan, 1995; Kaplan & Kaplan, 1989; Korpela, 1992). Given the percentage of their waking hours that many children spend in care outside their home, the memories that they make outdoors in child care may be their primary connection to nature. Do today's children envision a natural setting as one with a chain link fence and a thick, mulch fall zone encircling a huge plastic and metal piece of equipment?

This qualitative investigation focused on outdoor play for children in a child care center. Collaborators, including teachers, parents and center administration, developed a philosophy to guide outdoor play at this center. Discussions of the barriers and supports they perceive for providing a high quality outdoor play environment, and the relationship between the outdoor play environment and their behavior occurred. Parents also provided input through an email survey and a meeting with the Parent Advisory Committee for the center.

The following research questions were used to investigate children's outdoor experiences in a center-based child care setting:

- What supports and barriers do teachers perceive or experience for creating a quality outdoor play environment?
 - What do the children and teachers do when they are outside?
 - How is the indoor and outdoor curriculum integrated?

Literature review

Landscape designers and architects, as well as child development professionals and educators, have described quality outdoor environments for preschool children. Opportunities for exercise and physical development, sand and water play, exposure to natural elements, as well as other materials to be manipulated and loose parts to support other types of play are

necessary components of a quality outdoor play environment for young children (Brett et al., 1993; Christie & Yawkey, 1987; Frost, 1992; Frost & Klein, 1979; Frost & Sunderlin, 1985; Hartle & Johnson, 1993; Miller, 1972; Rivkin, 1990). “Areas for special activities such as art, gardening, and caring for animals are often included” (Frost & Klein, 1979, p. 131). “The playscape must be capable of supporting every form of play naturally engaged in by children in order to achieve the developmental advantages afforded play” (Sanoff, 1995, p. 85).

A connection to nature

Professionals from various disciplines who value outdoor play for children today support play opportunities that are connected with nature. Great benefits of components that provide a feeling of being in a natural setting have been identified. Rich vegetation supports children in developing an appreciation of nature and has restorative benefits (Faber Taylor et al., 2001; Fjortoft, 2001; Hartig, Kaiser, & Bowler, 2001; Kaplan, 1995; Rivkin, 1995, 1997). The concept of biophilia underlies this belief. Biophilia is defined as, “research across many disciplines ...brought together to support the hypothesis that there exists a fundamental, genetically based human need and propensity to affiliate with life” (Kahn, 1999, p. 9.) Recent studies have demonstrated that minimal connections to nature, such as looking at green space through a window or brief interactions with animals, can have noteworthy effects (Kahn).

In support of this concept, a study completed with children in the Chicago inner-city found a significant and positive impact on the amount of adult-child interactions, and the children’s involvement in play, when their environments had more foliage and trees. Sixty-four public housing spaces outdoors were observed on four occasions. They were ranked in terms of the amount of vegetation and divided into two groups. Thirty-seven of the spaces

were considered high vegetation and 27 were considered low vegetation. Of the 262 children observed, 73% were involved in play and 87% were supervised in some manner. The number of children observed engaged in play and supervised in high vegetation areas was twice that of the children in the low vegetation group. Implications from this research include the potential reduction of risk factors for children growing up in poverty by increasing the foliage and greenspace within which they can play at home (Faber Taylor, Wiley, Kuo, & Sullivan, 1998)

Wells and Evans (2003) studied 337 children in grades three through five from five rural communities in upstate New York. They administered three tests to the children. The Naturalness Scale (Evans, Wells, Chan, & Saltzman, 2000) was used to assess the amount of natural elements in their window view. The Global Self-Worth subscale of the Harter Competency Scale (Harter, 1982) provided data on the children's perception of their well-being. The Lewis Stressful Life Events Scale (Lewis, Seigel, & Lewis, 1984) was administered to determine the frequency with which the children experienced stressful events. They found that rich vegetation can offer a reduction in stress and provide a greater sense of well being.

Nabhan and Trimble (1994) remarked, "Many naturalists start their journeys on ditch banks, in empty lots – in any open space just beyond the backyard fence. We are concerned about how few children now grow up incorporating plants, animals, and places into their sense of home" (p. xiii). They continued, "We look to our own childhoods, to our children, and to children of other places and cultures with whom we have spent time. We find enormous diversity in these lives, but we also sense some common ways in which wildness - even in its simplest forms – can nourish a lasting attachment to the earth, and, in turn, nurture

self-esteem. We know, too, that many now consider children's experience of wildness a luxury rather than a basic human need. Children *do* need wildness" (p. xv).

Play settings

Professionals from various disciplines who value outdoor play for children today recognize this need for comprehensive play opportunities, generally somewhat organized in settings for play, or "activity pockets" (Hart, 1997, p. 15). These settings can "enrich children's interactions with the equipment, nature, adults and one another" (Theemes, 1999, p. 33.) Settings offer varying opportunities for play and learning, e.g. water play area, sand play area, garden, etc. Play settings can be delineated outdoors by pathways, hills or mounds, foliage, rocks or boulders, built structures such as pergolas, bridges or playhouses, or by borders which may not be visible. Different types of play or activities are contained therein (Hart, 1997; Kritchevsky, Prescott & Walling, 1969; Theemes, 1999).

Affordances

Play settings are made up of affordances. The term affordances was originally used by J. J. Gibson (1966, 1979) as a component of his theory of perception. They are real objects or environments given meaning by the person who perceives them. For example, a fallen tree becomes an object on which to climb and balance by a young child. While that was clearly not the function of that fallen tree, the child perceives it as such. Another example relative to loose parts: pea gravel may function as a buffer in a fall zone to reduce the likelihood of injury. Young children may perceive it as a material to be loaded into their dump truck and moved to their "construction site" in the sand play area. An understanding of

the affordances of an environment, as seen by a child, is essential in providing an exciting setting for play (Heft, 1988).

Loose parts

The phrase loose parts was first used in 1971 by Simon Nicholson. In his article, "How not to cheat children: The theory of loose parts", Nicholson (1971) described children's love of interaction with and exploration of various materials and shapes. He noted, "sounds, music, and motion; chemical interactions, cooking and fire; and other people, animals, plants...with all these things all children love to play, experiment, discover and have fun" (p. 33). The term is defined as essentially anything with which a child can interact that is not affixed. Loose parts include both natural items, such as sand, water or sticks, and manufactured pieces like creative drama props or blocks. Loose parts enhance play for children in virtually any environment and are an essential component of an environment for play (Brett et al., 1993; Dien, 1991; Moore, Goltsman, & Iacofano, 1987).

Interactions

Within the following section information about what children and teachers do outside will be offered and relevant research discussed. It is essential that the environment be designed and implemented to help children interact with adults and peers, to have fun, and develop social skills. This is accomplished through opportunities for pairs or small groups to play together, either through organized games and activities or simple conversations. Settings such as cozy nooks, porch swings, picnic tables or stumps placed together can accomplish this task nicely (Bilton, 1999; Moore et al., 1994; Theemes, 1999). Adults and children work together to develop social play and learning outdoors. Group size and adult to child ratios are

important and interdependent issues to be studied outdoors (Bilton, 1999). Teacher planning to facilitate opportunities for manipulation and exploration outdoors is essential. Teachers must establish an environment that fosters development, supports positive behavior and stimulates creativity outdoors as indoors (Collier, 1985; Wardle, 2003). Fromberg (1999) found that when children play with toys that are general in their nature and appearance, such as blocks, their play outdoors includes more interaction, more shared themes for play with others, and the play is interrupted less frequently by children changing activities than when children play with loose parts with specific themes.

Teacher training

Little training occurs for teachers in the effective use of the outdoor classroom (Collier, 1985) or the benefits of play outdoors (Hendricks, 2001). “Teachers and caregivers should continue to support and encourage children during outdoor play just as they do during indoor time (Theemes, 1999, p. 67.) Unfortunately, the playground is frequently viewed as a break time for teachers, an opportunity to “let the kids run” without much interaction (Esbensen, 1990). The role of adults in “policing” playgrounds has been encouraged, but this is not the role they should play (Theemes, 1999, p. 67). Issues of supervision are of extreme importance. Assuming child to adult ratios support safe outdoor play, teachers must interact with children. A surveillance perspective, as opposed to engagement with the children, is inadequate in keeping children safe. Engagement, without intrusion on the part of the adults, will ensure that children play with appropriate equipment for their development and that they use loose parts in safe ways (Dempsey & Frost, 1993).

Research has previously supported the success of teacher training in play leadership and play tutoring (Collier, 1985; Dempsey, 1985; Wade, 1985). Training teachers in effective facilitation of language skills outdoors through open ended questions, development of opportunities for small group interaction and lack of intrusion on the part of adults when children are conversing and scaffolding effectively are needs that have thus far gone unmet (Collier, 1985). Play tutoring is an important concept in terms of adult/child interactions in the outdoor learning environment. It is defined by Dempsey and Frost (1993) as “encouragement in play through indirect means, such as the provision of time and materials, or through direct means, such as the timely suggestions offered by the adult, and if the adult’s interventions respect the child’s initiatives” (p. 311). Play tutoring has been found to increase the frequency and quality of the type of play targeted (Smith & Sydall, 1978). While the majority of the play tutoring literature is based in the home or classroom, play leaders in some adventure playgrounds are analogous to preschool teachers. They are responsible to facilitate play and learning through providing materials, equipment, and supervision while allowing the child to explore and create. Unfortunately teacher training in facilitation of a high quality outdoor play environment has not been on a research agenda for two decades.

Safety

Providers of high quality outdoor environments are committed to safety, but a delicate balance between reduction of risk and opportunities for developmentally appropriate challenge must be maintained (Greenman, 1988; Theemes, 1999). Children learn from new and exciting opportunities that expand their skills, such as climbing a tree, playing in the mud, or catching tadpoles in a stream (Nabhan & Trimble, 1994). A safe environment is one

that is fenced securely and monitored continuously to insure it is free from debris that may be sharp or attract animals. Equipment is in good repair and intact, meaning they have no missing pieces and are free from rust or cracks, sharp edges, protrusions or entrapments. There are no parts that move as a result of a defect or outdated design and could potentially pinch or crush a limb or digit. Equipment must be securely anchored so it does not tip when children are climbing or participating in creative drama. The play area is sheltered and secure from traffic, fumes, and excessive noise. Canopies, pergolas, trees and other elements can protect children from extreme weather such as wind or sun. There is adequate drainage so that standing water and resulting insects do not occur for extended periods. Most importantly in terms of safety, surfacing is adequate to reduce injury during falls (U. S. Consumer Product Safety Commission, 1997; National Program for Playground Safety, 2000). Safety is clearly a key component in providing a high quality outdoor play environment.

“Outdoor play is commonly believed to be an important form of play for young children. Teachers include it in their daily plans, parents admonish their children to “get some fresh air,’ and the press decries the replacement of traditional outdoor play with passive entertainment. There is little controversy about the necessity of outside play” (Theemes, 1999, p. x). This inquiry will provide a comprehensive study of an outdoor play environment and offer insight into the supports and barriers provided for teachers to offer a high quality outdoor environment in a child care setting.

Method

This study provides an in depth examination of an outdoor play environment for preschool children. We used a cyclical approach to plan change, implement change and then

study the result (Kemmis and McTaggart, 2000). Phase I of the inquiry consisted of study of the environment and development of an Outdoor Environment Mission and Strategies based on data collected and analyzed. Phase II of the inquiry included continued data collection and analyses relative to the implementation of the Outdoor Environment Mission and Strategies. Qualitative research methods were used to gain insight into feeling or beliefs and individual perspectives of teachers, children and other stakeholders. Qualitative research is interpretive (Denzin & Lincoln, 1994). We studied what teachers and children did outdoors using journals, photographs and videotapes, among other data. We attempted to interpret these data through repeated reviews, writing, and discussion among the collaborators and colleagues. Interpretations cannot help but be shaped by the experiences and values of the researcher.

Research design

This ethnography focused on the outdoor play environment for preschool children within a center-based early care and education program. Ethnography is defined by Creswell (1998) as:

...a description and interpretation of a cultural or social group or system. [It typically] involves prolonged observation of the group, through which the researcher is immersed in the day-to-day lives of the people or through one-on-one interviews with members of the group. The researcher studies the meanings of behavior, language and interactions of the culture-sharing group. (p. 58)

The system or culture of providing an effective play environment outdoors for preschoolers in a childcare setting is the focus of this research. Immersion of the researcher occurred in two ways; through the collaboration with teachers and the director as co-researchers and through the extensive involvement of the researcher in the activities of the classroom being studied.

This investigation was focused on a single setting. Consistent with Stake's (1995) recommended procedures, we met continuously throughout the process to review and discuss our individual reflections and new data gathered. We used strategies such as listing questions, developing forms to lay out a plan for the inquiry and track progress, identification of helpers and data sources, development of data storage systems, formal yet flexible allocation of time, documented estimations of expenses and intended reporting structure. Throughout the research we displayed the progress of the study through the use of a poster with moveable notes referencing data sources, data collected, and unanswered questions.

Setting

The setting in which this research takes place is an outdoor environment designed for use by toddlers and preschoolers (see Figure 1 – Site Plan).^{*} The play space is somewhat pie shaped and is approximately 50 feet wide near the building and approximately 120 feet wide at the outer fence line. The space is approximately 100 feet deep at its deepest point. The environment provides an overall sense of being in a natural setting through the variety and amount of foliage available to the children. Thirteen play settings are defined within the outdoor environment. These include two sand play areas, five grassy areas for large or small group games, the climber and its fall zone, the tricycle path, the stage, a small pergola and two play settings within the patio.

The preschool classroom that provides the focus for this research has direct access to their outdoor environment from their classroom and has windows facing south and east. They

^{*} See Chapter 1 for Figure 1.

share the outdoor play space with a class of toddlers, who also has direct access into the play yard from their classroom. The children enter the outdoor area onto a covered cement patio which provides convenient opportunities for transitional activities to the outdoors. This is also valuable space for activities such as sidewalk chalk drawing or snack, regardless of whether or not it is raining. It provides adequate space for an entire class to remain sheltered from the elements.

East of the patio is a grassy area. This grassy area flows the length of the windows on the south side of the classroom and can provide excellent opportunities for establishing a connection with the indoors through gardens, bird feeders, or other activities. Across from the grassy area the cement trike path continues circuitously from the patio around the entire play area. A variety of textures are stamped into the cement to provide additional sensory experiences for children using wheeled toys or for rubbings with chalk or crayons. A large sand play area, some of which is covered by a lattice pergola, is available close to the exit from the building. A water play trough with various heights is ever present in the sand play area adjacent to the entrance to the outdoors from the classrooms.

Proceeding around the path to the east there are multiple plantings of low bushes. These offer the children a sense of division among play settings while allowing adults the opportunity to see the children and insure their safety. A storage building is located on the path to provide easy access for retrieval of equipment. The path continues on past a flat bridge connecting a grassy area, which includes mounds and small, slight hills. Prior to the bridge, the children have an additional sand play area connected to an open grassy space by an arched bridge. The area is well shaded with mature trees. Again, ample foliage divides play settings.

At the southern most edge of the play yard there is a small stage that is covered with a lattice roof. This provides opportunities for dramatic play when materials such as dolls or other accessories are available. There is another small pergola adjacent to the stage to provide a nook for children to interact and gain a sense of privacy while outdoors. There are young trees adjacent to the pergola that will provide shade in years to come.

Another grassy area that is used for group games, water play in small pools or reading in the sun is in the center of the path. There is a small climber that is approximately 36 inches from the ground in the upper corner of the play space. It includes two steps, a domed window and a curved slide. It is frequently used for dramatic play. Surrounding the climber is a fall zone with 12 inches of wood mulch. There is a large boulder for climbing and sitting near the climber with additional plantings to separate it visually from the infant play area. There is an additional narrow grassy space in the sun on the western edge of the outdoor environment that accommodates easels or a sensory table.

The entire area is surrounded by a chain link fence. Outside of the fence is a huge grassy area separating the childcare center from the closest university building. A grassy strip separates the play area from the sidewalk and parking lot.

Sampling

Purposeful sampling was used (Glesne, 1999; Denzin & Lincoln, 1998). This center was selected because its outdoor play environment is designed with rich vegetation to give a sense of being in a natural setting. The center's administration has a reputation for providing early care and education services that exceed standards set by licensing and accreditation bodies. This center also has a history of concern with their outdoor environment and action to

address identified concerns. For example, their Parent Advisory Committee became active initially, about six years ago, to address parental issues of concern for safety outdoors. The outdoor environment was significantly reworked as a result of the safety issues experienced. Opportunities for challenge such as climbing on a circle of boulders and playing in a stream bed have been removed. Even though concerns have been addressed, the Parent Advisory Committee continues to meet monthly to enhance communication among parents and staff and facilitate parental involvement. It is made up of approximately 10 parents. The center is accredited by the National Association for the Education of Young Children. It is located in central Iowa and serves a university population. Tables 1 and 2 provide as description of the specific children included in the study and the co-researchers.

Table 1. Children in sample population

Child	Gender	Age*	Parent
1	M	2 yr 11 mo	Faculty
2	F	3 yr 10 mo	Student
3	F	3 yr 5 mo	Faculty
4	F	2 yr 5 mo	Faculty
5	M	3 yr 4 mo	Faculty
6	F	2 yr 9 mo	Student
7	M	3 yr 7 mo	Student
8	F	3 yr 11 mo	Faculty
9	F	4 years	Faculty
10	F	3 yr 10 mo	Faculty
11	M	4 years	Student
12	M	4 years	Faculty
13	F	4 yr 4 mo	Faculty
14	F	3 yr 3 mo	Faculty
15	F	3 yr 7 mo	Faculty
16	F	2 yr 8 mo	Faculty
17	M	4 yr 3 mo	Faculty

*Effective June 1, 2003

Table 2. Co-researchers

Position	Gender	Age*	Years of experience*	Education
Director	Female	28	8	B.S. Child and Family Services
Lead Teacher	Female	24	3	A.A. Child Development
Assistant	Female	20	6 mo	2 semesters of college

*Effective June 1, 2003

The focus of the study was the outdoor experiences of the teachers and children in one classroom. The children served were between the ages of 2 1/2 and 4 years. Enrollment ranged from 16 to 26 children during the study. No more than 22 children attended on a given day that data were collected. A ratio of at least 1:7 teachers to children was maintained at all times. Of those children enrolled, 17 parents consented to their participation in the study. This represented eleven girls and six boys. Fourteen are children of faculty members. The remaining three were children of students.

Parents, including the director of the center, provided input well through an emailed survey and a meeting with the Parent Advisory Committee. Two of the three teachers assigned to the classroom consented to participate in the study. The lead teacher, who participated as a co-researcher, has an Associate in Arts degree in Child Development. She has worked in child care for approximately three years. The assistant teacher participant has completed approximately one year of college and has six months of work experience in child care. The lead teacher attended approximately 6 hours of training during the study on various topics as required by licensure and accreditation. This training was unrelated to the inquiry. The assistant teacher attended an orientation to policies and procedures of the center, 40 hours of introductory training required by the center, plus ten hours of training required by

licensure. None of this training included issues about the outdoor environment. The Director had a Bachelor's Degree in Child and Family Services, in addition to participation in ongoing training, and approximately seven years of experience in providing and managing child care services. All staff members were white females who ranged from 20 to 28 years of age. All originated from Midwestern states.

Respect for participants was demonstrated through clear communication during data collection methods and the research in general, as well as by acknowledging the burden associated with participation. Co-researchers consented to participation and accepted the lack of anonymity associated with this case study. This inquiry was reviewed and approved by the Institutional Review Board at Iowa State University on October 20, 2002. All participants or guardians signed consents for participation. Consent forms are provided in Appendix A.

While "flexibility in qualitative research is essential to its exploratory, discovery orientation it cannot be conducted haphazardly and be expected to produce credible findings" (Stainback & Stainback, 1984). The focus of this inquiry is on the outdoor play environment for preschool children. Data collection strategies throughout the study are presented in Table 3.

This process of the inquiry is described in Figure 2. Research questions to guide the study were developed prior to data collection. Data were collected and categories emerged. Progressive focusing was used with the categories of data. The resulting information was used to answer the research questions.

Table 3. Data collection strategies

Data Collected	Description	When
Transcripts/ Meeting Notes	<p>All meetings between stakeholders were recorded, either through notes or tape recorder. Meetings centered around the following:</p> <ul style="list-style-type: none"> • Planning the process • Review of literature • Reviewing and discussing data • Reviewing and discussing findings <p>Taped meetings were transcribed, reviewed, and coded for aggregation with other data sources and identification of categories.</p>	January – August 2003
Reflective Journal	<p>Reflections were noted following every interaction with teachers, the director, or others associated with the setting. These included perceptions and descriptions regarding observations and experiences.</p>	December 2002 – October 2003
Environmental Scale	<p>The Preschool Outdoor Environmental Rating Scale was completed on two occasions. Discussions ensued to compare responses.</p>	March 10, 2003 July 16, 2003
Visual Data	<p>Photographs were taken throughout the inquiry. Videos were taken for intervals of 5-10 minutes on four occasions. All were reviewed and interpreted. Descriptions included the setting, strengths, needs and missed opportunities. Interpretations were reviewed by stakeholders and comments included.</p>	<p>Photos - between June 10 & August 31, 2003 Videos – June 16, 2003 June 31, 2003 July 12, 2003 August 12, 2003</p>
Documents	<p>Reference materials, such as newsletters to parents, and regulatory or accreditation reports, were collected throughout the process.</p>	November 2002 – March 2004

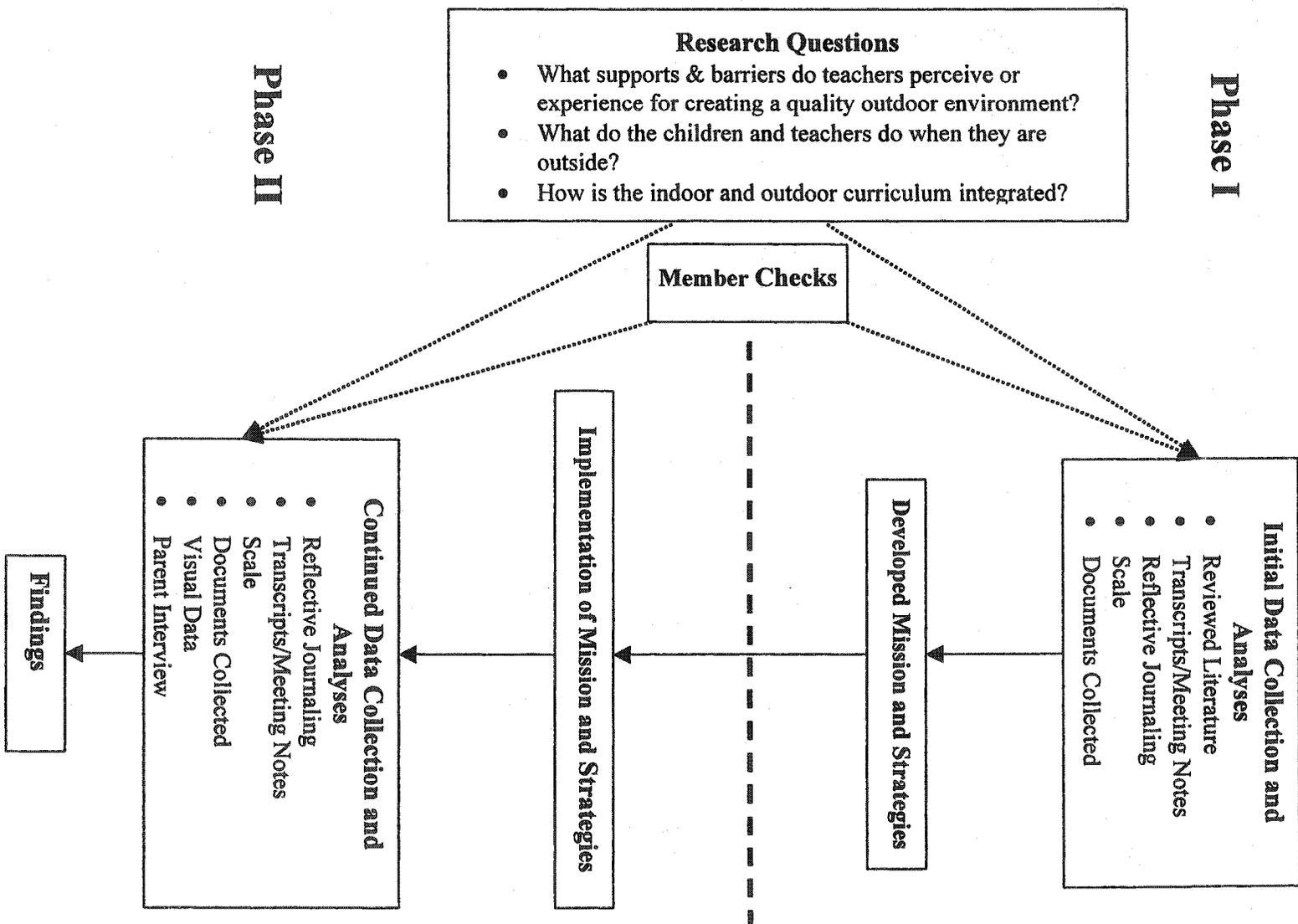


Figure 2. Categories of data

Data collection and analyses: Phase I

The study began in November, 2002 with discussions among the center Director and teachers in the identified participant classroom. We began by planning the proposed process for the inquiry.

Literature review

Initially we reviewed current literature on providing a high quality natural environment outdoors. The purpose of this was to build a foundation of knowledge regarding high quality outdoor environments for preschoolers, as well as facilitate discussion among ourselves regarding our visions for the outdoors. The literature included publications on enhancing the sensory opportunities in a natural environment, benefits of nature for children, and other general information about a high quality outdoor learning environment and connecting it to the indoor environment and curriculum (Brett, Moore, & Provenzo, 1993; Dempsey & Frost, 1993; Faber Taylor, Kuo, & Sullivan, 2001; Fjortoft, 2001; Kern & Wolery, 2002; Rivkin, 1995; Stremmel, Fu & Hill, 2002; Theemes, 1999).

Transcripts or notes of meetings

Co-researchers met approximately five times for about 60 minutes each during Phase I of the study, between November 2002 and June 2003. Meetings generally occurred during nap time throughout the study. This ensured that the teachers and the director did not have to extend their hours at the child care center. Meetings were recorded and transcribed or notes taken during the discussions. Appendix B provides a sample of the meeting transcripts.

We continued to meet throughout the inquiry to review data or aggregated information, and collaborate on the process and findings. Our goals were guided by the

research questions and included gaining knowledge about the outdoor environment at their center, how it is used, and what happens there. I was interested in perceived supports for and barriers to providing a high quality outdoor environment, as well as the connection between the indoor and outdoor curricula, as described in the literature we reviewed together, and the need to be consistent with the Outdoor Environment Mission and Strategies developed.

In addition to meetings with co-researchers, notes were maintained for a Parent Advisory Committee meeting. Eight people attended the meeting. Of the parent attendees, three were faculty members, one was a student and the other was the center director. The topic for the meeting was the outdoor environment.

Reflective journaling

To ensure that we addressed continuous standards of rigor, I began reflective journaling from the beginning of the study. Beginning in November, 2002, my journal chronicled all of my experiences at the childcare center throughout the study. I observed on 27 days for a total of approximately 60 hours, including activities that both preceded and followed time outdoors, as well as the time spent outside.

The teachers were asked to complete a journal of daily reflection of their experiences outside. It became evident within the first few weeks of data collection that this was an unmanageable task for teachers to complete given the demands on their time and their multiple priorities. I then provided a structured format that could be used for journaling, as a result of their request. Appendix B provides a sample of the log completed by the teachers. We reviewed and discussed the teachers' journals monthly. Unfortunately, this too became an arduous task. Little journal data is available from the teachers.

Environmental scale

We completed an assessment of the outdoor environment with a scale, or quantitative instrument twice. Once in March, 2003 (Phase I), and again after the Outdoor Environment Mission and Strategies were developed and adopted (July, 2003 - Phase II). The scale is available for review in Appendix C. Our main purpose for using the scale was to structure our communication regarding our perspectives on the needs and strengths of the environment before and after the Outdoor Environment Mission and Strategies were implemented. This scale was a new instrument designed to assess the comprehensive quality of outdoor environments for preschool children. It is a checklist for self-study and is designed for preschool children (ages 3-5) in center-based programs. The instrument was designed to be completed as a self-assessment tool through a single observation lasting about 90 minutes. Comments from teachers were also included, specifically regarding training and issues that could not be observed as the result of the season or other factors, e.g., questions about snow play cannot be answered in the summer. This scale was comprehensive and it helped us consider the physical and social environment in consistent terms during our discussions. It also focused our discussions around the relationship between the behavior of teachers and the center's guiding principles for the outdoor environment.

Documents collected

Reference materials, such as newsletters to parents, and regulatory or accreditation reports, were collected throughout the process. A variety of different types of data increases efficiency and provides corroborating or disconfirming evidence, and therefore supports methodological triangulation (Guba & Lincoln, 1981; Stake, 1995).

Progressive data analysis

As data are gathered progressive focusing is required (Stake, 1995). This is a “systematic reduction of the breadth of inquiry to focus on emerging issues” (p. 22). Stake’s views, combined with the spiral of action research previously described, portrays the analyses in this study. Co-researchers developed and planned for implementation of the Outdoor Environment Mission and Strategies by gathering data. These data included observations, journaling, and assessments.

Data from all sources were analyzed by coding and sorting statements or phrases into categories (see Figure 2). Direct interpretation and aggregation of all data sources and discussions among participants occurred. Then we searched for meaning relative to supports or barriers for outdoor play, as well as teachers’ or children’s activities outdoors, and connections between the indoors and outdoors. We identified patterns, inconsistencies and relationships among the data.

Six categories emerged during initial data analysis in Phase I of the study. The categories included: teacher workload, staff training, low priority, safety, interactions, and play and learning settings (play). They are described briefly as follows.

Teacher workload

It became apparent immediately upon data collection that teachers are extraordinarily busy each and every day. I reflected repeatedly in my journal about how the significant workload for teachers seemed to be a concern. I also expressed empathy for the staff, having provided direct services to young children. I recognized the number and importance of priorities that these teachers manage daily. As previously stated, meetings occurred during

the children's nap time because that was the only opportunity through the day that teachers did not have responsibility for numerous children. That was the only opportunity during the work day that there was relative quiet and an opportunity for the teachers to converse and collaborate. Nap time is their planning and preparation time as well.

Training

It became evident that there were staff training needs about effectively using the outdoor environment. While staff receive on-going training, and are required to complete 12 hours annually in various topics, they had received no training in what to do with children outside, specific to play. During one meeting among co-researchers, this comment was made about training on providing a high quality outdoor play environment, "It's amazing because we have so much training and (we're) constantly updating our training and that's never talked about."

Low priority

Data that indicated the outdoors was a low priority relative to other duties was sorted into a category as we were planning for change. Regulations required no attempt at providing play and learning opportunities outdoors, beyond dictating that children needed to go outdoors. Instruments accepted as the industry standard for assessment of childcare quality have few items that involve outdoor play (Harms, Clifford & Cryer, 1998). Accreditation requirements include nothing for the outdoor environment except minimal safety standards. Evidence of behavior or comments on the part of the staff that indicated that outdoor time was considered a break for teachers was also sorted into this category.

Safety

Safety concerns emerged as a category early in the study as well. As previously stated, regulatory or accreditation bodies focus solely on safety when addressing the outdoors in standards. The message sent from these documents, and other assessments for child care quality, is that safety is the only concern when playing outdoors. The center's rules outdoors at times seemed a bit extreme to me, but had often resulted from injuries to children. The children are not allowed to play with sticks, for example. When I questioned the director about this situation she indicated that there had been an injury to a child's eye previously as a result of a child playing with a stick. She further indicated that the playground had been reworked as the result of injuries to children from the rocks and culverts on the playground. Safety was an extreme concern and most steps to address concerns were made through redesign of the environment, as opposed to training staff in intervention techniques like engagement or planning activities.

Interactions

Data were categorized as interactions among children and other children, children and the environment, or teachers and children throughout the inquiry. Examples of data, which may be sorted into this category, included both verbal and non-verbal exchanges, including those that were positive and negative. Examples of opportunities for development of social skills were included in the data in this category. This included opportunities as a peer and as a mentor, since the play space is shared among a multiage group for a substantial period of time daily.

Play

This category included items that reflected issues surrounding the number of play settings available to the children. The following excerpt from a transcript of a meeting is from a discussion on our assessment of the outdoor environment using the scale. We are discussing the number of play settings:

“Kelly: I think we should talk about planned learning settings.

R1: There are not enough toys outside.

R2: That’s what I think too because you see a lot of competition outside. I want to play with that.”

Other data included in the category related to the types or numbers of play settings and their use by children and teachers.

Developed Outdoor Environment Mission and Strategies

To this point in the study journaling had begun; co-researchers reviewed literature together, met repeatedly to discuss data, completed and reviewed the environmental scale, and collected other documents relative to the outdoor environment. Data had been categorized and discussed based on the data that we had gathered and analyzed up to this point. Therefore, we determined that the development of a mission and strategies for the outdoor environment would be valuable as an initial change to continue to study the outdoor environment. Ideally, the Outdoor Environment Mission and Strategies would ensure we, as well as the other teachers in the center, were working within the same paradigm, give an opportunity to receive input from families, and facilitate communication about the outdoor environment.

We shared an interest in maintaining a natural setting in which the children could play and learn. We reviewed and discussed the current site plans and a newspaper article published about the environment shortly after it opened. We concluded that our interests in a natural outdoor environment are consistent with the current design of the outdoor play space and that design should be reflected in the Outdoor Environment Mission. We also reviewed budgets for the outdoor play and learning area for the current and previous fiscal year. We were interested in the cost of maintenance of the natural setting and potential finances for changes to the environment. Based on these discussions, a proposed philosophy was developed and presented to the Parent Advisory Committee for input and then approval. The resulting mission statement and strategies follow.

Outdoor Environment Mission Statement

We will utilize natural landscape elements to enhance learning through planned curricular activities and children's exploration and interaction with their environment, each other and their teachers.

Strategies

- We will use our natural environment as our outdoor classroom.
- We will incorporate loose parts and literacy materials into the natural environment.
- Planning of activities to extend all areas of the curriculum into the outdoor environment will occur. This includes at least science, math, art, language, creative drama and music.

Implementation of Outdoor Environment Mission and Strategies: Phase II

We continued, having completed the first segment of the process: planning. We proceeded to the acting, observing, and reflecting segments by implementing changes based on the Outdoor Environment Mission and Strategies, and collecting and analyzing data following these changes.

Continued data collection and analyses

Next we collected and analyzed data to study the impact changes implemented as a result of the Outdoor Environment Mission and Strategies plan had on the environment, if any. In addition to continued journaling, notes or transcripts from meetings of co-researchers, completion of the Preschool Outdoor Environments Assessment Scale (DeBord et al., in press), and collection of relevant documents, two new types of data were collected during Phase II of the inquiry. We collected visual data, including photographs and video, and a parent interview.

Visual data

Photographs were taken between June and August, 2003. The photos were reviewed and interpreted. Written interpretations (photo journaling) of the scenes were generated. While completing the photo journaling, I described the setting, both physically and socially, in which the photos were taken. Based on notes taken at the time of the photograph, I identified strengths, needs, and missed opportunities for each of the photos. These data were then reviewed by participants and their comments were incorporated in the photo journal. Samples of the photographs and journal entries are available in Appendix B. These visual data provide a direct opportunity for the reader to examine some of the experiences of the

children and their teachers while they are outdoors. Figure 3* provides an example of the photo journaling.

In addition, videotaping occurred for 5 periods ranging from 5 to 10 minutes. The main purpose of the video data was to capture interactions between the teacher and children. A similar process to development of the photo journals occurred. The physical and social setting, strengths, needs and missed opportunities from the environment were described. Visual data and accompanying written journal were reviewed by co-researchers and comments incorporated with the visual journal. Trustworthiness of data was enhanced through member checks that occurred through review of the videotapes and photographs and accompanying written data by participants.

Parent interview

One parent responded to an interview sent out via email regarding their child's outdoor play at child care. Questions were asked about her concerns and positive experiences as a parent. (See Appendix B for the interview and her response.)

Trustworthiness

Extensive effort has been made to provide authentic and trustworthy data (Guba & Lincoln, 1982). Review of data by multiple participants occurred to ensure that interpretation was consistent between co-researchers, this included four meetings among co-researchers to review and discuss data during Phase II of the study between June, 2003 and March, 2004. Prolonged engagement and persistent observation increased the rigor of this inquiry and were

* See Appendix B-3a & B-3b, Photo Journaling.

accomplished as a result of including teachers as researchers. Peer debriefing occurred as colleagues reviewed data, provided methodological guidance and suggestions, and offered input into issues of concern or question throughout the study to increase the rigor of the research. Triangulation occurred as a result of the use of video, photographic and reflective journaling, as well as notes and transcripts of discussions. Reference materials, such as the site plan and philosophy statement and strategies, were also used for comparison purposes during data analysis. Using a variety of methods from multiple sources provides trustworthiness for the data and analyses.

Progressive data analysis

We continued the process of interpretation and aggregation of all data. We again searched for meaning relative to supports or barriers for outdoor play, as well as teachers' or children's activities outdoors, and connections between the indoors and outdoors. We progressively focused the data. In addition to data that were categorized consistently with teacher workload, training, low priority, safety, interactions, and play from Phase I, a new category related to the design of the environment emerged.

Teacher workload

Additional data emerged indicating that teacher workload was a barrier to providing a quality outdoor learning environment. I was particularly concerned about the low number of play settings and loose parts outdoors. I wrote the following in my journal:

I spoke with B₁ about my concerns about the need for additional play and learning settings, she suggested that I plan and bring a couple of additional settings during each visit. She said I was welcome to use anything in their storage area.... The bottom line – this is extremely tiring work, physically and emotionally. You have to stay, or at least try, positive, enthused and

constantly expanding learning opportunities for children. All of this is done on your feet. You can only plan so much or it becomes prescriptive instead of based on the learning styles and interests of the children. Maybe that's why there tends to be so much structure and teacher directed learning in child care. It's much easier. It also can be done by someone who is not with the kids, such as a director. I know when I employed people who had little training, education or experience I told them what to teach. We didn't spend much time on the teachable moment or general info. about child development.

As a result, I planned additional activities on the remaining 16 of the 27 data collection days to provide a greater variety of play settings for the children while outside. These additional activity settings typically included books, creative drama accessories, art activities, journaling or music. Materials were chosen based on literature previously reviewed and/or current curricular themes used in the classroom. In addition to addressing my concerns about the need for additional play settings, it also increased the connection between the indoor and outdoor environments, as is consistent with the Outdoor Environment Mission and Strategies. It quickly became evident to me why this task was completed on a sporadic basis, without additional involvement from personnel outside of the regular staffing at the center. I tended to spend between two and four hours weekly finding materials or planning activities. The most time consuming activity was finding developmentally appropriate books at the local library relevant to the current classroom theme. While the center had a plethora of supplies, I was also interested in introducing unique activities. Since I had not planned numerous activities for preschool children in many years, I spent time acquainting myself with new or unusual materials and activities that the children might enjoy, such as fence weaving, natural musical instruments, biodegradable packing peanuts for sensory play and "painting", and "paper plaster". While looking for innovative ideas or materials to use in their classrooms was enjoyable for me, it was also time consuming and costly.

Training

Play and learning opportunities were identified that were not taken advantage of by staff in the data gathered following the introduction of the Outdoor Environment Mission and Strategies. The data identified missed opportunities for extension of learning or more complex play. These situations may have been handled differently had teachers had training in management and teaching in the outdoor environment. For example, the following comment is an excerpt from my reflection on visual data regarding children's interactions with foliage and insects. Teachers had prompted the children to come out from behind the bushes and put down the sticks.

“This restricts the children's opportunity for seclusion or privacy. The children are also prompted to put down sticks or stop touching the plants. This tactile experience is one of the great benefits of having a natural setting. I believe teachers need training in this area, instead of simply on safety so they can use the strengths of this environment more effectively. The insects that were attracted by the bushes provided a great flying show for the children, yet the teachers prompted the kids to get away from the bugs. The children wear insect repellent.”

Opportunities presented themselves continuously to take a child's lead and answer questions to extend their play and learning. During one of my observations a window washer came to the center and washed all of the windows, including those in the outdoor play area. The children were completely enamored with this activity and their fascination lasted for at least 30 minutes. Unfortunately it was not approached as a “teachable moment” by the staff. They regularly told the children to leave the man alone and let him do his job. The following is the excerpt from my reflection on the visual data:

“The potential for extending their learning was tremendous and it was lost. No teacher interacted with the children to answer their questions, or ease the discomfort of the man washing the windows. No squeegees, spray bottles, soap discussions/activities resulted that I saw. There are books about window

washers. Careers could have been a theme that was integrated. He had a tool belt that some of the kids thought was interesting, I assume based on the questions they asked. Dramatic play potential was tremendous too.”

The data were clear that teacher workload and lack of training are barriers to provision of a high quality outdoor play and learning environment.

Low priority

We continued to categorize data within the low priority category that indicated that the outdoor environment was prioritized low relative to other tasks that needed to be accomplished. The center received no incentives to increase the quality of the outdoor environment and consistently insure the implementation of the Outdoor Environment Mission and Strategies they accepted. Accreditation renewal occurred during the inquiry. This put budgetary and time constraints on the administrative and direct care staff. As a result of the lack of emphasis on the outdoors by the accrediting body, few enhancements were made to the outdoor environment in preparation for accreditation. Clearly, the focus was on preparing the indoor environment, both physical and social. The director indicated to me that to substantially enhance the outdoors the motivation would need to be entirely from their administration, staff or families they served, as no one else recognizes this area as a priority.

In addition, input was requested on enhancements for the outdoors in a newsletter to families. No response was received. When the amount of time that children are allowed to spend outside was discussed with several parents, one parent commented, “I never thought about how much time they may spend outside. I was surprised it was so little.” Another commented, “I never thought to ask about it.” These comments were received from parents who are actively involved in their children’s child care center through the Parent Advisory

Committee. These statements indicate the level of importance afforded the outdoors in terms of even involved parents' perspectives.

Safety

Data continued to be categorized under the heading of safety following the implementation of the Outdoor Environment Mission and Strategies. Most of the data indicated a significant focus on the part of staff on safety. The data documents that sunscreen was consistently applied to the children prior to going outside. There are repeated references to water being available for drinking and a first aid kit was brought outside for each classroom. Pictures and journal reflections document that the children wore helmets when riding the trikes.

In preparation for accreditation mulch was added to the fall zone surrounding the climber to insure that its depth exceeded 12 inches. The director indicated that, "the inspector will measure the depth of the mulch outside." As previously stated, there was virtually no other component of the outdoors assessed by accrediting bodies. When a parent was asked what goals or expectations she had for her child's outdoor experience while at the child care center, her response began with, "Well, of course I expect it to be safe."

Unfortunately, enthusiasm for safety was frequently more intense than enthusiasm for play and learning. Rules continued to be restrictive as a result of sharing space with toddlers. Some of the rules enforced as a result of sharing space with toddlers included: put the paint away; put the bubbles away; stay out of the bushes. Rules precluded children from playing with sticks and no alternative was provided. Interaction with natural loose parts was generally discouraged with safety being the reason provided to the child when they were

redirected. Children were prompted not to climb on one of the bridges repeatedly. Again, safety was the reason. The birdfeeder that was introduced during one of my observations had to be placed out of the play yard or above the children's heads to insure that the toddlers did not use it inappropriately, i.e. eating the birdseed or touching the bird feeder. Safety was clearly a key concern while outdoors throughout the inquiry.

Interactions

The interactions category became a substantial repository for data during the analyses. It included both verbal and non-verbal interactions. Included within the category were children's interactions with other children, the environment, and the teachers. They were identified as being positive, negative or neutral and sorted into those subgroups. Teachers' interactions were also sorted into subgroups. First they were sorted into positive/neutral or negative/directive interactions with children. While directive interactions with children are certainly not all negative, those which were stated negatively in tone or words, including words such as stop or don't, were sorted into this subgroup. Then the two groups were sorted in subgroups again to see if patterns existed around which interactions occurred. The positive/neutral interactions were sorted into subgroups around play settings, supervision, or attention. The negative/directive interactions were sorted into the subgroups play settings, supervision, and rules. Conclusions were drawn based on the patterns of the interactions falling into the various subgroups.

There was a sense of the teachers' responsibilities outdoors being predominantly redirection or mediation, as opposed to interacting with the children to facilitate play and learning in a more positive way. At times, children's interactions with the environment

tended to be without direction. They may run around the path repeatedly or walk from setting to setting in the planned environment. Without adequate loose parts to enhance the settings, play frequently did not develop. Negative interactions resulted from peer competition for materials or adults' directives. For example, the following entry I made in the photo journal describes interactions surrounding the use of the tricycles one day:

“Children are encouraged to take turns, but there is no set pattern to turn taking, i.e., after 10 minutes the teachers let the children know they must allow a friend to use their trike. There are occasional disturbances as a result of children not giving up the trike they've been riding for more than 30 minutes.”

Substantial changes were noted in interactions while the preschoolers shared space with the toddlers. The tone of the environment was generally dramatically different when the toddlers were present. The preschoolers had ample space and skills to interact with their peers and communicate verbally when provided materials and activities. When the toddlers arrived, as a result of their developing skills in communication and social interaction, the rules changed. There was frequently crying, which usually has a deleterious effect on an auditory experience. I noted in my journal, “Once the toddlers came out that had to be put away. They weren't able to blow the bubbles and there was a concern about choking or drinking the soapy liquid.” The number of children in the space almost doubled as well. This made for less open space within which the preschoolers could run or move. Rules were more restrictive when the toddlers arrived, such as hiding within the bushes. One positive outcome of sharing the space was the opportunity for siblings to spend some time together during the day and for more accomplished and skilled peers to help others with experiences and building knowledge, also called scaffolding (Vygotsky, 1978).

Play

Data continued to be grouped in the category of play following the implementation of the Outdoor Environment Mission and Strategies. This category was comprised of data that related to the types of activities that were provided for the children by the teachers or me, and those that were inherent in the design of the environment, such as the sand play areas, the trike path, the climber, or the open greenspaces. All observations occurring after the Outdoor Environment Mission and Strategies were introduced took place in the summer months. There was tremendous variety in the play settings provided. Art activities such as sidewalk chalk or painting were provided. A basket of books was available for the children to read with their teachers on the grassy hill or on the patio throughout the summer. Creative drama props were available around various themes such as house, vacation, and camp during the summer. Children had the opportunity to exercise by running on the path, tricycling, and moving with musical instruments or streamers. Sensory activities such as sand and water play were available continuously. The variety of foliage provided ample opportunity to smell fragrant blooms, feel the nuts or leaves from some of the trees, or watch the insects. There were loose parts for between four and seven play settings provided throughout the summer. Manufactured loose parts available to the children included balls, blocks, block accessories such as toy people, sand toys, styrofoam peanuts and others. Natural loose parts with which the children interacted included sand, birdseed, black walnuts, various flowers, various leaves, mulch, stones, and occasionally sticks. The children tended to use one of the bridges and two areas that include tall grasses or bushes as play settings, in addition to the thirteen settings inherent in the design of the environment. Typically the children were hiding in these tall grassy areas by themselves or with a small group of peers. A variety of additional play

settings were provided following the implementation of the Outdoor Environment Mission and Strategies.

Design

The final category developed from the data gathered following the implementation of the Outdoor Environment Mission and Strategies was *natural environment or design*. The data that were categorized within this group documented opportunities provided by the design of the environment for children and teachers to experience nature in some way. For example, the following excerpt is from the reflection on the visual data and describes some of the components of the design of the environment that support a connection with nature.

“There is a variety of foliage as well. There are bushes blooming for most of the spring and summer. This creates opportunities for interactions with a variety of different types of bugs, worms, bees, etc.” There were numerous examples of connections with grass, trees, shade, or other foliage throughout the data sources. The pictures also document the opportunities for children to experience these benefits of nature while outdoors at the center.

Other data in this category include ways that settings built into the environment are used by the teachers, such as the stage being used for dramatic play. The following excerpt from my photo journal also provides an example of how the planned environment is used by teachers and children, “bringing this manipulative outside was a great idea. It is rubber, so it won’t be damaged. It is long. There is much more room for the children to spread it out on the patio. This is also providing another affordance in a space that frequently goes unused.” Parents appreciate the opportunities presented by the design of the outdoor environment at this center as well. When a parent was asked about her interest in opportunities for play and

learning for her child outdoors she said, “I want (my child) to have lots of outdoor play options, so the sand box, trikes, sitting stones, trees, gazebo and bridge all contribute to that.”

The environment in which this inquiry took place offers ample opportunities for children to interact with nature and has multiple play settings incorporated into its design for use simultaneously. This is consistent with the Outdoor Environment Mission and Strategies, as well as the literature that we reviewed while developing the strategic document.

Summary of categories

To this point in the inquiry, data regarding the outdoor environment that identified similar concerns or strengths have been sorted into categories. Then the categories were reviewed and some similar categories were combined or data rearranged among categories to continuously reduce the breadth of the information and glean salient points. The categories included teacher workload, training, low priority, safety, interactions, play, and design. Next, we proceeded to review the categories to determine if any could be combined, as well as how the categories provided information relative to the research questions. Data from the categories of Design, Interactions, Play and Safety provide information about what teachers and children do outside. Play and Design offer insight into how the indoor and outdoor curriculum is integrated. Teacher workload, training, and low priority identify barriers to teachers perceiving or experiencing creation of a quality outdoor environment. Data categorized in play describes the supports teachers receive for creating a quality outdoor environment. The data support the availability of materials and supplies to provide a multitude of opportunities for the children to play and learn outdoors on a daily basis. Figure 4 illustrates the reorganization of the data relative to research questions.

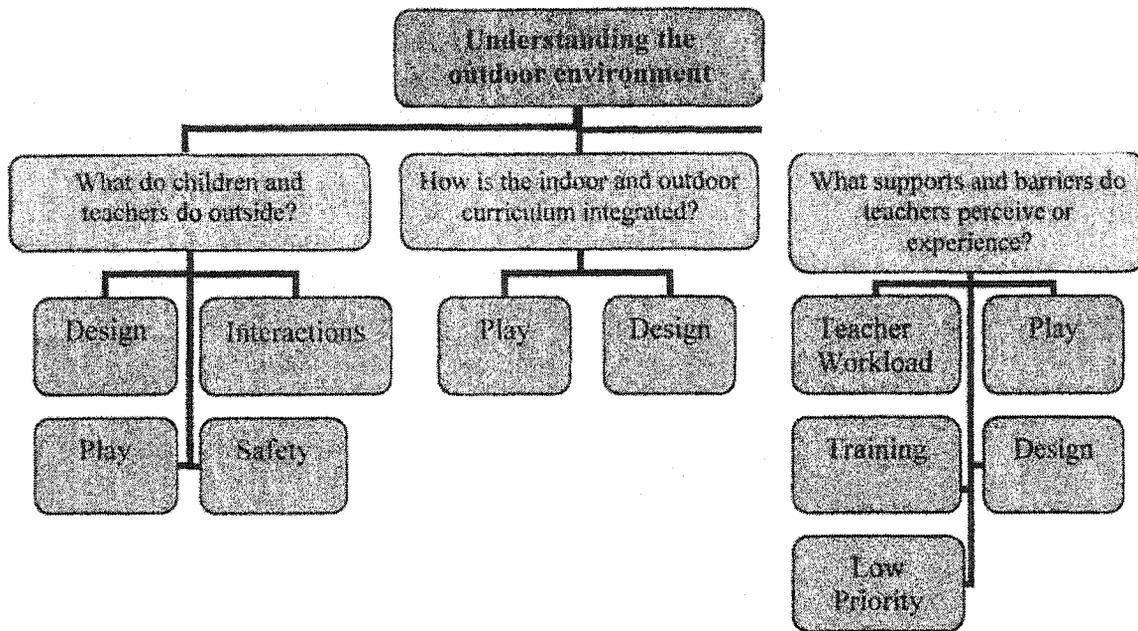


Figure 4. Data categorization

Findings

Data analyses and identified categories provided us with insight into the outdoor environment following the implementation of an Outdoor Environment Mission and Strategies at the site studied. We used these data to answer the research questions for the inquiry:

- What supports and barriers do teachers perceive or experience for creating a quality outdoor environment?
 - What do the children and teachers do when they are outside?
 - How is the indoor and outdoor curriculum integrated?

We found that the children, supervised by their teachers, enjoy an environment rich with vegetation, many opportunities for diverse types of play and learning, and ample opportunity

to interact with the environment, adults and each other. Teachers bring their individual perspectives outdoors in terms of supervision and engagement with the children they serve.

Research Question: What supports and barriers do teachers perceive and experience for creating a quality outdoor environment?

Supports

The teachers with whom I worked perceive support for an active outdoor curriculum from administration, parents and children. Administrative support includes fiscal resources to enhance supplies and materials. The items purchased can be used outdoors; in addition to indoors the director reports that she annually allocates approximately \$3,000 for maintenance and replanting of the natural components of the outdoor environment. She also participated actively as a co-researcher throughout this study, even while pregnant with twins. I think that demonstrates an active interest in the outdoor environment and a commitment to continuous improvement of her program, as well as professional development for herself.

Parents indicate support for their children to participate in activities outdoors and provide materials when necessary such as bathing suits or creative drama props. For example, during “camp week” parents provided care packages or post cards to children that they received outdoors. The Parent Advisory Committee unanimously endorsed the mission statement and strategies for the outdoor play and learning environment to demonstrate their support for an active and natural area and curriculum. One parent’s response when asked about her interest in the outdoors for her child follows. It clearly expresses her support for time outdoors,

“I like the idea that kids get #1 a lot of outdoor time and #2 that it is mostly unstructured. I really like the idea of the teachers being out there to make sure

the kids are OK and not beating on each other, but after that, just let 'em go! These days everything seems to be SO structured, that I think it's really important to let the kids play on their own and use their own imaginations and preferences to do what they're interested in."

The children generally express interest in the outdoors through their enthusiastic exit when provided the opportunity to play and learn outside. The visual data are particularly convincing that the children are enjoying themselves, as is indicated in the pictures shown.

Barriers

Unfortunately, barriers to high quality outdoor play were identified. Specifically, workload for child care staff, the low prioritization of the outdoors relative to other responsibilities, and staff training were identified barriers. Many statements previously included were provided by teachers, parents and administrators as reference to the existence of these barriers. In addition regarding teacher workload, when asked to reflect on her experience with the study, one teacher responded, "Our day is busy, busy, busy and I barely even get a second to myself, so I didn't get a chance to brainstorm or chat (about the study)." When asked if teachers needed training in providing a high quality outdoor environment, a parent responded:

"No, I don't think they have to have any kind of training. Not that that would be a BAD idea, just not necessary. Seems to me that anyone who enjoys the outdoors and can identify some bugs and/or birds and point out a plant or two, OR is willing to look up the information, is well prepared."

Her statement may summarize the low prioritization of the outdoor environment, and the need for training to enhance teachers' skills outdoors. Her response supports a perception that most people are capable of providing early care and education, and the outdoor environment is an extension of those services therefore why would people need training. In contrast, if

teachers received training they might be able to provide more information to families about the play and learning that occurs outdoors and how valuable it can be.

Research Question: What do the children and teachers do when they are outside?

The following entry in my journal describes a quality outdoor environment provided after implementation of the Outdoor Environment Mission and Strategies. There was evidence of enthusiasm and creativity employed to activate the outdoor environment. The teacher implemented activities that connected the indoor and outdoors, including language and creative drama activities, and provided a variety of loose parts such as books, trikes and streamers. I observed on June 23:

“A. had set up the sensory table and a tent, trikes were available too. I brought out streamers and “I” books (they studied the letter “I” this week). Sand play and the climber were available, as always. Since this was the first time books were available outside, it was very popular. The kids sat on the blanket on the hill with A. and looked at the books. She read one story. Some of the kids lay down with their books or sat on a teachers’ lap. Pairs of kids looked at books together too. It was a great activity. The theme this week was camp, which is why the tent was set up outside. Since the theme was camp, parents had been asked to send post cards and care packages to their children as if they were at camp. A. delivered the mail while the kids were outside. I thought this was great! She read the post cards to each child and then they put them in their cubbies. The parents’ notes and stuff were great. It was so nice to see this level of parent involvement. Each child received individual attention, phonemic awareness activities, all sorts of great learning, during the mail call. A. was so impressive. She tried so hard and was so attentive to make each child’s experience positive. She wanted numerous settings for play and learning too.”

Children

The outdoor environment at the center offered a multitude of activities for children during the study. The play yard there has rich vegetation, ample shade from mature trees, grassy areas, tall grasses and bushes, as well as a variety of other foliage. It offers hills and

mounds, as well as flat areas for play. Birds, bugs, butterflies and bunnies inhabit the fenced in area in which the children play. Many developmentally appropriate activities were available for the children outside addressing all areas of development.

Motor skills

Children develop their gross motor skills by running, riding trikes, moving with music or streamers, and using the stairs on the stationary equipment. In addition, about weekly children would go for walks in the larger university campus, play organized games in a large group on a huge lawn area, or go on community outings. The sand areas were always busy places. Sand and water play help children develop a variety of motor skills and offer opportunities for sensory stimulation.

Sensory experiences

Sand play was continuously available during outdoor play. During the summer months water play was available weekly. Additional sensory activities were provided regularly as well, such as playing with packing peanuts, dirt or bird seed. Vestibular senses are stimulated on the twisting slide and by rolling down a grassy hill.

Emotional skills

Many opportunities to support the development emotional skills existed for the children outdoors. Frequently two or three children participated in dramatic play on the climber, as well as on the stage available for creative drama. Props supported them in their creative roles as parents, vacationers, cats, and others. Other opportunities for creativity and self-expression were available for the children through artwork, music and movement

outside. Various types of painting, using chalk on the sidewalk, weaving in the fence, or drawing were offered.

Cognitive skills

Science, literacy and math skills were built by activities provided outdoors. Literacy skills were enhanced through the availability of books and phonemic awareness activities, like the teacher reading postcards from family members, in conjunction with the indoor curriculum. Children collected, counted and categorized bugs during insect week. Puzzles were available that helped children with counting and literacy skills, in addition to building their fine motor skills. Musical instruments provided opportunities to work with rhythm patterns outdoors too.

Social skills

The children had many opportunities to develop social skills outdoors as well. Children interacted with each other, the environment and their teachers. Based on the coding of the interactions observed, the children interacted equally often with the environment and their peers, and less often with their teachers. The vast majority of all interactions were positive. Negative interactions generally centered on displeasure on the part of a child with the distribution of resources, e.g. not enough toys or not sharing of toys.

Teachers

What teachers do outside varies. Each teacher, as when they are indoors, seems to bring their own perspective based on their training, experience, and interests to the outdoor environment. On July 10, 2003, I noted in my journal:

“The teachers are so different... They really seem to represent a full continuum of teachers. D. is at one end, very authoritative, requires the children to stick to task, speaks to them in a directive tone and allows little flexibility or variation. A. is interested in the children expressing themselves more and having fun doing it. She seems a little unsure of herself at times. She maintains closer boundaries (in terms of her self-expression and the children’s). She also seems more comfortable with smaller groups. B. is completely at ease and allows the children to express themselves fully. Even when they are being redirected she generally does so in a calm and positive way. Her tone changes little and the children seem to respect her and like her completely. She is also much more physically affectionate with the children. She seems to get more hugs than the others too.”

Some teachers support the children’s learning by using open-ended questions and not intruding when exploration is occurring well without them. Other teachers are focused primarily on the rules and safety and leave little room for independent exploration for children. One of the teachers commented about her experience in the study:

“This research project helped me look closer at child to child interactions, as well as adult to child interactions. I really learned quite a bit more just by looking at the quality of different outdoor environments and seeing what happened to expand children’s learning opportunities.”

Teacher interactions

Substantially more positive teacher interactions were noted than negative during this inquiry. An example of the positive teacher-child interactions is described below in my interpretation of the visual data:

“Attention and conversation from an adult for the two children. B. is facilitating communication and social skill development during this interaction, in addition to literacy skills as she spells X’s name. B. is at their eye level. She has provided them with choices of colors and not limited their painting by providing an outline or even a verbal guide. They can experience the process uninhibited, except by their need to be respectful of their peer who paints beside them. Several children covered the entire paper with different colors, resulting in “classic brown”. They expressed happiness and enthusiasm while engaged in the activity. There was laughter and dancing. (I had a great time watching! I think this is an incredibly idyllic opportunity for children and a wonderful use of the outdoor environment!)”

Unfortunately these positive examples of opportunities for play and learning, as well as interaction with beneficial adult role models, were coupled with negative interactions from adults. The negative interactions generally took place as a result of adults providing surveillance, as opposed to being actively engaged in supervision with these young children. The director commented about some teachers' surveillance type interactions while outdoors as opposed to active engagement with the children, "Some teachers do see the playground as a break. They think, "It's fenced. We can let them go." That's not the point of the playground."

Again, these negative examples were far fewer than those of positively engaged adults during my observations. The following excerpt was in my journal:

"The only teacher interaction is directive. There was no explanation given for not mixing the sand and water just don't do it, it's against the rules."

The following excerpt from my journal briefly describes interactions during preparation and water play, "Some teachers' tone indicated that this was a hassle that they didn't like. Many teachers didn't participate in the water play at all." Based on my own experiences providing early care and education services and my observations during this inquiry, teacher workload may be a significant issue regarding some of the negative interactions. For instance, preparing the children for water play is an overwhelming task. Getting everyone out of their clothes and into their bathing suits and then doing the reverse 45 minutes later is tiring. Add covering everyone in sunscreen and insect repellent and then assisting the first child you prepared in taking everything off to use the bathroom. Multiply this routine times 18 children. It can be overwhelming.

Research Question: How is the indoor and outdoor curriculum integrated?

In this inquiry, a connection between the indoors and the outdoors is stated as a component of the mission statement. Sometimes the connection would be extremely strong.

For example during insect week I noted in my journal:

“B. brought out the bug collectors, magnifying glasses and other stuff related to bugs. The kids loved it! They shared the bug boxes well. The teachers interacted with the kids well around the bug collecting and observing, e.g., they talked to them about what they found or what to look for, they asked open ended questions, etc.”

Other times the connection to the outdoors from the inside was a discussion of the weather, the houseplants and the pet rabbit, Abra. The connection may be evident from the outside to the indoor curriculum only as the result of using blocks in the sensory table. These examples clearly demonstrate the knowledge and ability on the part of the teachers to insure an indoor-outdoor connection. However, based on my experiences and review of the data, that consistency of implementation may be due to barriers of high teacher workload, training, and priority of the outdoor environment. Again, there is limited emphasis on the part of surveying bodies to incorporate a strong indoor-outdoor connection. This can result in prioritization by teachers being on an item that is of greater importance to regulatory bodies.

Discussion

This inquiry can play a significant role in guiding stakeholders in child care to eliminate barriers to the provision of a high quality outdoor environment. It illuminates issues surrounding the planning and implementation of guiding principles, like an Outdoor Environment Mission and Strategies, for early care and education staff. It describes a high

quality, natural outdoor environment for preschool children and identifies future questions to be answered about the outdoors for children in childcare.

We gathered and analyzed data in planning for a change within the outdoor environment. Based on the data and analyses, we determined that development of an Outdoor Environment Mission and Strategies for the outdoor environment would be a valuable change to introduce. It provided teachers with a focus on the outdoors, and in planning for its implementation teachers reviewed information about other programs and research that increased their awareness about the outdoors. Following introduction of the Outdoor Environment Mission and Strategies, we collected and analyzed data to study the impact this change had on the environment, if any. Data were grouped and then reorganized to reduce the categories of data and identify emergent issues. The categories were then used to respond to research questions identified at the outset of the inquiry.

We found that children are actively engaged in play and learning of all kinds while outdoors in childcare. Teachers supervise the children using their own perspective on the outdoors, which may be a result of experience and personality. The indoors and outdoors are connected through various materials and activities for the children. Teachers' provision of high quality services outdoors is supported by families, through active involvement, and administration, through fiscal and planning support. Barriers to providing a high quality outdoor environment include the workload of teachers in child care, lack of training in providing a high quality outdoor environment, and the low prioritization of the outdoor environment by stakeholders.

The outdoor play environment studied has many outstanding qualities to be emulated in other childcare settings and sought by family members looking for a childcare "home" for

their preschool aged loved one. This center has slightly varied levels of terrain for rolling, riding, dancing, puppet shows, dramatic play, sliding and other types of movement. It provides opportunities for development of gross motor skills and vestibular senses, among others. It offers varied surfaces, e.g. cement, grass, mulch and sand. Sensory experiences abound. Children can smell the flowers and feel the textures of the plants, grass and sand. There are colorful ribbons, in addition to the plantings, birds feeding and artwork, to stimulate the visual sense. Wind chimes and tall grasses provide stimulation for the sense of hearing, in addition to the birds singing and planes flying overhead. There is a sense of being in a natural place in this outdoor environment which provides many benefits such as an increased ability to focus following exposure and a sense of renewal (Faber-Taylor, Kuo & Sullivan, 2001; Kaplan, 1995). Child development professionals recognize the importance of an outdoor play area with numerous settings for play and this is clearly demonstrated in the center studied (Sanoff, 1995). The children demonstrate their enthusiasm for this environment by running, jumping, smiling and laughing consistently.

This study also demonstrated that early care and education professionals have tremendous responsibilities in serving our children. Even in high quality programs, the outdoor environment is prioritized below other needs. This is accepted by regulatory bodies, accreditation standards, and families. In some cases training is not even expected regarding the provision of an effective outdoor environment. One comment from a teacher regarding the review and discussion of literature on the outdoor environment was:

“So many areas of the outdoors were explored and looked at. I always knew how important it was for children to explore the outdoor environment, and how much I loved it as a child, but never realized how much could be incorporated into it.”

We need to provide teachers with the preparation to actively use the outdoor play and learning environment for all young children.

It would be wonderful if every center could enjoy the rich foliage and expanse of space that is present for the children studied. Fiscal, administrative and regulatory support is necessary to insure that children who spend the majority of their waking hours in childcare have positive experiences with nature. We need to help them make the memories that former generations have of playing outside.

Implications

By all accounts the center in which this inquiry occurred is high quality. There were still areas identified that could improve the quality of the outdoor environment for the children served. This case study highlights areas for future research.

The opportunity to hear directly from teachers and children, and reflect their varying realities, is an important component in qualitative research if we are truly interested in, and respectful of, these stakeholders. We cannot make inferences without their input. Bullough and Gitlin (2001) indicated that, regardless of level of experience, teachers generally disregard university-based research on education as valuable for their daily professional activities since their voice is rarely heard and practical or realistic experiences infrequently presented (Stremmel, 2002). To combat the disenfranchisement from research that teachers may perceive, they collaborated as researchers to make a direct impact on their behavior and the outdoor environment in this early care and education setting. This strategy may support future change in in early care and education settings.

Time outdoors

While regulations dictate a minimum amount of time daily that children in care must spend outside, it would be valuable to know in reality how much time is spent outside. The children studied spent two to three hours outdoors daily in the summer when the weather was temperate. During the remainder of the year the children generally spend the minimum required time outdoors, which is approximately one hour divided in two play intervals. Standards tell us when it is too hot, too cold or there is too much pollution to take children outside, yet inclement can be understood in different ways. Should children never play outside in the rain?

In addition, a connection has been established between the amount of time children spend outside and childhood obesity (Takahashi, Yoshida, Sugimori, Miyakawa, Izuno et al., 1999). Given the number of hours children spend in child care, we should better understand the amount of time children spend outside while in child care and the nature of the activities in which they participate. It seems likely that with concerns about childhood obesity increasing active outdoor play will become a higher priority. An emphasis on increasing endurance and strength during activities that are physically challenging for young children may become important to regulatory and accreditation bodies, as well as parents in the future.

Cultural differences

Other cultures experience the outdoors differently than the center studied. Children in Scandinavia play outdoors in all temperatures (Fjortoft, 2000). Children in other parts of Europe enjoy the challenge of building with hammers and nails or cooking over an open fire (Brett, 1993). Comparisons of health and injury statistics, as well as the study of satisfaction

with the environment on the part of children, may provide insight into whether sheltering our children from risk provides benefit that outweighs the losses of allowing them to experience these challenges. In addition, it may be valuable for teachers and parents of young children to receive exposure to how other cultures approach outdoor play, including the challenges and benefits they receive.

Parental perspectives

This study provided little information about parental perspectives about the outdoor environment. Further exploration of parents' perspectives on the value of parent orientation and training, regarding outdoor environments would be valuable. As play settings outdoors increased during this inquiry the director noted that parents expressing concerns about the cleanliness of their child also increased. Parents in this center were mobilized to form the Parent Advisory Committee as a result of safety concerns on the playground. When asked what a parent respondent expected for her child in the outdoor environment at the center, her first response was, "I expect it to be safe." If additional information about the value of natural environments and play and learning opportunities outdoors were provided for families, would or should these perspectives change?

Teacher training

The majority of negative adult-child interactions in this inquiry took place as a result of adults providing surveillance, as opposed to being actively engaged in supervision with these young children. Surveillance is characterized by teachers standing back and watching children, communicating with them only to tell them to stop doing something that may result in injury, or treat them when the injury occurs. We need to develop a greater understanding

of what types of training, e.g., higher education, in-service training, or both, are valuable to support teachers in providing positive interactions, or not intrude when positive play is occurring, with children while outdoors. There may be a connection between the amount and type of training each teacher has and the way they plan for the outdoors as well. Is the issue of supervision versus surveillance related more to workload than to training?

Teacher journaling

Teachers indicated that they didn't have the time to complete regular journaling for self-reflection during the study. As a result, we have journals from the teachers on four days throughout the entire inquiry. Journaling has been found to be an effective tool for teachers in early care and education (Tertell, Klein, & Jewett, 1998). Additional study of this area may be helpful. The amount of reflective journaling completed by the teachers may also speak to teacher workload.

Professionalism in early care and education

Some people believe that anyone can provide early care and education. Their behavior, especially their willingness to financially support services, or lack thereof, communicates this perspective. The vast majority of the staff in this profession are women. While the center studied offers higher pay and benefits than most other child care employers nationally, the staff is still paid less than ten dollars an hour on average. This includes women with Bachelor's degrees. From my perspective, these factors of little professional respect and poor pay and benefits, denote characteristics of a disenfranchised population. There is still a tremendous amount of advocacy work to be done to attract and keep high quality

professionals. This will only occur when early care and education is an honorable and respected profession where you can earn a living wage.

Prioritization by regulatory and accrediting bodies

Reconsideration and revision by regulatory and accrediting bodies of their current assessments, as well as updating of other accepted instruments, is essential if the outdoor environment is to receive more attention by providers of early care and education. While an acceptance by early childhood and design professionals of the value of the outdoor environment exists, it is not reflected in instruments used. This must change for centers to value the outdoors as well.

Children spend a significant portion of their waking hours in care away from their homes. Therefore, early care and education settings will most likely provide them with the bulk of, or whatever opportunities for, exploration of the outdoors they will have, opportunities that previous generations of children have enjoyed at home. What experiences do they have outdoors in child care? This examination of an outdoor play environment for preschool children suggests that in this high quality child care center children are actively engaged in play and learning outdoors. Teachers plan and support these activities. Barriers, such as workload and low prioritization of the outdoor environment by stakeholders, exist which may hinder children's experiences. This case study highlights areas for future research to determine if other early care and education settings experience similar struggles, as well as additional questions to be answered.

I find Shel Silverstein, the children's poet, to be enjoyable to read, as well as profound. His poem, "Sky Seasoning," in *Where the sidewalk ends* (1974, p. 31) succinctly captures our need for time outdoors.

"A piece of sky
 Broke off and fell
 Through the crack in the ceiling
 Right into my soup,
 KERPLOP!
 I really must state
 That I usually hate
 Lentil soup, but I ate
 Every drop!
 Delicious delicious
 (A bit like plaster),
 But so delicious, goodness sake-
 I could have eaten a lentil-soup lake.
 It's amazing the difference
 A bit of sky can make.

References

- Bilton, H. (1999). *Outdoor play in the early years: Management and innovation*. London, U.K: David Fulton Publishers.
- Brett, A., Moore, R. C., & Provenzo, E. F., Jr. (1993). *The complete playground book*. Syracuse, NY: Syracuse University Press.
- Bullough, R. V., & Gitlin, A. D. (2001). *Becoming a student of teaching: Linking knowledge, production and practice*. New York: Routledge Falmer.
- Carson, R. (1956). *The sense of wonder*. New York: Harper & Row, Publishers.
- Chawla, L. (1994). *In the first country of places: Nature, poetry, and childhood memory*. Albany, NY: SUNY Press.
- Creswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among five traditions*. Thousand Oaks, CA: Sage.
- DeBord, K., Moore, R. C., Hestenes, L. L., Cosco, N., & McGinnis, J. (2001). *Preschool Outdoor Environment Assessment Scale*. Raleigh, NC: Unpublished.

- Dempsey, J. D. & Frost, J. L. (1993). Play environments in early childhood education. In B. Spodek (Ed.), *Handbook of research on the education of young children* (pp. 306-321). New York: MacMillan.
- Denzin, N. K., & Lincoln, Y. S. (1998). *Strategies of qualitative inquiry*. Thousand Oaks, CA: Sage Publications Inc.
- Esbensen, S. (1990). Play environments for young children: Design perspectives. In S. C. Wortham & J. L. Frost (Eds.), *Playgrounds for young children: National survey and perspectives* (pp. 49-68). Reston, VA: American Alliance for Health, Physical Education, Recreation and Dance.
- Faber Taylor, A., Kuo, F. E., & Sullivan, W. C. (2001). Coping with ADD: The surprising connection to green play settings. *Environment and Behavior*, 33(1), 54-77.
- Fjortoft, I. (2001). The natural environment as a playground for children: The impact of outdoor play activities in pre-primary school children. *Early Childhood Education Journal*, 29(2), 111-117.
- Glesne, C. (1999). *Becoming qualitative researchers: An introduction* (2nd ed.). New York: Addison, Wellesley, & Longman.
- Guba, E. G., & Lincoln, Y. S. (year). Epistemological and methodological bases of naturalistic inquiry. *Educational Communication and Technology*, 30(4), 233-252.
- Harms, T., Clifford, R., & Cryer, D. (1998). *Early childhood environmental rating scale*. New York: Teachers College Press.
- Hart, C. H. (1993) (Ed.). *Children on playgrounds: Research perspectives and applications*. Albany, NY: State University of New York Press.
- Kaplan, R., & Kaplan, S. (1989). *The experience of nature: A psychological perspective*. Cambridge, U.K.: Cambridge University Press.
- Kaplan, S. (1995). The restorative benefits of nature: Toward an integrative framework. *Journal of Environmental Psychology*, 15, 169-182.
- Kern, P., & Wolery, M. (2002). The sound path: Adding music to a child care playground. *Young Exceptional Children*, 5(3), 12-20.
- Korpela, K. M. (1992). Adolescents' favorite places and environmental self-regulation. *Journal of Environmental Psychology*, 12, 249-258.
- Lincoln, Y. S. (1995). Emerging criteria for quality in qualitative and interpretative research. *Qualitative Inquiry*, 1(3), 275-289.

- National Research Council. (2003). *Working Families and Growing Kids*. Washington, DC: Author.
- Rivkin, M. S. (1995). *The great outdoors: Restoring children's right to play outside*. Washington, DC: National Association for the Education of Young Children.
- Sanoff, H. (1995). *Creating environments for young children*. Raleigh, NC: North Carolina State University, School of Design.
- Silverstein, S. (1974). Sky seasoning. In *Where the sidewalk ends: The poems and drawings of Shel Silverstein*, 31. New York: Harper Collins Publishers.
- Stainback, S., & Stainback, W. (1984). Methodological considerations in qualitative research. *Association for Persons with Severe Handicaps*, 9(4), 296-303.
- Stake, J. (1995). *The art of case study research*. Thousand Oaks, CA: Sage Publications, Inc.
- Stremmel, A. J. (2002, September). Nurturing professional and personal growth through inquiry. *Young Children*, 62-70.
- Stremmel, A. J., Fu, V. R., & Hill, L.T. (2002). The transformation of self in early childhood teacher education: Connections to the Reggio Emilia approach. In V. R. Fu, A. J. Stremmel, & L. T. Hill (Eds.), *Teaching and learning: Collaborative exploration of the Reggio Emilia approach* (pp. 135-145). Upper Saddle River, NJ: Merrill/Prentice Hall.
- Takahashi, E., Yoshida, K., Sugimori, H., Miyakawa, M., Izuno, T., Yamagami, T., & Kagamimori, S. (1999). Influence factors on the development of obesity in 3-year-old children based on the Toyama Study. *Preventive Medicine*, 28, 293-296.
- Tertell, E. A., Klein, S. M., & Jewett, J. L. (1998). *When teachers reflect: Journeys toward effective inclusive practice*. Washington, DC: National Association for the Education of Young Children.
- Theemes, T. (1999). *Let's go outside: Designing the early childhood playground*. Ypsilanti, MI: High Scope Press.
- Turnbull, A. P., Periera, L., & Blue-Banning, M. J. (1999). Parents' facilitation of friendships between their children with a disability and friends without a disability. *Journal of The Association for Persons with Severe Handicaps*, 24(2), 85-99.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher mental processes*. Cambridge, MA: Harvard University Press.

**CHAPTER 4: OPPORTUNITIES FOR SELF-DETERMINATION IN THE
OUTDOOR ENVIRONMENT FOR PRESCHOOL CHILDREN IN
AN INCLUSIVE CHILD CARE CENTER**

A manuscript submitted to the *International Journal of Early Years Education*

Kelly Ross Kantz

Abstract

Self-determination is the ability to make meaningful life decisions. We develop this ability through experiences in making choices and acting independently from the time we are born. For most young children opportunities proliferate for exploration, making choices, expressing interests, interacting with friends, demonstrating independence, taking risks and beginning to take responsibility. Children with disabilities generally have fewer opportunities for these experiences which lead to the ability to control your environment as the result of physical, sensory or cognitive challenges. This study examines self-determination opportunities for young children in the outdoor environment of an inclusive early care and education center.

The importance of an outdoor play area with numerous settings for play is accepted as the standard in the field of early care and education (Brett et al., 1993; Sanoff, 1995), however, outdoor play is arguably the most neglected aspect of these services today. This study provides an in-depth, qualitative examination of an outdoor play environment for preschool children in an inclusive center-based program for early care and education. The focus of the inquiry is on opportunities for choice, access and control provided outdoors for the young children to begin to develop self-determination skills. While we found that the

children were provided ample opportunities for choice in terms of activities. Their outdoor environment provided a natural setting that included many activity pockets that were accessible by all, the interest of safety outweighed the need for children to be challenged physically or offered opportunities for play like swings.

Introduction

Self-determination is the empowerment of individuals to exercise control in their lives (Sands & Wehmeyer, 1996). We develop skills to influence our world and make meaningful decisions as adults as a result of our experience as children (Abery & Zajac, 1996; Geisthardt, 1998, Wehmeyer, 1996a). For most young children opportunities proliferate for exploration, making choices, expressing interests, interacting with friends, demonstrating independence, taking risks, and beginning to take responsibility. Outdoor environments, in particular, tend to be places where children have ample opportunity for exploration and independence free from adult intrusion (Dempsey & Frost, 1993). Children with disabilities may have fewer opportunities for these experiences that lead to the ability to be self-determining as a result of physical, sensory or cognitive challenges (Abery & Zajac, 1996; Geisthardt, 1998). Wehmeyer (1996b) emphasized the importance of supporting the development of self-determination for people with disabilities. He stated:

The movement to support and promote self-determination is about treating people with dignity and respect. It is about enabling people with disabilities to achieve independence, integration, and inclusion to the greatest extent possible by providing them the opportunities to learn the skills they need and the chance to put those skills into action. It is about empowerment, choice, and control. (p.33)

Changes in the workforce between 1970 and 2000 saw the rise in the number of working mothers from 38% to 68%, with little reduction for fathers. This has resulted in

more than 35 million children in the United States placed in care outside of their home for 22 to 40 hours weekly on average (National Research Council, Working Families and Growing Kids, 2003). Given the percentage of their waking hours that children spend in care, the impact that early care and education has on the lives of young children is tremendous. For children, particularly those with special needs, opportunities for decision making, control, and responsibility, among others, need to be practiced in early care and education environments. While the outdoor play area offers opportunities for all of these skills to be practiced, it is arguably the most neglected aspect of early care and education services today (Bilton, 1999; Dempsey & Frost, 1993; Esbensen, 1990; Hart, 1993).

The physical environment has a tremendous impact on opportunities for choice, control, risk, interaction and development of friendships, (Brett, Moore, & Provenzo, 1993; Brotherson, Cook, Cunconan-Lahr, & Wehmeyer, 1995; Haugen, 2003; Hudson, Thompson, & Mack, 2001; Nabors et al., 2001; Smith, 1998). Children with special needs may require accommodations, such as physical changes in the environment, to support access and choice. Outdoors this could include ramps, the use of accessible surfacing such as wood carpet (an engineered wood fiber that settles so that people who use wheelchairs can move across it) among others, musical elements to support children with visual impairments, signs and labels to support literacy development, and others. Access and accommodations communicate to children with challenges that there is interest in including them. These changes to the physical environment can support self-determination for children with disabilities which could, in turn, promote higher self-esteem (Brotherson, et al., 1995). Accommodations for children with disabilities may communicate to typically developing children that inclusion is encouraged and attitudinal barriers are not supported (Brotherson et al., 1995).

Attitudes toward self-determination for children with disabilities significantly impact their success. If children are encouraged to negotiate the play yard independently by using sound cues or other supports available to them this increases their experience with independence and control. If interaction with friends is supported and encouraged by teachers and caregivers, children will respond readily. If independence is encouraged at home and families accommodate their children in building self-determination skills they will gain valuable experience in control and decision making beginning in early childhood. Turnbull and Turnbull (1998) suggested that not all families value independence and individual choice, particularly for individuals with disabilities. The concepts underlying self-determination are rooted in the values of Anglo-Americans and their families who are middle and upper-middle class. Some cultures hold the concept of interdependence far dearer than independence (Geisthardt, 1998).

This inquiry investigated the opportunities for development of self-determination skills during outdoor play for preschool children in an inclusive childcare center. The following research questions articulated the focus of this inquiry:

1. What opportunities are children provided to make choices while outdoors?
2. What opportunities are provided for children to practice overcoming challenges while outdoors?
3. What opportunities to develop friendships occur outdoors?

Literature review

It is important that children with disabilities can participate actively during outdoor play. As a result, the environment must be accessible and supportive for children with

disabilities. Children with physical or sensory challenges must be actively included in outdoor play to take responsibility, make choices and exercise control through the physical and social environments (Hudson, Thompson, & Mack, 2000; Nabors et al., 2001). This is sometimes not accomplished to the extent it needs to be. The outdoors may be viewed more as a “free play” opportunity by teachers and therefore teachers may not provide the level of intervention needed to facilitate effective opportunities for children to make choices outdoors. Interactions outdoors tend to be more fast paced than indoors. This may not give children with varying abilities the opportunity to become engaged in group play without intervention. Children’s experience in outdoor play if they have special needs may be less than their typical peers. This may have had a negative effect on their interaction or outdoor play skills further increasing problems with self-determination (Nabors et al., 2001).

Unique accommodations to meet the needs of each child are important to fully provide opportunities for choice. For example, children with sensory impairments can be accommodated through the use of sounds. Dragging a stick along a buried drainage pipe can create a sound that can help a child independently negotiate from one learning setting of the playground to another. Kern and Wolery (2002) reported on a playground that was adapted for a child with a visual impairment who was having difficulty participating with peers and accessing play settings outside because of his lack of familiarity with, and fear of, such a large and open environment. In addition to the aforementioned path for him to negotiate the playground, they incorporated music into each learning setting to increase his awareness of play opportunities, choices of activities and encourage peer interaction. They found that the child enjoyed increased independence in outdoor play, increased security being outside, demonstrated through discontinuation of crying and clinging to teachers, and increased

interaction with peers. They further reported that the typically developing children actively participated in the musical components of each learning setting and interacted more with the children with disabilities. This environmental and curricular adaptation facilitated interaction, choice making, access and opportunities for the development of peer relationships.

Sigafoos and Littlewood (1999) studied a communication system used on the playground by a young child with autism. They provided intervention to teach the child to make his wishes known by requesting more play in various play zones of the playground using the communication system, where he previously had little communication. Following 100 "instructional opportunities," the child used the communication system effectively outdoors. This study exemplifies strategies used by teachers to support the children they serve in accessing opportunities and making choices.

Barbour (1999) completed a qualitative case study of play and peer relationships for eight second grade children with varying physical abilities while outdoors. She found that the design of outdoor environments affected children's ability to interact and participate in physical activities, which also affected peer relationships. Playgrounds designed primarily for exercise or physical development tended to have a limiting effect on opportunities for children with physical challenges in terms of their choices, access and interactions. Playgrounds that were designed with more comprehensive play choices did not have the same limiting effects on children's interactions, peer relationships and physical activities. In play environments with a variety of play choices available, children moved on to other opportunities when they could not access some activities. Unfortunately, at times children with physical challenges experienced rejection from peers regardless of the design of the playground (Barbour, 1999).

Hestenes and Carroll (2000) investigated the interactions and beliefs of preschool children about their inclusive settings, including the playground. They interviewed 21 typically developing children and observed 29 children with and without disabilities. The children with disabilities had visual impairments or received services as a result of other developmental delays that were not categorized more specifically. They found that typically developing children tended to engage in more cooperative play, while their peers with disabilities engaged in more onlooker and solitary play. Children with and without disabilities showed similarity in activity choices during free play. Unfortunately, children with disabilities interacted less frequently than expected with typical peers. Implications of this study support the need for teachers to facilitate interactions to help children with disabilities develop friendships.

McCormick, Jolivette, and Ridgely (2003) discussed choice making as an intervention strategy for young children. The developmental level of the child must be considered when presenting choices. Problem solving, memory and communication skills are important to consider. Taking advantage of naturally occurring choices is a valuable tool. Through making choices “and experiencing the consequences of those choices, children begin to understand that actions cause clear and direct results, enabling them to develop a sense of responsibility for their own actions and the power of these actions on the behavior of others. Choice-making helps them become independent, confident and self-disciplined” (McCormick et al., 2003, p. 10).

Method

This ethnography examined self-determination opportunities for young children in the outdoor environment of an inclusive early care and education center. Qualitative research methods were used to gain insight into feelings and individual perspectives of teachers and other stakeholders and the behavior of children. Qualitative research is interpretive (Denzin & Lincoln, 1994). We studied what teachers and children did outdoors using journals, photographs and videotapes. We attempted to interpret these data through repeated reviews, writing, and discussion among participant teachers and colleagues. Three research questions served as a framework for our data collection and interpretation through this inquiry.

Research Question 1: What opportunities are children provided to make choices while outdoors?

The ability to make choices, express preferences, or control one's activity is central to the development of self-determination. Any opportunity that is presented to children that they could access could be considered an opportunity for choice. This could include the type and number of play settings from which to choose, the opportunity to play alone in a cozy nook or tall grasses, or the use of materials in ways that they were not intended, such as through pretend play.

Research Question 2: What opportunities are provided for children to practice overcoming challenge while outdoors?

Overcoming challenge is something that can develop self-determination abilities from multiple perspectives. First, developing physical or cognitive skills to overcome a barrier requires diligence. Once achieved, assuming the skill is maintained or enhanced, more complex tasks related to that skill can be undertaken. Second, confidence is built from

success experiences. Self-concept is developed from experiences. Positive experiences with challenge can facilitate development of a positive self-concept.

Research Question 3: What opportunities to develop friendships are provided outdoors?

The design of the environment can influence how children develop relationships with peers. This includes both verbal and non-verbal interactions between children and components of the design of the outdoor play environment that facilitate small group peer interaction.

Researcher as instrument

We must also understand qualitative research as interactive. We, as researchers, cannot approach inquiry without superimposing our values and history upon what we see and reflect. The researcher is an instrument of analysis in qualitative research (Denzin & Lincoln, 1998.) Thus, as primary author, it is important to note issues about my experience that most certainly impact on my data collection and analyses. I have studied early care and education for children with and without disabilities for many years. I have more than ten years experience providing direct services in child care and early intervention. I have managed center based child care services for children with and without disabilities. I have also provided direct vocational, residential, family support and recreational services for adults with disabilities. My experiences in providing and managing both inclusive early care and education services, as well as community based services for adults with disabilities, have given me an understanding of some of the issues with which people with disabilities are confronted surrounding development of self-determination skills. My experiences with adults with disabilities have shaped my attitudes regarding supporting young children in developing

self-determination skills most significantly. For example, I have accompanied groups of people with mental retardation out to dinner. On repeated occasions everyone would order the exact same dinner as the person who ordered first. It seemed odd the first time it happened. Subsequently, it became evident that some of these adults had not developed skills in making choices in their lives, even those as simple as what to order in a restaurant.

A man with severe cerebral palsy with whom I worked constantly choked and spit his food all over a particularly surly occupational therapy assistant while she fed him. He was attempting to control his care provider; we simply did not understand his self-advocacy methods. When the assistants compared notes and determined that he only choked while one of them fed him his choice became clear. Since formal communication systems were not available to him at that point, he was using the tools he had to express his wishes.

When accompanying a small group of adults vacationing together to a restaurant, one of our companions who used a wheel chair for mobility indicated she needed to use the restroom. The waiter thought nothing of telling her she needed to go next door. She accepted this graciously and we went next door. Upon attempting to use the restroom there, the door was too narrow and she had to be carried into the small bathroom before using the facilities. I was livid about the disrespect with which she was shown during these experiences, but she handled them in stride. She had been taught through her young adult life that there was no point in getting upset about these barriers since she could not change them in the immediate future. Her experiences with a lack of control in her life had been an effective teacher.

My memories are of people who were treated badly, not given choices or control, and they handled it with dignity. Later, some of these same individuals received training in self-advocacy including making choices independently, improving their self-concepts, and taking

responsibility for expressing their displeasure in an assertive manner. They welcomed these opportunities to develop important skills and have more control in their lives. I bring a sense of commitment to teaching young children how to take advantage of opportunities afforded them and become self-determining, so that they do not become adults who are uncomfortable with minor decisions such as what to order in a restaurant and have such poor self-concepts that they do not believe they are worthy of the same treatment as others. I am committed to inclusion as a result of my experiences.

I am an individual who grew up in a small town in Upstate New York. My childhood was the equivalent of “white bread” in terms of my experiences. I grew up in a split-level home that had a big backyard with a pool and a swing set. I was taught that everyone is equal, and inherent in my understanding of that statement was the misconception that everyone wants what I want and had similar experiences to mine. At one level I still grapple with the reality that not every child went to the public library, visited museums on family vacations, played outdoors in a backyard that was safe and green, and participated in scouting and the church youth group.

In my family we were taught that unique experiences were to be approached with enthusiasm. We enjoyed security in our daily routines. Challenge and risk were to be confronted with verve. Independence was valued in all areas of my life growing up. Conformity was encouraged, but creativity and curiosity were valued within acceptable limits as I grew up. These values are still evident in my analysis and interpretation of data.

While we were definitely not “the Cleavers”, the white, middle class cocoon within which I developed has an overwhelming impact on my interaction with the participants with which I work and my interpretation of the data. Recognition and acknowledgement of biases

can be what makes qualitative research compelling. It also makes discussion of findings among colleagues from diverse backgrounds exciting.

Design

This ethnography focused on the opportunities for self-determination in the outdoor play environment for preschool children within a center-based early care and education program. Ethnography is defined by Creswell (1998) as:

...a description and interpretation of a cultural or social group or system. [It typically] involves prolonged observation of the group, through which the researcher is immersed in the day-to-day lives of the people or through one-on-one interviews with members of the group. The researcher studies the meanings of behavior, language and interactions of the culture-sharing group. (p. 58)

The system or culture of providing an effective play environment outdoors which offers access, opportunities for choice making, peer interaction, and overcoming challenge for preschoolers in an inclusive child care setting is the focus of this research. Immersion of the researcher occurred in two ways; through the collaboration with teachers and the director and through the extensive involvement of the researcher in the activities of the classroom being studied.

This investigation focused on a single setting. Consistent with Stake's (1995) recommended procedures, colleagues met continuously throughout the process to review and discuss reflections and other data. Strategies such as listing questions, developing forms to lay out a plan for the inquiry and track progress, identification of helpers and data sources, development of data storage systems, formal yet flexible allocation of time, documented estimations of expenses and intended reporting structure were used. The progress of the study

was displayed throughout the research through the use of a poster with moveable notes referencing data sources, collected data, and unanswered questions.

Setting

The setting in which this research takes place is an outdoor environment designed for use by toddlers and preschoolers with and without disabilities (see Figure 1: Site Plan). It provides an overall sense of being in a natural environment through the variety and amount of foliage available to the children. Thirteen play settings are defined within the outdoor environment. These include two sand play areas, five grassy areas for large or small group games, the climber and its fall zone, the tricycle path, the stage, a small pergola and two play settings within the patio.

The classroom that provides the focus for this research has direct, barrier free access to their outdoor environment from their classroom and has windows facing south and east. The children and teachers can access the outdoor area onto a covered cement patio that provides convenient opportunities for transitional activities to the outdoors. The covered patio area is also valuable space for activities like sidewalk chalk drawing or snack, regardless of whether or not it is raining. It provides adequate space for an entire class to remain sheltered from the elements.

East of the patio is a grassy area. This grassy area flows the length of the windows on the south side of the classroom and can provide excellent opportunities for establishing a connection with the indoors through gardens, bird feeders, or other activities. Across from the grassy area the cement trike path continues circuitously from the patio around the entire play area. A variety of textures are stamped into the cement to provide additional sensory

experiences for children using wheeled toys or for rubbings with chalk or crayons. A large sand play area, some of which is covered by a lattice pergola, is available close to the exit from the building. A water play trough with various heights is in the sand play area adjacent to the entrance to the outdoors from the classrooms. The water play trough can be accessed for children with significant mobility issues by sitting in the sand next to the trough.

Proceeding around the path to the east there are multiple plantings of low bushes. These offer the children a sense of division among play settings while allowing adults the opportunity to see the children and insure their safety. A storage building is located on the path to provide easy access for retrieval of equipment. The path continues on past a flat bridge connecting a grassy area, which includes mounds and small, slight hills. Prior to the bridge, the children have an additional sand play area connected to an open grassy space by an arched bridge. The area is well shaded with mature trees. Again, ample foliage divides play settings.

At the southern most edge of the play yard there is a small stage that is covered with a lattice roof. This provides opportunities for dramatic play when materials such as dolls or other accessories are available. There is another small pergola adjacent to the stage to provide a nook for children to interact and gain a sense of privacy while outdoors. There are young trees adjacent to the pergola that will provide shade in years to come.

Another grassy area that is used for group games, water play in small pools or reading in the sun is in the center of the path. There is a small climber that is approximately 36 inches from the ground in the upper corner of the play space. It includes two steps, a domed window and a curved slide. It is frequently used for dramatic play. Surrounding the climber is a fall zone with 12 inches of wood mulch. Mulch that is not accessible by wheelchairs is used in

the fall zone. There is a large boulder for climbing and sitting near the climber with additional plantings to separate the infant play area visually. There is an additional narrow grassy space that accommodates easels or a sensory table in the sun on the western edge of the outdoor environment.

The entire area is surrounded by a chain link fence. Outside of the fence is a huge grassy area separating the childcare center from the closest university building. A grassy strip separates the play area from the sidewalk and parking lot.

Sampling

Purposeful sampling was used (Glesne, 1999, Denzin & Lincoln, 1998). Criteria used to select this center were based on the inclusive philosophy and natural design of their outdoor play environment. This center also has a history of community interest in its outdoor environment. The outdoor environment was designed when the center opened and then redesigned as a result of parental and staff concerns for safety. Some components of the environment that presented challenge and unique opportunities were eliminated to ensure safe use by the children served. In addition, the center's administration has a reputation for providing early care and education services that exceed standards set by licensing and accreditation bodies. The center is accredited by the National Association for the Education of Young Children. It is located in central Iowa and serves a university population. Tables 1 and 2 provide a description of the specific children included in the study, and the teachers and director.

The focus of the study was one classroom which served children with and without disabilities between the ages of 2 1/2 and 4 years. Enrollment ranged from 16 to 26 children

Table 1. Children in sample population

Child	Gender	Age*	Parent
1	M	2 yr 11 mo	Faculty
2	F	3 yr 10 mo	Student
3	F	3 yr 5 mo	Faculty
4	F	2 yr 5 mo	Faculty
5	M	3 yr 4 mo	Faculty
6	F	2 yr 9 mo	Student
7	M	3 yr 7 mo	Student
8	F	3 yr 11 mo	Faculty
9	F	4 years	Faculty
10	F	3 yr 10 mo	Faculty
11	M	4 years	Student
12	M	4 years	Faculty
13	F	4 yr 4 mo	Faculty
14	F	3 yr 3 mo	Faculty
15	F	3 yr 7 mo	Faculty
16	F	2 yr 8 mo	Faculty
17	M	4 yr 3 mo	Faculty

*Effective June 1, 2003

Table 2. Co-researchers

Position	Gender	Age*	Years of experience*	Education
Director	Female	28	8	B.S. Child and Family Services
Lead Teacher	Female	24	3	A.A. Child Development
Assistant	Female	20	6 mo	2 semesters of college

*Effective June 1, 2003

during the study. No more than 22 children attended on a given day that data were collected. A ratio of at least 1:7 teachers to children was maintained at all times. Of those children enrolled, 17 parents consented to their participation in the study, one of whom had a reported disability of autism and another had suspected global delays. This represented eleven girls and six boys. Thirteen were children of faculty members. The remaining four were children of students. Both children with concerns about development were about four years of age and children of students. Two of the three teachers assigned to the classroom consented to participate in the study. The lead teacher had an Associate's Degree with a focus in child development. She had worked in child care for approximately four years at the start of the research. The assistant teacher had completed approximately one year of college and had six months of work experience in child care at the beginning of the study. The teacher who did not consent to participate was not photographed, videotaped or quoted. Journal entries focused on the other teachers. The teachers attended approximately 10 hours of training during the study, independent of the training received while participating, on various topics as required by licensure and accreditation. Inclusion of children with special needs or outdoor play were not among the topics on which the teachers received training. The Director had a Bachelor's Degree in Child and Family Services, in addition to participation in on-going training, and approximately eight years of experience in providing and managing child care services. All staff members were white females who ranged in age from 20 to 28 years of age. All originated from Midwestern states. Respect for participants was demonstrated through clear communication during data collection methods and the research in general, as well as by acknowledging the burden associated with participation. Teachers and the director are aware of the lack of anonymity associated with this case study.

Data collection

While “flexibility in qualitative research is essential to its exploratory, discovery orientation it cannot be conducted haphazardly and be expected to produce credible findings” (Stainback & Stainback, 1984). Data collection strategies throughout the study are described in Table 3.

Table 3. Data collection strategies

Data Collected	Description	When
Transcripts/ Meeting Notes	All meetings between stakeholders were recorded, either through notes or tape recorder. Meetings centered around the following: <ul style="list-style-type: none"> • Planning the process • Review of literature • Reviewing and discussing data • Reviewing and discussing findings Taped meetings were transcribed, reviewed, and coded for aggregation with other data sources and identification of categories.	January – August 2003
Reflective Journal	Reflections were noted following every interaction with teachers, the director, or others associated with the setting. These included perceptions and descriptions regarding observations and experiences.	December 2002 – October 2003
Environmental Scale	The Preschool Outdoor Environmental Rating Scale was completed on two occasions. Discussions ensued to compare responses.	March 10, 2003 July 16, 2003
Visual Data	Photographs were taken throughout the inquiry. Videos were taken for intervals of 5-10 minutes on four occasions. All were reviewed and interpreted. Descriptions included the setting, strengths, needs and missed opportunities. Interpretations were reviewed by stakeholders and comments included.	Photos - between June 10 & August 31, 2003 Videos – June 16, 2003 June 31, 2003 July 12, 2003 August 12, 2003
Documents	Reference materials, such as newsletters to parents, and regulatory or accreditation reports, were collected throughout the process.	November 2002 – March 2004

This process of the inquiry is described in Figure 2. Research questions to guide the study were developed prior to data collection. Data were collected and categories emerged. Progressive focusing was used with the categories of data. The resulting information was used to answer the research questions.

The study began in November, 2002. I met with the Director of the center whom I needed to work to gain administrative approval for the inquiry at this location. I also was interested in her input as to which classroom would be the most appropriate with whom to work. She provided her recommendations and I met with the teacher briefly. I presented my proposed research questions and we scheduled a subsequent meeting to plan the process. We discussed participatory methods for this ethnographic study. As a result, we worked from a conceptual framework where “knowledge of teaching is constructed collaboratively by and among teachers, students, parents and academics for the purpose of social change” (Stremmel, 2002, p. 67).

Transcripts or notes of meetings

Meetings were recorded and transcribed or notes taken during the discussions throughout the inquiry. (See Appendix B for a sample of the transcripts.) Initially we met to discuss the current literature on providing a high quality natural environment outdoors and potential accommodations for children with special needs. The purpose of this was to build a foundation of knowledge regarding high quality outdoor environments for preschoolers, as well as support the development of rapport. The literature included publications on enhancing the sensory opportunities in a natural environment, benefits of nature for children, and other general information about a high quality outdoor learning environment which

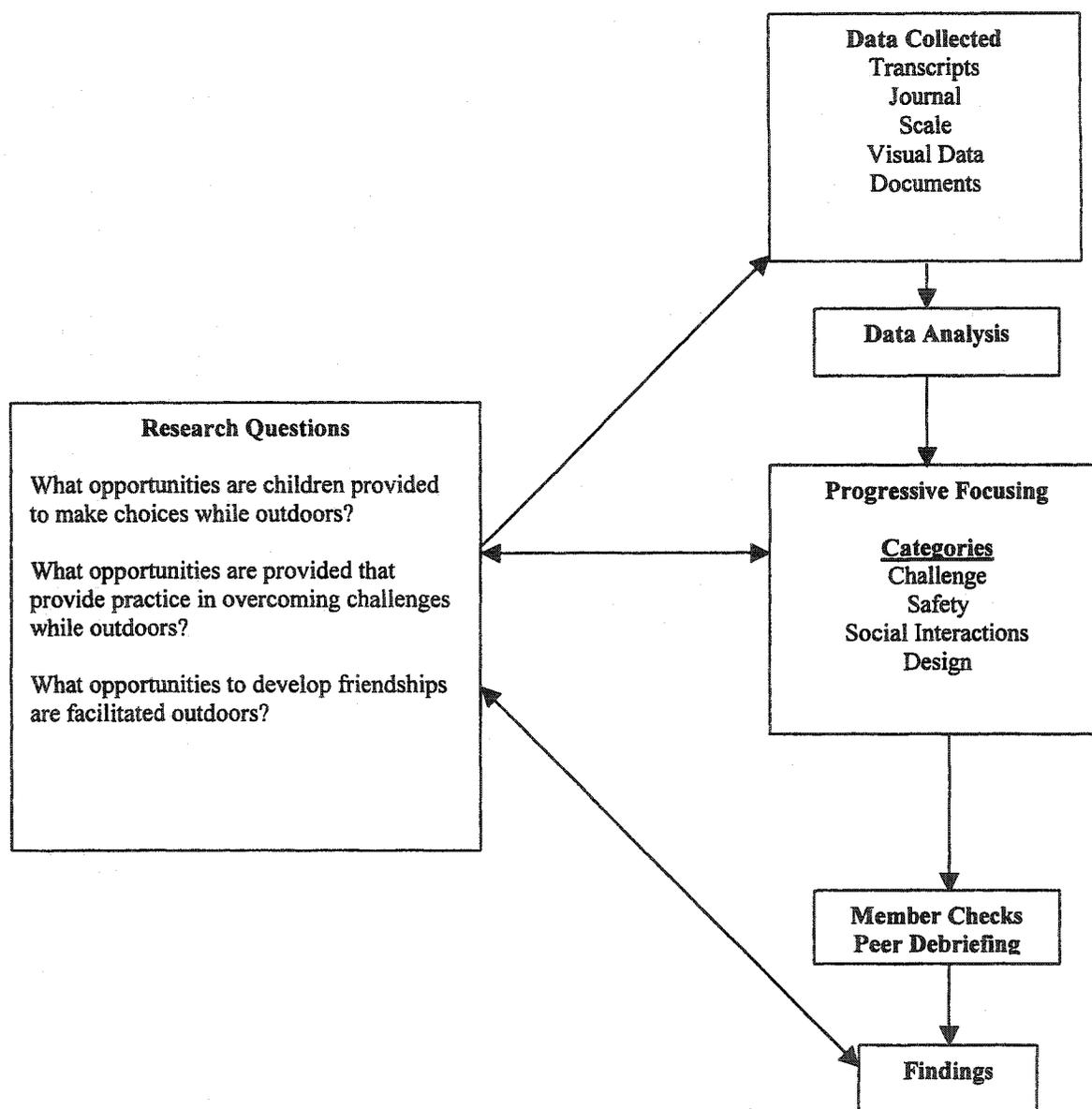


Figure 2. Categories of data

offers opportunities for access, choice, challenge, and interaction (Brett, Moore, & Provenzo, 1993; Dempsey & Frost, 1993; Faber Taylor, Kuo, & Sullivan, 2001; Fjortoft, 2001; Kern & Wolery, 2002; Rivkin, 1995; Theemes, 1999).

We continued to meet throughout the inquiry to review data or aggregated information, and collaborate on the process and findings. Our goals included maintaining open lines of communication, discussion of opportunities for children to make choices outdoors, opportunities provided that facilitate overcoming challenge while outdoors, and opportunities to interact with peers that are facilitated outdoors.

Reflective journaling

To address continuous standards of rigor, we used reflective journaling. Thick description in our journaling captured our sensory experiences and reflected emotional components of those experiences. Thick description in my journaling served to raise questions among the research collaborators and facilitate additional discussion. My journal chronicled all of my experiences at the child care center throughout the study. I observed on 27 days for a total of approximately 60 hours, including activities that both preceded and followed time outdoors, as well as the time spent outside. During my observations, which all occurred during the summer, the children spent approximately two hours outside on several occasions, weather permitting.

Environmental scale

The Preschool Outdoor Environments Assessment Scale (DeBord et al., in press) was used in March, 2003, and again in July. Our main purpose for using the scale was to structure our communication in the participatory process regarding our perspectives on the

opportunities in the environment and potential areas of need. This is a new instrument designed to assess the comprehensive quality of outdoor environments for preschool children. It is a checklist for self-study and is designed for preschool children (ages 3-5) in center-based programs. The instrument is designed to be completed as a self-assessment tool through a single observation that lasts about 90 minutes. Comments from teachers are also included, specifically regarding training and issues that could not be observed as the result of the season or other factors, e.g., questions about snow play cannot be answered in the summer. This scale is comprehensive and it helped us consider the physical and social environment in consistent terms during our discussions. It was a valuable component in the participatory methods used. It also focused our discussions around the relationship between the behavior of teachers and the center's guiding principles for the outdoor environment.

Visual data

Photographs were taken throughout the study. The photos were reviewed and interpreted. Written interpretations (photo journaling) of the scene were generated. While completing the photo journaling, I described the setting, both physically and socially, in which the photos were taken. Based on notes taken at the time of the photograph, I identified strengths and needs for each of the photos. Samples of the photographs and journal entries are available in Appendix B. These visual data provide a direct opportunity for the reader to examine the experiences of the children and their teachers while they are outdoors.

In addition, videotaping occurred for 5 periods ranging from 5 to 10 minutes. The main purpose of the video data was to capture interactions between the teacher and children

and the environment. A similar process to development of the photo journals occurred. The physical and social setting, strengths, and needs of the environment were described as well.

Documents collected

Reference materials, such as newsletters to parents, and regulatory or accreditation reports, were collected throughout the process. A variety of different types of data increases efficiency and provides corroborating or disconfirming evidence, and, therefore, aided methodological triangulation (Guba & Lincoln, 1981; Stake, 1995).

Trustworthiness

Extensive effort has been made to provide authentic and trustworthy data (Guba & Lincoln, 1982). Review of data by multiple researchers occurred to insure that interpretation was consistent. Prolonged engagement and persistent observation increased the rigor of this inquiry and were accomplished as a result of the amount of time spent at the site. Peer debriefing occurred as colleagues reviewed data, provided methodological guidance and suggestions, and offered input into issues of concern or questions throughout the study to increase the rigor of the research. Triangulation occurred as a result of the use of video, photographic and reflective journaling, as well as notes and transcripts of discussions. Reference materials, such as the site plan and philosophy statement and strategies, were also used for comparison purposes during data analysis. Using a variety of methods from multiple sources enhanced trustworthiness of the data and analyses.

Data analysis

The research team searched for meaning through identification of patterns, inconsistencies and relationships as we reviewed and re-reviewed the data. Data were analyzed by coding and sorting statements or phrases into categories consistent with the research questions. These categories were developed based on discussion and refinement of topics in the data.

Categories that emerged

The team reviewed transcripts, meeting notes, photos and videotapes. Four categories emerged during the data analysis process. The categories included challenge, risk and safety, interactions, and design. The interpretation of these categories of data answered the three research questions.

Research Question 1: What opportunities are children provided to make choices while outdoors?

As a result of the numerous play settings or zones in the planned environment, numerous choices for play and learning occurred outdoors at the center studied. For example, on June 23rd I made the following note in my journal:

“A. had set up the sensory table and a tent, trikes were available too. I brought out streamers and “I” books (they studied the letter “I” this week). Sand play and the climber were available, as always. Since this was the first time books were available outside, it was very popular. The kids sat on the blanket on the hill with A. and looked at the books. She read one story. Some of the kids lay down with their books or sat on a teachers’ lap. Pairs of kids looked at books together too. It was a great activity. The theme this week was camp, which is why the tent was set up outside. Since the theme was camp, parents had been asked to send post cards and care packages to their children as if they were at camp. A. delivered the mail while the kids were outside. I thought this was great! She read the post cards to each child and then they put them in their cubbies. The parents’ notes and stuff were great. It was so nice to see this level of parent involvement. Each child received individual attention,

phonemic awareness activities, all sorts of great learning, during the mail call. A. was so impressive. She tried so hard and was so attentive to make each child's experience positive. She wanted numerous settings for play and learning, too."

The Preschool Outdoor Environment Assessment Scale (DeBord et. al., in press) was completed on July 16, 2003 at the center being studied. Section 3 of the scale reviews items associated with choices of play and learning settings for children. The following items, among others in the section, were checked as present demonstrating opportunities for choice for the children outdoors:

"3.6 The area contains an adequate variety of constructed play and learning settings. At least five of the following should be present for the children to use: sand play, water play, anchored play equipment, play houses, raised decks, acoustic play area, sitting benches, arts/crafts area, woodwork benches, small stages, other.

3.7 The area contains an adequate variety of natural and manufactured play and learning settings. At least five of the following should be available: small, easily supervised cozy nooks, crawl through places (tunnels), safe stepping stones, balance beams or opportunities for balance, rolling/climbing mounds, grass mazes, flower and vegetable garden beds, trees, fruit trees, animal habitats (carpet "lift ups", bird feeder, ant farm, butterfly gardens, etc.), other."

These data indicate numerous opportunities for children to make choices during their time outside at the center in which the study occurred.

Research Question 2: What opportunities are provided for children to practice overcoming challenge while outdoors?

Data from the category of challenge served to answer this research question.

Tricycles with and without pedals were available for children with differing gross motor abilities. An entry from my journal provides information on opportunities available for children with different cognitive and motor skills.

“A. and a toddler teacher are seated on a hill with a blanket reading to the children. There is a basket of approximately 20 books available for the children including the books with the letter they are studying that week and books related to their theme for the week. They would interact in small groups, pairs or individually with their books and friends. A. read, even if it seemed as if no one was listening. Occasionally a child would ask a question about the story. They would come and sit on her lap while she was reading sometimes. Some of the younger children would look through the books as if they were manipulatives, i.e., stacking them or shuffling them. The children remained engaged in this activity for what I think is a long time, 15-20 minutes. Even the toddlers would stay for about 10-15 minutes. The books are typical library books. They do not have heavy pages.”

It is evident from this entry that children across a significant age range had opportunities to try their skills, some of which were new. Some may not think of turning the thin pages of library books independently as a challenge. For a child who has not had the opportunity previously or is practicing to gain this skill, it can be difficult.

In terms of physical challenge, besides the opportunities for tricycles with and without pedals, there were no other choices that might afford the children challenge at varying developmental levels. Other potential materials that may have provided this challenge could include large and small chalk for drawing on the sidewalk, a low and high balance beam or overhead ladders. In the Program section of the Assessment Scale (DeBord et al., in press), item 4.7 was not met. It states, “Opportunities are offered to meet various levels of children’s physical abilities. Provisions for lesser and greater challenges – at least two pair.”

There was clearly a focus on safety among the teachers and director of the center. It outweighed the interest in providing opportunities for challenge for children with differing abilities based on the data analyzed.

The category of risk and safety emerged to answer this question as well. Regulatory or accreditation bodies focus solely on safety when addressing the outdoors in standards. The message sent from these documents, and other assessments for child care quality, is that safety is a significant concern when playing outdoors. Some of the center's rules outdoors seemed a bit extreme to me if we are developing skills in children as opposed to simply protecting them from risk. The children are not allowed to play with sticks, for example, and no alternatives were provided. When I questioned the director about this situation she indicated that there had been an injury to a child's eye previously as a result of a child playing with a stick. She further indicated that the playground had been reworked as the result of injuries to children. Huge rocks on which the children climbed had been removed, again as the result of injuries. The playground did not have swings, a perennially favorite of young children. The reason given by the director again, was the potential hazard presented by the use of swings. Safety was clearly an extreme concern.

The following comment is an excerpt from my reflection on visual data regarding children's interactions with foliage and insects. Again, safety was the main concern as reflected in my note, as opposed to balancing children's need for exploration and challenge. The following excerpt was prompted by teachers having scolded the children to come out from behind the bushes and put down the sticks.

"This restricts the children's opportunity for seclusion or privacy. The children are also prompted to put down sticks or stop touching the plants. This tactile experience is one of the great benefits of having a natural setting. I believe teachers need training in this area, instead of simply on safety so they can use the strengths of this environment more effectively. The insects that were attracted by the bushes provided a great flying show for the children, yet the teachers prompted the kids to get away from the bugs. The children wear insect repellent."

Research Question 3: What opportunities to develop friendships are provided outdoors?

Data were categorized as interactions among children, children and the environment, or teachers and children, throughout the inquiry. Examples of data which may be sorted into the category of interactions included both verbal and non-verbal exchanges, including those that were positive and negative. Interactions among children included opportunities as a peer and as a mentor, since the play space is shared among a multiage group for a substantial period of time daily. Opportunities for interactions with peers in small groups or dyads were numerous. One entry in my photo journal describes “friendship painting” (see Figure 3):

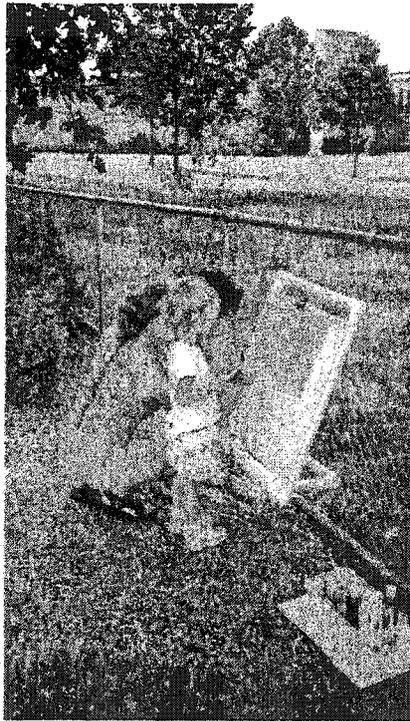


Figure 3. Friendship painting

“B. is facilitating communication and social skill development during this interaction, in addition to literacy skills as she spells X’s name. B. is at their eye level. She has provided them with choices of colors and not limited their painting by providing an outline or even a verbal guide. They can experience the process uninhibited, except by their need to be respectful of their peer who paints beside them. Several children covered the entire paper with different colors, resulting in “classic brown”. They expressed happiness and enthusiasm while engaged in the activity. There was laughter and dancing. (I had a great time watching! I think this is an incredibly idyllic opportunity for children and a wonderful use of the outdoor environment!).”

This entry identifies numerous areas where skills are being developed. Initially, I was critical because the center has multiple easels and the children were sharing. Later, the teacher explained to me that one of the goals of the activity was for the children to be in a dyad to complete the painting. The process, as well as the product, would be shared by the friends who created it. As the picture indicates, this painting activity could be accessed by a child with various needs with minimal adaptations as well.

Another entry in the photo journal describes a setting where children of various ages and abilities are on a blanket in the grass reading (see Figure 4).



Figure 4. Grass reading

“The children were thoroughly engaged in this activity. They were outside doing something that is typically reserved for inside. Behavioral concerns were minimal. The kids were receiving great positive attention. This was a multiage group. The older kids “read” to the younger ones at times. Siblings took advantage of the opportunity to interact positively together. There was scaffolding galore!”

This scene provides opportunities for children to receive support from adults if needed and interaction from one or more peers simultaneously. It also provides the opportunity for peers with greater abilities to help less capable peers, which can be a wonderful experience for a child developing a sense of self-confidence and self-concept.

Design was another category of data that answered question 3. The design of the outdoor environment in this study allows for complete access by toddlers and preschoolers with and without disabilities which, at the very least, does not hinder the development of friendships. The covered cement patio provides convenient opportunities for transitional activities and has two areas where small groups of children can participate in activities such as sidewalk chalk drawing or puzzles together. The cement trike path continues circuitously around the entire play area and provides access for children with mobility challenges to the entire play yard. This too, at the least, does not hinder the development of friendships. The large sand play area with water play trough had dyads or triads of children playing together at each observation. The small sand play area is accessible from the path and a grassy area. It, too, was in use during each day when data were collected (see Figure 5).

There is a small pergola, which is also wheelchair accessible, to provide a nook for children to interact and gain a sense of privacy while outdoors. Another grassy area that is used for group games is available in the center of the trike path. The climber would not be a play setting that would facilitate friendship development for children with mobility concerns

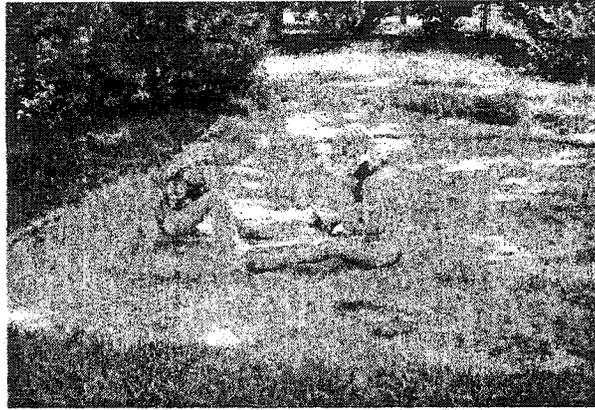


Figure 5. Sand play

since it is not accessible. However, it does provide a sense of privacy for groups of two or three and was used for dramatic play during each observation. There is an additional narrow grassy space that is used for art play or a sensory table. This too was an area which frequently had activities for small groups of children to participate in together.

Findings

Data analyses provided answers regarding the following research questions about opportunities for young children to develop self-determination skills in an inclusive child care center:

1. What opportunities are children provided to make choices while outdoors?
2. What opportunities provided practice in overcoming challenges while outdoors?
3. What opportunities to develop friendships are provided outdoors?

The following figure illustrates the categories that emerged during data collection and analyses and how they were organized to answer each research question see Figure 6.

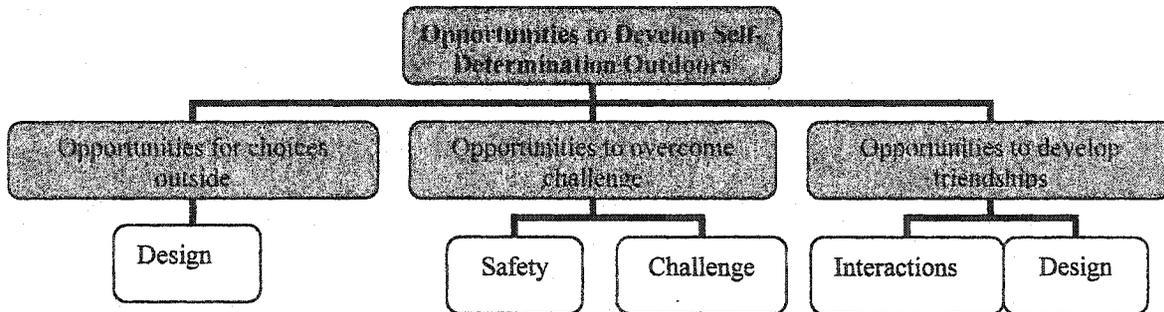


Figure 6. Data results showing numerous opportunities for children to make choices during their time outside

Research Question 1: What opportunities are children provided to make choices while outdoors?

As previously stated, the ability to make choices, express preferences, or control one's activity is central to the development of self-determination. Any opportunity that is presented to children that they could access could be considered an opportunity for choice. Activities were available outside to help them develop skills, in addition to developing the ability to make choices. A minimum of five choices of activities were offered during the time observed. Children could develop their gross motor skills by running, riding trikes, moving with music or streamers, and using the stairs on the stationary equipment. The sand areas were always busy places and two were available in which the children could play. Additional sensory activities were provided regularly as well. Vestibular senses could be stimulated on the twisting slide or by rolling down a grassy hill. Frequently two or three children chose to participate in dramatic play on the climber, or on the stage available for creative drama. Children created artwork outside. Opportunities for painting, using chalk on the sidewalk, weaving in the fence, or drawing provided outlets for creative expression for the children.

Books were regularly available as a play alternative outdoors as well. In addition, about weekly children could go for walks in the larger university campus, play organized games in a large group on a huge lawn area, or go on community outings. During the summer months water play was available weekly. We found that children were actively engaged in play and learning of all kinds while outdoors in child care and had many opportunities to make choices as a result.

Research Question 2: What opportunities provided practice in overcoming challenges while outdoors?

As previously stated, overcoming challenge is something that can develop self-determination abilities from multiple perspectives. Developing physical or cognitive skills to overcome a barrier requires diligence. Once achieved, more complex tasks related to that skill can be undertaken. Positive experiences with challenge can facilitate development of confidence and a positive self-concept.

While there were some opportunities, such as tricycles for children with differing abilities, there were not numerous opportunities for the preschool children studied to overcome physical challenges while outdoors. There was a tremendous focus on the part of the teachers and administration on safety, to the exclusion of opportunities for challenge for the young children studied. Equipment to help children develop balance or upper body strength was not available to challenge them.

Research Question 3: What opportunities to develop friendships are facilitated outdoors?

The design of the environment, as stated, can influence how children develop relationships with peers, including both verbal and non-verbal interactions and small group peer interaction. There were a multitude of opportunities for children to develop friendships,

facilitated both by the design of the environment as well as by the actions of the teachers. There were numerous play settings with opportunities for two or three children to engage in dramatic or sensory play. These settings were active places throughout the inquiry. The entire play yard is accessible to children with mobility concerns, with the exception of the climber and its fall zone. There are various textures in the trike path with could assist a child with a visual impairment in negotiating the majority of the outdoor space. There are an adequate number of teachers to maintain a 1:7 ration of adults to children. The teachers sometimes facilitate small group activities and consistently ask open ended questions to encourage communication among peers. Some of the teachers remain engaged with the children during their play throughout their time outdoors. They do this in a manner that is unobtrusive and supportive of play and learning.

Discussion

This inquiry can play a significant role in guiding stakeholders in childcare to providing high quality outdoor environments that facilitate the development of self-determination skills in young children. It describes a high quality, inclusive, natural outdoor environment for preschool children and identifies future questions about facilitating self-determination skills for young children in childcare outdoors.

The outdoor play and learning environment studied has many outstanding qualities to be emulated in other childcare settings and sought by family members looking for a childcare “home” for their preschool aged loved one. This center had an accessible outdoor play environment offering many choices of activities including slightly varied levels of terrain for rolling, riding, dancing, puppet shows, dramatic play, sliding and other types of movement. It

provides opportunities for development of gross motor skills and vestibular senses, among others. It offers varied surfaces, e.g. cement, grass, mulch and sand. Sensory experiences abound. Children of all abilities can smell the flowers and feel the textures of the plants, grass and sand. There are colorful ribbons, in addition to the plantings, birds feeding and artwork, to stimulate the visual sense. Wind chimes and tall grasses provide stimulation for the sense of hearing, in addition to the birds singing and planes flying overhead. There is a sense of being in a natural place in this outdoor environment which provides many benefits (Faber-Taylor et al., 2001, Kaplan, 1995).

One comment from a teacher regarding the review and discussion of literature on the outdoor environment was, "So many areas of the outdoors were explored and looked at. I always knew how important it was for children to explore the outdoor environment, and how much I loved it as a child, but never realized how much could be incorporated into it." We need to provide teachers with the preparation to actively use the outdoor play and learning environment for all young children.

Implications

By all accounts the center in which this inquiry occurred is high quality, yet there are still need areas. Teacher training in using choice making as an intervention could be beneficial. In addition, training for teachers and parents in self-determination to create a dialogue around the issue could be valuable. This center serves children from numerous cultures. Open communication can enhance everyone's experience, especially the children's. This center, like many others, is extremely concerned about the safety of the children served. This is admirable, except that it may be limiting their opportunities for play. As examples,

swings are not available, and playing with sticks and hiding in the bushes are against the rules outdoors.

What do these issues say about how children are sheltered from experience and responsibility, and as a result opportunity? The sign in Figure 7 above this accessible water fountain provides a poignant commentary on the opportunities for access, choice, and control children sometimes may or may not have over their environments. If we want them to achieve self-determination we must support them in developing these skills from early childhood. We must also provide them with real opportunities to practice access, choice and control.

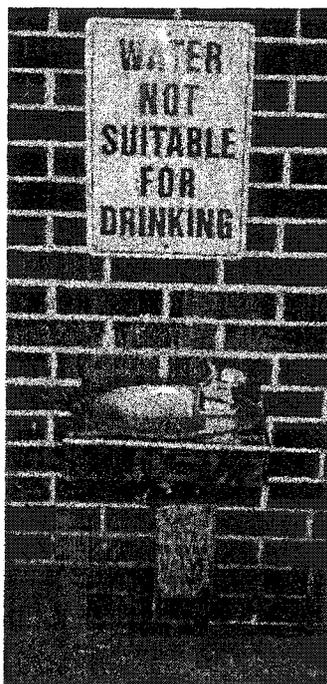


Figure 7. Opportunity for access by young children?

References

- Abery, B., & Zajac, R. (1996). Self-determination as a goal of early childhood and elementary education. In D. Sands & M. Wehmeyer (Eds.), *Self-determination across the lifespan: Independence and choice for people with disabilities* (pp. 169-196). Baltimore, MD: Paul Brookes Publishing.
- Barbour, A. C. (1999). The impact of playground design on the play behaviors of children with differing levels of physical competence. *Early Childhood Research Quarterly*, 14(1), 75-98.
- Bilton, H. (1999). *Outdoor play in the early years: Management and innovation*. London, U.K.: David Fulton Publishers.
- Brett, A., Moore, R. C., & Provenzo, E. F., Jr. (1993). *The complete playground book*. Syracuse, NY: Syracuse University Press.
- Brotherson, M. J., Cook, C. C., Cunconan-Lahr, R., & Wehmeyer, M. L. (1995). Policy supporting self-determination in the environments of children with disabilities. *Education and Training in Mental Retardation and Developmental Disabilities*, 3-14.
- Bullough, R. V., & Gitlin, A. D. (2001). *Becoming a student of teaching: linking knowledge, production and practice*. New York: Routledge Falmer.
- Carson, R. (1956). *The sense of wonder*. Harper & Row, Publishers: New York.
- Chawla, L. (1994). *In the first country of places: Nature, poetry, and childhood memory*. Albany: SUNY Press.
- Creswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among five traditions*. Thousand Oaks, CA: Sage Publications Inc.
- DeBord, K., Moore, R. C., Hestenes, L. L., Cosco, N., & McGinnis, J. (2001). *Preschool Outdoor Environment Assessment Scale*. Raleigh, NC: Unpublished.
- Dempsey, J. D., & Frost, J. L. (1993). Play environments in early childhood education. In B. Spodek (Eds.), *Handbook of research on the education of young children* (pp. 306-321). New York: MacMillan.
- Denzin, N. K., & Lincoln, Y. S. (1998). *Strategies of qualitative inquiry*. Thousand Oaks, CA: Sage Publications Inc.
- Erwin, E. J., & Brown, F. (2003). From theory to practice: A contextual framework for understanding self-determination in early childhood environments. *Infants and Young Children*, 16(1), 77-87.

- Esbensen, S. (1990). Play environments for young children: Design perspectives. In S. C. Wortham & J. L. Frost (Eds.), *Playgrounds for young children: National survey and perspectives* (pp. 49-68). Reston, VA: American Alliance for Health, Physical Education, Recreation and Dance.
- Faber Taylor, A., Kuo, F. E. & Sullivan, W. C. (2001). Coping with ADD: The surprising connection to green play settings. *Environment and Behavior*, 33, (1), 54-77.
- Fjortoft, I. (2001). The natural environment as a playground for children: The impact of outdoor play activities in pre-primary school children. *Early Childhood Education Journal*, 29(2), 111-117.
- Geisthardt, C. L., Cook, C. C., & Brotherson, M. J. (1998). The impact of the home environment on the development of self-determination in children with disabilities.
- Glesne, C. (1999). *Becoming qualitative researchers: An introduction* (2nd ed.). New York: Addison Wellesley Longman.
- Guba, E. G., & Lincoln, Y. S., Epistemological and methodological bases of naturalistic inquiry. *Educational Communication and Technology: A Journal of Theory, Research and Development*, 30(4), 233-252.
- Hart, C. H. (1993) (Ed.). *Children on Playgrounds: Research perspectives and applications*. Albany: State University of New York Press.
- Haugen, K. (2003). Beyond ramps: Outdoor environments to welcome all children. *Child Care Information Exchange*, 3, 55-57.
- Hestenes, L. L., & Carroll, D. E. (2000). The play interactions of young children with and without disabilities: Individual and environmental influences. *Early Childhood Research Quarterly*, 15(2), 229-246.
- Hudson, S., Thompson, D., & Mack, M. (2000). Planning playgrounds for children of all abilities. *School Planning and Management*, 39(2), 35-40.
- Kaplan, R., & Kaplan, S. (1989). *The experience of nature: A psychological perspective*. Cambridge, U.K.: Cambridge University Press.
- Kaplan, S. (1995). The restorative benefits of nature: Toward an integrative framework. *Journal of Environmental Psychology*, 15, 169-182.
- *Kern, P. & Wolery, M. (2002). The sound path: Adding music to a child care playground. *Young Exceptional Children*, 5(3), 12-20.
- Korpela, K. M. (1992). Adolescents' favorite places and environmental self-regulation. *Journal of Environmental Psychology*, 12, 249-258.

- Lincoln, Y. S. (1995). Emerging criteria for quality in qualitative and interpretative research. *Qualitative Inquiry, 1*(3), 275-289.
- McCormick, K. M., Jolivet, K., & Ridgley, R. (2003). Choice making as an intervention strategy for young children. *Young Exceptional Children, 6*(2), 3-10.
- Nabors, L., Willoughby, J., Leff, S., & McMenamin, S. (2001). Promoting inclusion for young children with special needs on playgrounds. *Journal of Developmental and Physical Disabilities, 13*(2), 179-190.
- National Research Council. (2003). *Working families and growing kids*. Washington, DC: Author.
- Rivkin, M. S. (1995). *The great outdoors: Restoring children's right to play outside*. Washington, DC: National Association for the Education of Young Children.
- Sanoff, H. (1995). *Creating environments for young children*. Raleigh: North Carolina State University, School of Design.
- Sigafoos, J., & Littlewood, R. (1999). Communication intervention on the playground: A case study on teaching requesting to a young child with autism. *International Journal of Disability, Development and Education, 46*(3), 421-429.
- Stainback, S., & Stainback, W. (1984). Methodological considerations in qualitative research. *The Association for Persons with Severe Handicaps, 9*(4), 296-303.
- Stake, J., 1995. *The art of case study research*. Thousand Oaks, CA: Sage.
- Stremmel, A. J., Fu, V. R., & Hill, L.T. 2002. The transformation of self in early childhood teacher education: Connections to the Reggio Emilia approach. In V. R. Fu, A. J. Stremmel, & L. T. Hill (Eds.), *Teaching and learning: Collaborative exploration of the Reggio Emilia approach* (pp. 135-145). Upper Saddle River, NJ: Merrill/Prentice Hall.
- Stremmel, A. J. (2002, September). Nurturing professional and personal growth through inquiry. *Young Children, 62*-70.
- Theemes, T. (1999). *Let's go outside: Designing the early childhood playground*. Ypsilanti, MI: High Scope Press.
- Turnbull, A. P., Periera, L., & Blue-Banning, M. J. (1999). Parents' facilitation of friendships between their children with a disability and friends without a disability. *Journal of The Association for Persons with Severe Handicaps, 24*(2), 85-99.
- Turnbull, A., & Turnbull, R. (2001). Self-determination for individuals with significant cognitive disabilities and their families. *The Journal of the Association for Persons with Severe Handicaps, 23*, 5-16.

- Vygotsky, L. S. (1978). *Mind in society: The development of higher mental processes*. Cambridge, MA: Harvard University Press.
- Wehmeyer, M. L. (1996a). Self-determination for youth with significant cognitive disabilities. In L. E. Powers, G. H. S. Singer, & J. Sowers (Eds.), *On the road to autonomy: Promoting self-competence in children and youth with disabilities* 115-133. Baltimore, MD: Paul Brookes Publishing.
- Wehmeyer, M. L. (1996b). Self-determination as an educational outcome: Why is it important for children, youth, and adults with disabilities? In D. Sands & M. Wehmeyer (Eds.), *Self-determination across the lifespan: Independence and choice for people with disabilities* (pp. 17-26). Baltimore, MD: Paul Brookes Publishing.

CHAPTER 5. GENERAL CONCLUSIONS

The purpose of this research was to study the outdoor play environment for preschool children in a child care center. The research presented in Chapters 3 and 4 indicates that a high quality outdoor environment with natural elements can be provided in an inclusive center for early care and education serving preschool children. Opportunities for self-determination can be embedded in routines outdoors to promote skills in decision making, responsibility, interactions which foster friendships, and have a positive impact on self-concept.

My Biases

My biases have been stated throughout this document. I am committed to espousing the benefits of children spending time in natural settings, in all types of weather, daily. The fact that they attend childcare should have little impact on the availability of some greenspace in which children can run and play. I grew up white and middle class with a big, relatively manicured, yard behind our split level. My experiences definitely skewed my data collection and analyses in favor of natural settings as a result.

I am also committed to engagement on the part of teachers *with* children, and inclusion of children with varying abilities. I believe, as a result of my experiences working in child care, that unique experiences must be provided by child care staff. Enthusiasm and enjoyment of the activities provided must be evident, in my opinion, for staff members to be effective teachers. Curiosity and wonder should be fostered by high quality staff. It is with this lens that I interpreted data during this inquiry.

I have had other experiences working in child care that have also colored the lens with which I collected and interpreted data during this inquiry. The mother who was greeted after work by ecstatic staff with a Polaroid of her only child's first step taught me a tremendous lesson. Her grief at having missed this milestone in her daughter's life was palpable. It taught me that, while our enthusiasm for serving as caregivers in the parents' absence was necessary, we were in somewhat thankless positions. We were expected to work diligently to provide high quality care, but our commitment to the child was not to overstep certain boundaries.

The parent who was irate at the length of her child's nap and insisted that we awaken her after one hour so she would go to bed by seven each evening taught me about the lack of flexibility in some children's lives. The children left at the center for more than three hours after closing because their single parent could not be located taught me how incredibly challenging the lives of parents and children can be. I remember how tired I was from working 50-60 hours weekly managing a child care center, as well as working part time because my pay was so low and I needed to pay for health insurance. These experiences also lend a note of bitterness to my interpretation of the symphony of services provided in child care and the data I collected.

My Perspectives

My training also affects the way that I collect data and interpret the results. Prior to and during college, I was educated in child development while working as a paraprofessional in child care. I was taught that there is a specific way to position oneself to talk with a child,

and redirect a behavior, among other things. Data collected and interpretation was certainly impacted by the way I was taught to carry out these tasks.

I have studied several effective design strategies to optimize a child's positive experiences in an environment. My data collection and interpretation, as well as collaboration with the teacher-participants, were definitely affected by my beliefs. Children should have access to natural and manufactured loose parts, multiple settings for play with various levels of challenging activities which should be available in an environment, and that children love to swing. Children need privacy as well as time to interact in large and small groups. Children love to play in sand, water, and even dirt.

While only my voice is present in the majority of this study, I am also committed to the tenets of qualitative research. Statistical analyses that control for variables are not consistent with the perspective from which I collected or interpreted data. I further believe that there is a culture in each child care center or classroom that affects the services that the children receive and the quality of work experience the staff members enjoy. It is with this lens that I collected and interpreted the data with my collaborators.

Sample

As stated, purposeful sampling was used. The reason I was committed to working at the site studied is that it had an exceptional indoor facility. Professional artwork abounded. It had an open plan and children moved effectively within the building. There was ample natural light, adequate storage, and numerous relatively private toilets and sinks to scale for young children. There were sinks in all classrooms, as well as direct access to the outdoor environments. Children had access to drinking fountains and there was a commercial kitchen.

The child care center was secure, colorful, and it exhibited numerous displays from the children and their families. Their outdoor environment was constructed using a natural perspective. On the other hand, historically, they had significant incidents involving injuries outdoors with the original design. I generally believe that significant injuries occur more as the result of supervision concerns as opposed to design issues, assuming professional design standards have been used. When I broached this topic with a collaborator, she insisted that supervision was not the problem. Natural elements in the design were perceived to be the culprit. This intrigued me greatly and, as a result, I was interested in further investigation.

The fact that this center was accredited by NAEYC and served a University population also interested me. Staff seemed to be better trained than many centers I had visited previously. I was interested in finding out what occurred outdoors at one of the best child care centers available. This center fit that bill.

Similarities and Differences Between Inquiries

Both studies, as stated, focused on what the children and teachers did while they were outdoors in a natural setting. They looked at opportunities for choice and the variety afforded by those choices. The interactions that occurred among the children, teachers, and the environment were studied in both inquiries as well as concerns about safety. These concerns were evident in interactions between teachers and children in both studies. Teachers' planning and training were topics studied in both inquiries. Planning by teachers contributed to choices for children as a result of the play settings offered outdoors. Training for teachers in outdoor activities was also an issue studied in both inquiries. The types of interactions that

occurred between teachers and children outdoors frequently had a focus on safety, as opposed to facilitating challenge for children, privacy, and even play.

Barriers and supports for the provision of a high quality outdoor environment were identified in one of the studies whereas the other focused on what was provided without considering cause. In addition, one of the investigations studied the link between the indoor and outdoor environments, while the other looked at the outdoors only.

Conclusions

Based on the data collected and interpretations, in light of my biases, I remain committed to children in child care being offered time to play outdoors daily with their teachers. Generally, teachers do not currently value the outdoor time as fun time for play and learning. They perceive outdoor time as an opportunity where they can squeeze in a break from their hectic and exhausting schedule. The idea that parents support this perspective and believe their children should go outside to let off steam was not refuted by the data. Teachers do not receive training or encouragement in effective planning and play with children outdoors. It is assumed that they know how to play outdoors with children. As with employees in any field, some child care providers bring a natural enthusiasm and skill to the opportunity whereas others are stale and disgruntled about outdoor play. Outdoor play was something I valued tremendously as a child. The current generation of children in childcare need to experience unfettered outdoor play to develop the sheer joy and intense memories that previous generations have enjoyed.

I remain committed to helping children of all abilities develop self-determination skills. If choices and access are provided, fewer accommodations will be necessary. Needs

can be met within the existing services. Children can be served together. Friendships can be developed by young children and inclusion can become a reality. The outdoor environment effectively provides these opportunities.

It became evident during data collection that challenges or allowing children to take risks were to be avoided during outdoor play and learning. Rules, which were sometimes what I considered extreme and limiting, were generally in place as the result of previous injuries to children. Thus, the environment was considered the culprit. Consistent with previous research, children need privacy and adventure. They typically create this outdoors dramatic play in enclosed or hidden nooks. These experiences can be valuable and enjoyable for children. We should build these experiences into our outdoor environments, not eliminate them. Interactive supervision, as opposed to surveillance, can maintain children's safety without being intrusive or limiting. Within this environment any bushes that are taller have sparse bases. When lush bushes are less than three feet tall, I contend the children are not in danger. If the environment does not have significant hazards, such as broken glass or poisonous plants, can appropriate preschool staff to child ratios can be maintained, the adults will be able to provide a consistent count of the children who are engaged in the play that is occurring, and everyone will generally remain safe. I submit that injury is likely more a result of the lack of engagement on the part of the adults as well as poor training provided to the children in responsible and respectful use of materials. We cannot just require children to stop using materials that pose some risk. How will they develop experiences with these objects to build their self-esteem and skills? Do teenagers' parents want them to drive their cars? Of course not! Parents realize this is a risk that must be taken, a challenge that must be met, for the young person to move to the next level of responsible adulthood and citizenship.

Children must be trusted with developmentally appropriate materials or equipment. They must be positively guided and supervised to learn and practice appropriate skills and behaviors as they develop and grow.

Teachers in child care need our commitment and advocacy. To do their jobs well, teachers must be dedicated, motivated, and enthusiastic. If they have a bad day it is not a quality count that goes down, it is a day in the life of a child that will never be regained. We must advocate for greater fiscal support to increased pay, reduced ratios and provide incentives for higher education and training of child care providers. While I am not a parent, I appreciate the benefit of my tax dollars being spent on quality care for children. It is only through these means that the tremendous workload teachers in child care experience can be reduced and the outdoors can become a wonderland of fun for the children they serve – our children.

Recommendations

This research illustrates the need to reduce barriers to a quality outdoor environment in early care and education and support children's development of self-determination, including opportunities for overcoming challenge and risk. Many of the issues that have been identified as needs could be addressed by a change in the perspective with which our culture views early care and education services. We must strive to emphasize the value of professionalism of our teachers, as opposed to maintaining a disenfranchised class in low paying jobs. As providers of early care and education we need to take it upon ourselves to advocate strongly and loudly. We must inform people about the skills necessary to adequately prepare our next generation of citizens to be productive and healthy.

Future research must work to explore the concerns of young children directly with them. We need to understand how they feel about spending time outside. We need to explore the culture of child care more. This inquiry studied one site that excels in terms of its service provision by most accounts. It is not meant to be generalized. Additional studies with other providers of early care and education may provide more insight into the challenges faced and triumphs achieved by providers of early care and education. Parent perspectives are also an area where we have little data. We need to work to hear from parents directly about their experiences with early care and education, instead of assigning attributes based on being tired and disgruntled as a low paid, overworked caregiver, as I have. We also need to continue to understand current inclusion practices and how to welcome children with disabilities and their families more effectively. The classroom studied, while the center is inclusive, is certainly not representative of the population of children with special needs who may attend.

I am hopeful that the information presented in this dissertation illustrates the positive attributes, as well as challenges facing, an early care and education center and their outdoor environment. I hope that this can serve as a resource to center directors in preparing and supporting their staff in providing high quality services outside. Staff can glean information that can help them care for children more effectively and have more fun. I would like parents to gain a better understanding of expectations they could have for their child's care and ways to more effectively meet the needs of the people who care for their children daily. Most importantly, I hope children will have more opportunities for fun, play, and the learning that can occur simultaneously while outside as a result of information provided in this research.

APPENDIX A. CONSENT FORMS**A-1. Participant Consent****Iowa State University
INFORMED CONSENT DOCUMENT**

Title of Study: Outdoor Learning Environments for Preschool Children in Child Care
Investigators: Kelly Ross Kantz, M.S., Graduate Student, HDFS, Iowa State University
Mary Jane Brotherson, Ph.D., Professor, Iowa State University
Christine C. Cook, Ph.D., Associate Professor, Iowa State University

This is a research study. Please take your time in deciding if you would like to participate. Please feel free to ask questions at any time.

INTRODUCTION

The purpose of this study is to understand the process of providing high quality outdoor learning environments in child care centers.

DESCRIPTION OF PROCEDURES

If you agree to participate in this study, we will schedule a visit. We will observe children on the playground for approximately one hour and then meet with their teacher for approximately 15 minutes. The teacher is free to skip any question that he or she feels uncomfortable answering. During this observation an assessment of the outdoor learning environment will be completed. Results of the scale can be shared following the observation. We will then observe teachers and children on another occasion and videotape their time outside. Teachers will view the videotape at another time and be interviewed on their impressions. This process will continue to evaluate emergent themes. Children will be interviewed twice to determine their feelings regarding the outdoor learning environment. Parents will be interviewed to include their perspective as well.

RISKS

There are no foreseeable risks from participating in this study.

BENEFITS

If you decide to participate in this study it is hoped that the information gained will benefit your center by providing information about low cost and practical ways to improve your outdoor learning environment, teacher interactions and curriculum, thereby enhancing the early care and education provided to the children you serve.

COSTS AND COMPENSATION

You will not have any costs from participating in this study other than those costs associated with the staff time during the interview process and preparation of requested documents. You will not be compensated for participating in this study.

PARTICIPANT RIGHTS

Your participation in this study is completely voluntary and you may refuse to participate or leave the study at any time. If you decide to not participate in the study or leave the study early, it will not result in any penalty or loss of benefits to which you are otherwise entitled.

CONFIDENTIALITY

Records identifying participants will be kept confidential to the extent permitted by applicable laws and regulations and will not be made publicly available. However, federal government regulatory agencies and the Institutional Review Board (a committee that reviews and approves human subject research studies) may inspect and/or copy your records for quality assurance and data analysis. These records may contain private information.

To ensure confidentiality to the extent permitted by law, the following measures will be taken centers, teachers and children will be assigned unique codes that will be used on forms instead of their name. Identifiers will be kept separate from the data. Study records will be kept confidential in a locked filing cabinet and/or password protected computer files. The data will be destroyed by August 15, 2004. If the results are published, your identity will remain confidential.

QUESTIONS OR PROBLEMS

You are encouraged to ask questions at any time during this study. For further information about the study contact Kelly Ross Kantz at (319) 240-0602, Christine C. Cook at (515) 294-8695 or Mary Jane Brotherson at (515) 294-3677. If you have any questions about the rights of research subjects or research-related injury, please contact the Human Subjects Research Office, 2810 Beardshear Hall, (515) 294-4566; meldrem@iastate.edu or the Research Compliance Officer, Office of Research Compliance, 2810 Beardshear Hall, (515) 294-3115; dament@iastate.edu

PARTICIPANT SIGNATURE

Your signature indicates that you voluntarily agree to participate in this study, that the study has been explained to you, that you have been given the time to read the document and that your questions have been satisfactorily answered. You will receive a copy of the signed and dated written informed consent prior to your participation in the study.

Participant's Name (printed) _____

(Participant's Signature)

(Date)

INVESTIGATOR STATEMENT

I certify that the participant has been given adequate time to read and learn about the study and all of their questions have been answered. It is my opinion that the participant understands the purpose, risks, benefits and the procedures that will be followed in this study and has voluntarily agreed to participate.

(Signature of Person Obtaining Informed Consent)

(Date)

NOTE:

Adult Interviewee Consent and Director's Consent forms were also obtained. Because they were essentially similar to the Participant's Consent form, with minor changes in the wording, they have not been reproduced in the Appendices.

A-2. Consent for Observation and Videotaping

**Iowa State University
PARENTAL AGREEMENT FOR CHILD'S PARTICIPATION IN
OBSERVATION AND VIDEOTAPING**

Title of Study: Outdoor Learning Environments for Preschool Children in Child Care
Investigators: Kelly Ross Kantz, M.S., Graduate Student, HDFS, Iowa State University
Mary Jane Brotherson, Ph. D., Professor, Iowa State University
Christine C. Cook, Ph. D., Associate Professor, Iowa State University

This is a research study. Please take your time in deciding if you would like your child to participate. Please feel free to ask questions at any time.

INTRODUCTION

The purpose of this study is to understand the process of providing high quality outdoor learning environments in child care centers. Your child is being invited to participate in this study because they attend an NAEYC accredited child care center that serves preschool age children.

DESCRIPTION OF PROCEDURES

If you agree for your child to participate in this study, we will observe the children at the center on the playground. We will videotape during these observations. We will be assessing the quality of the outdoor learning environment.

RISKS

There are no foreseeable risks from participating in this study.

BENEFITS

If you decide to participate in this study it is hoped that the information gained will benefit the child care center your child attends by providing information about ways to improve the outdoor learning environment, teacher interactions, and curriculum.

COSTS AND COMPENSATION

You will not have any costs from participating in this study. You will not be compensated for participating in this study.

PARTICIPANT RIGHTS

Your child's participation in this study is completely voluntary and you may refuse to participate or leave the study at any time. If you decide not to have your child participate in the study or leave the study early, it will not result in any penalty or loss of benefits to which you are otherwise entitled.

CONFIDENTIALITY

Records identifying participants will be kept confidential to the extent permitted by applicable laws and regulations and will not be made publicly available. However, federal government regulatory agencies and the Institutional Review Board (a committee that reviews and approves human subject research studies) may inspect and/or copy your records for quality assurance and data analysis. These records may contain private information.

To ensure confidentiality to the extent permitted by law, the following measures will be taken: centers and teachers will be assigned unique codes that will be used on forms and videotapes instead of their name. Identifiers will be kept separate from the data. Study records will be kept confidential in a locked filing cabinet and/or password protected computer files. The data will be destroyed by August 15, 2004. If the results are published, your identity will remain confidential.

QUESTIONS OR PROBLEMS

You are encouraged to ask questions at any time during this study. For further information about the study contact Kelly Ross Kantz at (319) 240-0602, Christine C. Cook at (515) 294-8695 or Mary Jane Brotherson at (515) 294-3677. If you have any questions about the rights of research subjects or research-related injury, please contact the Human Subjects Research Office, 2810 Beardshear Hall, (515) 294-4566; meldrem@iastate.edu or the Research Compliance Officer, Office of Research Compliance, 2810 Beardshear Hall, (515) 294-3115; dament@iastate.edu

PARTICIPANT'S PARENT'S SIGNATURE

Your signature indicates that you voluntarily agree to your child's participation in this study, including videotaping, that the study has been explained to you, that you have been given the time to read the document and that your questions have been satisfactorily answered. You will receive a copy of the signed and dated written informed consent prior to your participation in the study.

Participant's Name (printed) _____

(Participant's Parent's Signature)

(Date)

INVESTIGATOR STATEMENT

I certify that the participant has been given adequate time to read and learn about the study and all of their questions have been answered. It is my opinion that the participant understands the purpose, risks, benefits and the procedures that will be followed in this study and has voluntarily agreed to participate.

(Signature of Person Obtaining Informed Consent)

(Date)

APPENDIX B. SAMPLES OF DATA GATHERED

B-1. Adult survey questions and sample response

1. *What goals or expectations do you have for your child's or children's outdoor experience while at the child care center?*

Well, of course I expect it to be safe, but I don't worry about that because it does appear to be very safe. After that, I want XXXX to have lots of outdoor play options, so the sand box, trikes, sitting stones, trees, gazebo and bridge all contribute to that. I like the idea that kids #1 get a LOT of outdoor time, and #2 that it is mostly unstructured. I really like the idea of the teachers being out there to make sure the kids are OK and not beating on each other, but after that, just let 'em go! These days everything seems to be SO structured, that I think it's really important to let the kids play on their own and use their own imaginations and preferences to do what they're interested in. I also think it's important to go on hikes (forces them to walk and not just hang in the playground), and do some gardening too.

2. *What are the things that you like best about the experience your child (or children) has had playing and learning outdoors in child care at XXXXXX?*

Well, pretty much everything I said above is done at XXXXXX, so I've got no real complaints... although it would be nice if they had some swings and bars to hang from, but maybe that's a safety issue? I love that they took a walking field trip to Reiman Gardens - that was cool!

3. *What need areas have you seen in the outdoor play and learning environment, if any? Were they addressed, and if so how?*

I DO wish they might do a little more with the gardening. This past summer the (class) planted some veggies, but they planted WAY late, and then never kept the garden tended, so it was just weeds and you'd never have known the kids planted seeds. I know XXXXXX was really excited about planting seeds and showed us the garden that they planted, but nothing came of it... literally. I also think the preschool/toddler play area could use some more big trees (shade).

4. Do you expect staff to have training in using the outdoors? If so, how much and in what?

No, I don't think they have to have any kind of training. Not that that would be a BAD idea, just not necessary. Seems to me that anyone who enjoys the outdoors and can identify some bugs and/or birds and point out a plant or two, OR is willing to look up the information, is well prepared.

5. How long do you think your child spends outside, weather permitting? How long would you like them to spend outside in good weather? When does weather preclude children from going outside in your opinion?

Well, I have to admit, I've never asked this question specifically, so I can't really say. My understanding is that they sometimes go out during the morning, and sometimes go out during the afternoon, and sometimes both, depending on the weather and teaching plans. I think going out morning and afternoon is great whenever possible. I REALLY like that the leaping lizards had "swim" day each Thursday morning - that was great, XXXXX really enjoyed it. Although it might have been better to do it in the afternoon when it was really hot and water would REALLY be appreciated! Seems as if there were days when it was too "cold" in the morning to "swim," but by the afternoon it was well into the 80s. When they DO go out, how long should they BE out? Well, in the morning, I can see going out for 30-40 minutes or so to let them blow off a little steam and burn some of their morning energy. Then in the afternoon, I think it's great that they seem to go out about 4:00 and just STAY out. By that time minds are numb anyway, so running and yelling (or whatever) is a good idea. As far as weather precluding going outdoors, it seems that if it is raining they don't go out and if it is too cold or too hot. Now, too cold or too hot is only an opinion, and I think there were hot days when they could easily have gone outside, but weren't permitted too because of center policy. Same with the cold. I realize they are erring on the side of caution, and that's probably good, but, especially if there is some protection from sun (trees) and cold winds (trees, bushes, buildings), then kids CAN survive in these extremes. When it's all said and done, I like the idea of the kids being outside as much as possible, either free play or hiking or gardening, because too many of them are going to grow up hunched in front of a computer monitor or TV for long periods of time. If you can instill in them a love of the outdoors early, all the better!!!

B-2. Sample of Transcript (original transcript used ½ column with space to right for recording)

Kelly: Do you have any questions before we get started about the scale in particular?

R1: I was a little ...because it said if you had observed that day ... of course me being near the end of what happened. So those are questions that were ... that I couldn't really answer.

Kelly: I think also because you're out there all the time with the kids, you have a better sense other than just an individual observation.

R1: Sure.

Kelly: Do you want to go through each item one by one? Does that sound okay?

R1: Okay, that's fine.

Kelly: The first one here's just related to the way the physical environment is set up. Did you get any that you indicated weren't present?

R1: This one I did not.

Kelly: I had one – nine, ground surface drainage in the outdoor area.

R1: That's one that I wasn't sure because usually it ...

I guess I didn't totally look at that because when it does really rain it seems like...and we have that ditch area. I'm not sure if that's meant for the children to play in or for the water to flow through.

Kelly: I think I'm not sure either. It's like it's not enough ...water all the time, but there's enough there to hold it when it rains. That's the reason that we're... the reason that I checked it. Because it was wet.

R1: and when it is wet, the children can't play down there.

Kelly: Yeah, the teachers were telling them to stay out of there. And another way to look at, if it is there, so that they can play in the mud, they just need to be prepared for it.

R1: Right

Kelly: But they were just told to stay out.

I think the physical environment is really nice. Interaction; How did you score the first one?

R2: ...

R1: We always thought the first thing they do when they go out is go ...

Kelly: I didn't see any evidence of at least one child initiated activity at this part. Are there other things that they could play?

R2: With the rocks. And that's what they do right now, pick up the rocks and see which one's are bigger. There really is not much for the playground except for the mulch and the mulch they leave alone.

Kelly: Do you ever attempt to provide stuff that is natural?

R2: I usually don't bring things out, unless we do a project where I have them collect things.

Kelly: Like a scavenger hunt type thing?

R2: Right

Kelly: How about the next thing, Teachers lack spontaneous or unplanned child initiated.

R2: Do you put present?

Kelly: See I do too. The item though that I was really ...that you did the time I observed, the last time that I observed,

R2: I do have a journal of what happened, I only got to one of them.

R1: They were actually good day to take a journal cause the teachers ... to go out with the children.

Kelly: Great

Kelly: The next one, 2.4, How did you have that one?

R1: I have it present.

R2: I had it more for child...The only place that I could think of is the ...behind the bushes.

R1: I have it natural for them to hide in the bushes and behind the trees.

Kelly: That should be added I think as an item, as an example. 'Cause you're right, they were doing that when I observed.

R1: That was the only thing I could think of. As far as tubes and benches, and playhouses, we don't really have those.

Kelly: How about the atmosphere? Do you think it gets the children engaged?

R2: I think so.

Kelly: Yeah, I do too. Every time I've been here to observe I thought

R2: They do very well. ...that don't get things out. They keep themselves busy

Kelly: The teacher caregiver child interaction. How about the first one?

R2: Of course children are constantly approaching us because I think they are trying to see how far is the quickest rock, having them further explain what's going on with the rock.

Kelly: Yeah, wow! What a beautiful rock.

R2: Exactly

Kelly: So you have ...in small group.

R2: I don't see that as much as the children coming up to their teachers. I have a certain amount of teachers that feel to play with the children, other than that, most of them stand back and watch. So I don't see that as much, but it does happen.

Kelly: I think that may be at least from the other sights I've seen and some of the reading I've done too. That may be the greatest area of need is to figure out if you really can teach people how to do that, 'cause I think you can. I'm just not sure how to do it.

R1: It's all in the motivation I think. Getting them out there and involved.

Kelly: Now, do you actually supervise the other teachers?

R2: We just have a peer relationship. As far as the condition of the playground with the toddlers too and I see a lot of the time the toddler teachers not paying attention to their own children, and that kind of conflicts with who I am. I need to help them out too. So it kind of takes away from me and the interaction with my own children.

Kelly: What about the other teachers in your classroom?

R2: As far as them interacting with the children?

Kelly: Do you supervise them?

R2: Yes

Kelly: You are their supervisor?

R2: Yes, I am ... Some places they go to me first and then go to her.

Kelly: Well, that's good then. You do have the opportunity to provide them with ... And it's not a fun thing to do

R2: I just did that yesterday with one of the teachers for not acting appropriately in the classroom. I pulled them aside in a nice way and explained.

Kelly: How about the next one, 2.8?

R2: This is one of those things that I'm kind of partial on that. You might not see everyday.

Kelly: Well, that's fine and every question is including too. What I wrote is that it depends on the time and the weather and related to the theme.

R2: A lot of it has to do with what they're interested in and most of the time what we're learning and sometimes if we ask them what they want to do it has nothing to do with what we're learning but we'll drag it out and make it the best experience that we can.

Kelly: That's great! Open ended questions, how about that one?

R2: I think that's one of the things that our teachers are very strong on. We do as much as possible with saying "Look at this, that's nice. Tell me about it." Talking with the children and ...everything outside. We want them to learn as much about it as possible.

Kelly: The times I've been here, communication does seem to really be a strong point. Nobody could find anything that they were afraid of when I observed.

R1: As I sat and looked at it, I...

R2: They do and especially one of the teachers in the room really dislikes spiders, and it shows around the children and they start to. I'm such a nature freak myself that I will pick up some things and bring them to them so they see that and they're kind of standoffish. So they're getting both extremes me picking up everything and one not really getting into much.

Kelly: Yeah, that's a tough one. It really is. I have a thing about snakes. Which seems to be a really common fear. And spiders are everywhere. There's virtually no escape. They're going to demonstrate.

R2: When she catches herself, she will calmly collect herself stand back and point to one of us to help her. But if she's caught off guard, she screams. It's like she can't control herself.

B-3a. Photo Journal Sample



- Setting

Physical Environment:

A. and a toddler teacher are seated on a hill with a blanket reading to the children. It is an early June day and about 80 degrees and sunny. There is a basket of approximately 20 books available for the children including the books with the letter they are studying that week and books related to their theme for the week. There is little wind. There are about 30 children outside ranging in age from about 18 months to four

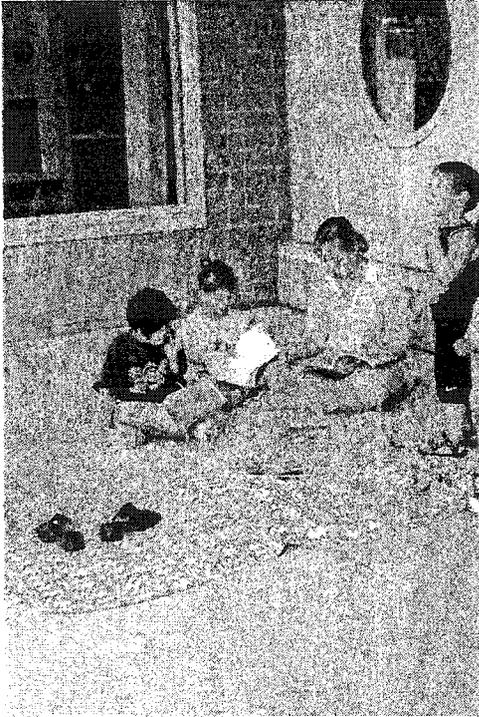
years. There were six teachers, including one who changed diapers. (That teacher would come in and out of the changing area, so their attention was not outside until they finished changing all toddlers who were in need of clean diapers.)

Social environment: The children were receiving a tremendous amount of attention, both physically and in terms of positive language. They would interact in small groups, pairs or individually with their books and friends. Amanda read, even if it seemed as if no one was listening. Occasionally a child would ask a question about the story. They would come and sit on her lap while she was reading sometimes. Some of the younger children would look through the books as if they were manipulatives, i.e. stacking them or shuffling them. The children remained engaged in this activity for what I think is a long time, 15-20 minutes. Even the toddlers would stay for about 10-15 minutes. The books are typical library books. They do not have heavy pages. Only one book was ripped between the first week of June and the last week of July. There were few behavior problems. When they occurred they generally centered around the toddlers wanting books that the older children were looking at or trying to sit on A's lap when there wasn't room.

Strengths

The children were thoroughly engaged in this activity. They were outside doing something that is typically reserved for inside. Behavioral concerns were minimal. The kids were receiving great positive attention. This was a multiage group. The older kids "read" to the younger ones at times. Siblings took advantage of the opportunity to interact positively together. There was scaffolding galore! I think the teachers liked it. It was an activity that I

introduced that they did consistently throughout the observations I completed. They also made comments to me about it being so successful. The setting is beautiful!



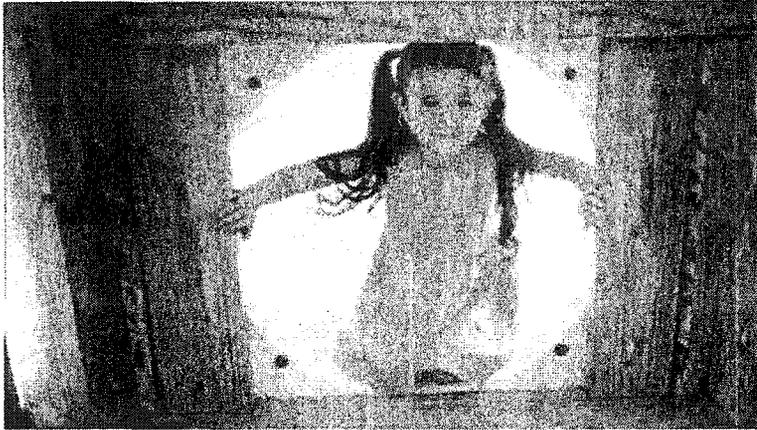
This was a great alternative to reading on the grass/hill for really sunny days, rainy days, or water play days.

The activity made a nice transition or alternative after water play. Children were generally tired after playing in the water for about 30 minutes or more. The reading gave them a chance to wind down before going in for lunch and then nap.

Needs

It was very time consuming finding theme/letter related books at the library. This could have been because I did it in Cedar Falls. That library indicated they choose books for child care and schools and deliver them – a possibility in Ames? The other alternative is to just take books outside that are available, not necessary related to the theme.

B-3b. Photo Journal Sample



Setting

Physical Environment:

Katie is walking around with me and I'm taking her picture. Here she is inside the top of the twisting, slide, about four feet off of the ground. She slid down the slide on her stomach after the picture was taken. The structure has three play settings: slide,

platform and bubble viewer. It was a sunny day. This was taken around 10:30 AM on an early summer day. The temperature was about 80 degrees.

Social Environment: Katie was receiving individual attention from me. She walked around holding my hand and we talked about a variety of topics. At this point I had visited her classroom about 4 times prior to this day. This conversation lasted about 15 minutes. I believe Katie has excellent verbal skills and enjoys the attention. She told other children to go do other things when they attempted to participate in our conversations.

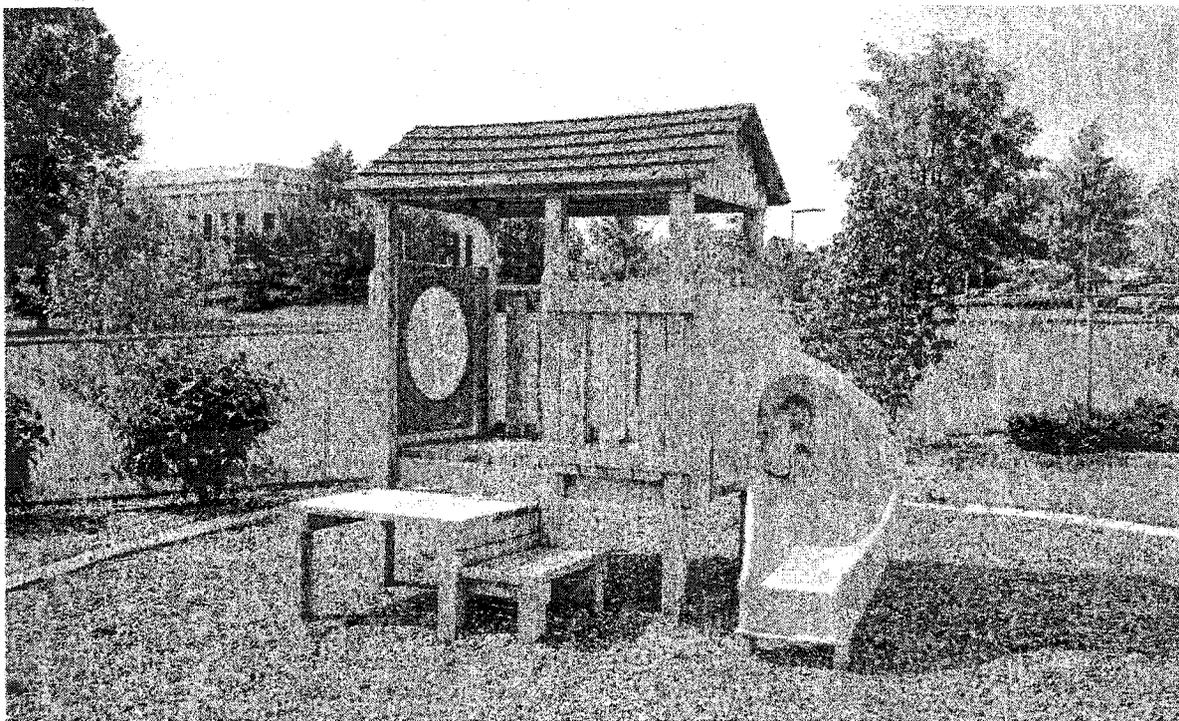
Strengths

The structure is generally safe. It is less than 4 feet from the ground. It has an acceptable fall zone that is covered in mulch that is approximately 12 inches deep. The mulch is maintained and replenished regularly. The slide is mostly open so the children can be seen while sliding or even hiding, as you see in the next picture. There are a variety of plants near the structure, outside the fall zone.

Needs

I believe the structure has little play value and is boring for the children. It is used daily, but the children do not typically spend a lot of time on it, unless they are involved in dramatic play on the platform. It is used more as a shaded area to sit. Safety needs may include a railing or barrier around the steps, although the children enjoy jumping off of the steps and a barrier would eliminate this opportunity. It could use some maintenance on the wood if I'm being excessive, but it is generally in great shape. The structure is in the upper corner of the play area and has no natural elements for shade near it. It's just kind of stuck there. As a result, that area of the environment is basically wasted.

Here you can see the structure being used by one child as a private nook.



J: Rules tend to be geared toward younger children and are more restrictive. The older kids are role models for the younger ones. The structure has also been used as a house, space ship, fire truck and an enclosed tree house. The tree will offer great shade when it is grown. I would like to replace the low growing bushes on our right with grasses. They are low maintenance and make great noises.

B-4. Teacher's Reflective Journal Log Form

Log of Outdoor Time

Leaping Lizards

Date: _____ Time: _____ Temp.: _____ Weather: _____

Toys outside: _____

Themes: _____

Related toys/activities: _____

Number of children: _____ Number of Adults: _____

Describe adult/child interactions: _____

Describe transitions: _____

Any problems/concerns/injuries? (Describe) _____

Other comments/information: _____

Name: _____

APPENDIX C. ASSESSMENT SCALE AND GUIDELINES

Preschool (age 3-5) Outdoor Environment Assessment Scale

An assessment scale to assess the quality of outdoor environments for children age 3-5 years in child care centers using observations and caregiver/teacher interviews.

Draft 11- 4-02*

Registered:
North Carolina State University
University of North Carolina-Greensboro
DeBord, Moore, Hestenes, Cosco & McGinnis ®

* Draft 11-4-04. *Preschool (age 3-5) Outdoor Environment Assessment Scale*
Reproduced for research purposes only. NOT FOR DISTRIBUTION. Permission must be obtained to reprint. Contact the authors for the most recent version of this Assessment Scale.

*Preschool (age 3-5) Outdoor Environment Assessment Scale***Introduction**

The quality of outdoor settings in child care centers, where young children are spending many of their waking hours, is a critical factor in assuring a healthy, developmentally appropriate environment. The outdoor environment provides a special stage for action and stimulates all children's play, learning, and physical activity. Outdoor spaces must be designed in such a way that children can test their abilities in an environment that offers many types and levels of challenge and stimulation. The outdoors also helps children grow up closely connected to nature. Children learn by exploration, by being challenged, and by taking risks and need a safe environment where they are protected from serious injury. To achieve healthy growth and development, children must be able to test their limits day-to-day, seeking new challenges as they master old ones. The physical surroundings must engage and entice children's sense of inquiry, stimulate their imaginations, invite exploration, communicate a sense of belonging and cultural identity, and support their sense of developing competencies over time.

Recognition of the importance of the outdoor environment in child development is growing. Aside from safety considerations, there are no comprehensive scales that provide teachers and caregivers direction and guidance to plan for, or make changes in their outdoor play and learning spaces.

The objective of this instrument is to provide guidance to child care professionals and site administrators to assist in evaluating their outdoor space. We hope that the scale will serve as a catalyst to colleagues seeking to improve the quality of children's environments outdoors and the relationship between indoors and outdoors.

The items included in the scale are designed to provide direction for teachers striving to offer high quality programs and interactions with children in outdoor learning environments. This scale is intended to move the quality of outdoor children's environments to higher quality with its use in teaching, research, and practice. By using the instrument as a self-study, the items can serve as a menu of strategies to work towards higher quality in the outdoors. Some items are basic; others, recognizably, are more difficult to achieve. The items are intended as an "ideal" statement of quality, not as an average. As an example, many states are implementing quality rating systems for child care programs, however, very few child care programs meet all the criteria necessary to become superior-rated centers. The same may be true of this scale.

The Development Team

The multi-disciplinary team that has developed this scale includes academic, research, and cooperative extension faculty from the areas of child development and landscape architecture as well as a health and safety consultant, a parent, and a Ph.D. graduate design student. The team consists of:

Nilda G. Cosco, Education Specialist
College of Design & The Natural Learning Initiative
North Carolina State University

Karen DeBord, Associate Professor
State Extension Specialist, Child Development
North Carolina State University

Linda L. Hestenes, Associate Professor
Department of Human Development & Family Studies
University of North Carolina-Greensboro

Janet McGinnis, Consultant, Health Directions
Chapel Hill, NC

Robin C. Moore, Professor of Landscape Architecture
College of Design & The Natural Learning Initiative
North Carolina State University

Acknowledgements:

Many staff, students and child care program representatives assisted with the scale during its development. We thank each program for inviting us in to test and retest this scale. Many thanks to those who reviewed and critiqued the scale during it's development. Special thanks to these people:

Stephanie Moore, Project Assistant, Department of Family and Consumer Sciences
North Carolina State University

Kristin Thorleifsdottir, Ph.D. Graduate Student, College of Design
North Carolina State University

Kelly Kantz, Ph.D. Graduate Student, Department of Human Development and Family Studies, University of North Carolina at Greensboro

The Preschool (age 3-5) Outdoor Environment Assessment was developed to serve as:

A checklist for child care teacher/caregivers and administrators interested in learning more about creating higher quality environments for children's outdoor play and learning

- A checklist for directors and program administrators planning quality outdoor environments for young children or who are working to improve their existing space
- A reference tool for landscape architects and designers working with child care programs to design quality outdoor play and learning spaces
- A guideline for new construction of child care facilities
- A reference tool for funding agencies supporting healthy, high quality outdoor play and learning environments for children
- A source of guidance for policy initiatives in early childhood development
- An instrument for observing the interaction of children in various outdoor settings to document behavioral changes for study purposes
- As an instrument for use with all children (with and without special needs) age 3-5 in center-based programs.

Structure

The assessment scale consists of two components: an observation protocol and a structured interview. The observation component includes five basic overarching areas called **DOMAINS**.

The *domains* include:

Physical Environment
Interactions
Play and Learning Settings
Program
Teacher/Caregiver Role

Within each *domain* is a set of sub-areas called **CATEGORIES**. There are two to four *categories* per *domain*. Within each category is a set of **ITEMS** to be observed. There are 4-7 items per category.

Administration of the Observation Component

An observer should use the scale to observe a program in the outdoor space for approximately one hour or for a completed outdoor activity period. In general, the morning works best since often classes rotate or combine in the afternoon hours. This may differ by climates, temperatures, or programs. The observation checklist should be used to determine if that item is present in the *environment* or not. In the column labeled "*Item Present*" check if that item is observed as being present in the care setting. The second column "*Item not present*" would be checked if that item is not represented in the setting. A check should appear in either the "*present*" or "*not present*" column for each item. The abbreviated check sheet, is used in the same way.

Notes in Target Classroom Observed

Observe one class at a time. If there are more than three preschool classes, it is suggested to observe at least two different groups and average scores. While observing a group, identify the lead teacher to observe, particularly for Domain 2. This will also be the teacher interviewed for Domain 5.

Notes on Health, Safety, and Accessibility

It is not the purpose of this scale to either duplicate or incorporate existing health and safety measures, guidelines, or standards; nor is it the intent to overlook or neglect health and safety issues. This assessment scale is meant to be a companion to local rules and regulations and national guidelines. The scale was developed to be used with licensed child care programs that must *meet their state licensing regulations regarding health and safety*.

It should go without saying, the outdoor environment must be safe. Many health and safety issues may surface in the outdoor setting including equipment safety, environmental safety and sanitation issues. Fortunately, a wealth of resources is available to address specific concerns. This Scale strives for excellence in health and safety by including and referencing existing nationally recognized standards for anchored equipment such as ASTM and CPSC. See footnote. As noted on the cover sheet, the assessor should request to see documentation from a playground safety inspector stating that the equipment meets CPSC and ASTM guidelines. This request should be made during the interview but notice should be given in advance of the assessment, giving the director time to have an audit conducted or locate the documentation. A high score on this scale does not guarantee that the outdoor environment meets all local state licensing requirements and all national guidelines, nor does it guarantee high teacher performance. The scale is designed to address quality issues not already addressed by current measures.

Accessibility is another area in where guidelines exist. This scale does not specifically address special needs outside of providing a variety of rich stimulation for children with a wide range of needs. It is the intent of the authors to encourage the field of early childhood education to make all outdoors spaces accessible to all children and adults alike, regardless of the children enrolled in the program. For further information about accessibility see: <http://www.access-board.gov/adaag/html/adaag.htm>

Notes in Fine and Gross Motor Skills

There are many items within the scale that address fine and gross motor skills. In an effort to eliminate redundancy of items, fine motor and gross motor skills are not specific items, but rather embedded within program areas.

Administration of the Interview Component

Following the observation session, the observer should schedule about 10 minutes to meet with the program administrator and/or teacher of the group observed. The purpose of this meeting is to collect information to assess items particularly related to the teacher-caregiver role and verify any other items observed that need clarification such as programming activities not present during the observation.

Glossary

A brief reference glossary is provided for those using this scale. This is an attempt to clarify any unfamiliar terms to facilitate the use of the scale. Words found in the glossary are in *italics* in the text of the scale. The glossary is located at the end of the scale.

Scoring and Reporting Sheets

The Summary Sheet is used to enter DOMAIN totals and the Profile Graph is used to chart results graphically.

1. Items checked as present should be totaled for the column. The number of checks in the "items present" column should be totaled. The observer should then reference the key indicating how the DOMAIN should be scored. The key represents an 80% prevalence of the items within a category.

A score of 1, 2, or 3 should be given depending on whether the category has been fully met, partially met, or not met.

A score of 3 should be given if the items are 81-100% present

A score of 2 should be given if items with the category are 50-80% present.

A score of 1 should be given if less than 50% of the items were present in the environment.

Rarely an item is scored NA (for not applicable)

2. A total for the DOMAIN should be entered in the summary sheet and charted on the profile graph. The profile provides a graphic representation indicating areas that may require additional thought, planning, attention or knowledge to improve them.

Process

Prior to an onsite visit, contact the child care program to ask permission to observe the children at play in the outdoor space. Ask the normal times for outdoor play and together determine the best date to visit.

Arrive on time and have a brief conversation with the program director. Make sure teachers know you will be observing the outdoor activities. Complete the observation coversheet with the contact person. This is a suggested script:

Good morning. My name is _____. As you will recall, we talked on the phone about me visiting to observe the children at play in the outdoor space. I expect to be here about an hour and a half. I will be looking at the physical environment as well as the interactions between the teachers and children. When I am through, I will need to visit with you or another teacher to ask a few questions. That will take only about 10-15 minutes. Is that ok? Who should I meet with? I need to complete this cover sheet. (ask and complete questions) then ask:

Can you tell me a bit about what is planned this morning and about how long the children will be playing outside (item 1.11)? Is there anything else I should know (in case an area is not in use or something is out of the ordinary)? Do the staff know I am observing today? I think it is important that they know. Thanks so much!

Walk around the entire play area making mental notes. Then find a location to sit that is out of the way and observe. Make notes of what you see and hear according to the assessment instrument. If a child approaches you, be friendly, but try not to engage in detailed conversation. Sometimes they just want to watch you. If they want to draw on your paper or have a long conversation, tell them you are working on a project and need to look at the play area from another place and move.

At the completion of your observation, conduct the interview. When you leave, you can tally up the scores and complete the remaining paperwork.

Preschool (age 3-5) Outdoor Environment Assessment Scale Cover Sheet

Name of Program	Address
Contact Person	Contact person's position
Date of Observation	Is the program state licensed?
Number of total children in the group to be observed	Total number of children in the child care program
Total number of children with special needs in observed group (reference item 1.2)	Number of total teachers in the group to be observed
Describe weather/climate on day observed (temperature, sunny, cloudy, rainy):	
Start time of observation:	
End time of observation:	

Documentation checked:

1. Outdoor Space Audit for Consumer Product Safety Commission guidelines (safety checklist): (items 5.8)
 - (a) documentation was provided
 - (b) documentation was not provided
 - © not applicable because there is no anchored equipment
2. Parent information (item 2.13)
 - (a) documentation was provided
 - (b) documentation was not provided
3. Written emergency plan (item 5.7)
 - (a) documentation was provided
 - (b) documentation was not provided

Notes and question responses to be ascertained in teacher or director interview:

Observer _____

Domain 1

Physical Environment

The physical *environment* provides the stage for action and stimulates children's play and learning. Outdoor spaces must be designed in such a way that children can test their abilities in an *environment* that offers many types and levels of challenge and stimulation. The outdoors also helps children grow up closely connected to nature. Children can learn by taking risks in a safe *environment* where they are protected from serious injury. The physical surroundings must engage and entice children's sense of inquiry, stimulate their imaginations, invite exploration, communicate a sense of belonging and cultural identity, and support their sense of developing competencies over time. The outdoors is integrated with the building and other facilities such as the parking lot and entrance areas. Special consideration is given to circulation, including pathways and traffic patterns and all adjacent areas located near the facility, including air quality (dust, fumes) and safety (proximity to highways for example).

The Physical Environment includes both the context of the outdoor play area and how the building and play space is sited.

A few key aspects for observing Physical Environment are:

- The most common problems occurring at the site level are poor orientation (example classrooms facing North), poor drainage (examples: ponding of water, water entering building), and confusing or inefficient circulation (example, outdoor areas located away from classrooms).
- Mutual planning between staff, parents and landscape architects is crucial to achieve high quality design.

Domain 2

Interactions

Children learn by interacting with other children, with adults, with objects and natural materials found in the *environment* (play props, toys, small animals, plants, pebbles, sand, etc). The *environment* can serve a valuable purpose when it is set up to expose children to opportunities, to explore, question, and develop theories about how things work. The outdoor *environment* can provide many opportunities for social interactions with other children and with adults. Negotiation, language and cooperation are all skills that develop through diverse opportunities.

The categories to build quality *Interactions* include:

- interactions with the *environment*
- child-child *interactions*
- teacher/caregiver-child *interactions*
- parent-child *interactions*

A few key aspects for observing in this domain are important to note.

- A program that has flexibility can create a positive tone supporting a child's natural curiosity to play outdoors.
- Outdoor time is maximized through an intentional, well-planned approach to arranging the space and using the time.
- The site is safe and scaled to a child's size.
- Children who have choices and the freedom to select safe materials to use outdoors are building upon their natural sense of exploration.
- An organized, but flexible, *environment* free from clutter helps children see their options.
- Child and adult *interactions* that seem natural and relaxed allow for more creative approaches to learning and problem solving.
- Adults follow the lead of the child. Adults who are overly intrusive or not involved at all with children are not able to notice what children want to explore and learn about in their surroundings.
- There is adequate *transition* between indoor and outdoor play. It gives children adequate time to *transition* and enough time to complete projects. Play is allowed so that undue stress is not created by the *transition*.
- Children are generally allowed to take parts of the outdoors inside and some activities generally found inside may be taken outside.

Domain 3

Play and Learning Settings

The Play and Learning Settings are defined spaces, toys, and play materials that support specific activities or groups of activities with a common theme. Examples are active play area, storytelling circle, sand and water play, tricycle path, vegetable garden, etc.

The *categories* for Play and Learning Settings include:

- Features
- Activity areas
- Moveable, Temporary, and *Loose Parts*

A few key aspects for observing the play and activity settings are important to note.

- If only large equipment is available for outdoor play, then children's experiences and opportunities for well-rounded development are severely limited. Boredom and negative social behavior may result.
- Developing quality play and learning *environments* outdoors takes time (sometimes years). Without forethought and careful planning, the play and learning potential of the space will not be realized to the maximum benefit.
- A long-range plan for an outdoor play and learning *environment* is an important tool for maximizing the potential of the space available.
- Involvement of teachers, parents, and children is essential for the design of effective play and learning areas.
- Play value and health and safety are key components. A special consideration is given to the possibility of tripping hazards and *entrapments*.

Domain 4

Program

The outdoors offers many opportunities for children to learn about themselves, each other, and their *environment*. It is an extension of the classroom. Teachers may include planned activities, as well as let ideas emerge from *interactions* that occur within the outdoor *environment*. Teachers who closely *observe* children playing and learning and who listen to see what children are inquiring about, are better able to plan an effective program. The effective use of outdoors as a learning space occurs when the *environment* is prepared to maximize learning opportunities. Diverse *settings* within the *environment* extend child investigation, encourage spontaneous exploration and movement, and enrich *interactions*. Diverse materials provide children with stimuli for new discoveries and new ways of expressing themselves.

A few key aspects for observing in this domain are important to note.

- Children with greater choices in their outdoor environments will expand their experience into broader areas of *curriculum*. This means choices beyond only playing extensively on basic, *anchored equipment* and open play areas.
- Diverse choices help children learn problem solving.
- Teachers should facilitate play and learning and not intrude or judge children's ideas, except to ensure safety.
- Outdoor special events and seasonal activities enhance children's connection with the regional culture and the environment (plants, animals, meteorological phenomena, customs).
- The outdoor space and program should address the child as a whole (physical, emotional, cognitive, and social).
- The program allocates space and time for child self-initiated activities/play.

Domain 5

Teacher/Caregiver Role

Teachers/caregivers must be able to apply their basic knowledge of how children develop in outdoor *environments*. Teachers/caregivers who can apply their knowledge about children's learning are better able to create effective outdoor programs and to improve the physical *environment* based on developmental and individual needs. Teachers/caregivers who are either uninvolved or too intrusive, judgmental or focused on rules, limit the creative learning opportunities that children seek.

The *categories* within teacher role include the *evidence* of forethought and preparation to arrange space and activities for children, the *evidence* of teachers applying what they know about children's development to outdoor play, and the teachers' willingness to explore and have a personal sense of wonder and engagement with children in their world.

The *categories* of *Teacher/Caregiver Role* include items that must be ascertained through interviewing staff members.

Note: Be sure to identify the lead teacher for observation for these items.

A few key aspects for observing in this domain are important to note.

- Teachers who understand that the outdoors is a living educational resource that provides multiple natural play and learning opportunities are able to incorporate outdoor play and learning as a regular part of their program and daily schedule.
- Teachers/caregivers should show evidence of preparing the outdoor space and expanding what is learned indoors.
- Predominantly teacher-led group activities for group participation limit the possibilities for individuals, pairs, or larger groups of children to engage in their own self-directed learning.
- Teachers/caregivers who do not plan for outdoor activity limit the possibilities for children's learning.
- Teachers/caregivers who pass on their fears or inhibitions to children may constrain children's exploration
- Teachers/caregivers who are uninvolved and non-interactive, or involved in unrelated tasks (like reading a novel or newspaper) are missing opportunities to engage with children in play and learning activities, and cannot safely supervise children.

Outdoor Environment Summary

(Transfer 5 Domain totals to this summary sheet)

Program Name _____

Date Observed _____

Domain 1 Physical Environment	
Domain total	

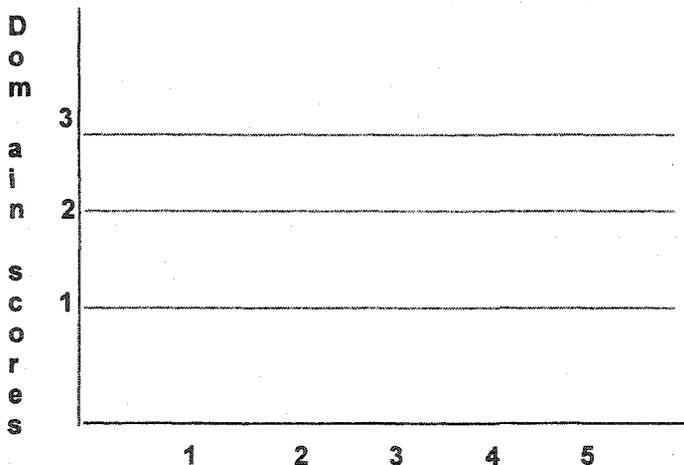
Domain 2 Interactions	
Domain total	

Domain 3 Play and Learning Settings	
Domain total	

Domain 4 Program	
Domain total	

Domain 5 Teacher/Caregiver Role	
Domain total	

Profile Graphic



DOMAINS 1 – 5

Documentation checked (see cover sheet)

1. Physical Environment

	Check if item is present	Check if item is NOT present
1.1 The space between parking and the center entrance allows easy and safe dropping off and picking up for both children and parents (At least two of the following: parking close to entrance, sidewalks lead to entrance, entrance covered from rain, limited traffic, pedestrian crosswalk, speed bumps, other)		
1.2 The center's external main entrance arrival area gives a welcoming impression of being child-friendly (At least two of the following: child art, banner, colorful displays, plants, other pertinent welcoming treatments).		
1.3 On the outside or inside of the main entrance door, there is a foyer, lobby, or covered porch that can serve as a place for social interactions to occur between adults and children.		
1.4 The outdoor play and learning areas are shielded or buffered from the fumes, dangers, and noise of adjacent parking areas (Examples: buffering by shrubs, solid fencing, wall, or distance from parked vehicles).		
1.5 The windows of the classroom observed that face outdoors receive adequate sun and external shade (trees, pergolas, retractable awnings, window shades, etc.) so classrooms do not become too hot and glaring or too cold and dark.		
1.6 Windows are on children's eye level.		
1.7 Windows can be opened to allow fresh air and are properly screened against insects (opened and screened both to check present)		
1.8 Classrooms being observed open directly outdoors into usable transition spaces (deck, patio, pergola) large enough for noisy, messy activities to occur.		
1.9 Ground surface drainage in the outdoor area appears adequate (no gullies, washed out mulch, or soil erosion).		
1.10 The outdoor area is enclosed by a sturdy fence that is at least 4 ft. tall. The fence has a safe gate closure and no entrapment spaces.		
1.11 The overall impression is of a natural area. The landscape contains at least 5 of the following: <ul style="list-style-type: none"> π various safe ground surfaces (mulch, grass, pebbles) π various non-poisonous plants π topographic variations (such as mounds, terraced yard) π flowering plants (perennial or annual) π vines π smooth rocks π logs π different species of trees π shrubs # observed		
1.12 All outdoor space is easily accessible by children, parents, and other relatives, including those with special needs. Children of all abilities can play in the same vicinity, regardless of the abilities of children presently enrolled.		
1.13 Shade is provided (by building shadows, manufactured shade structures, trees, pergolas, umbrellas, etc.)		
Total Items present		
Domain Score for Physical Environment (Domain scores are a 1, 2, or 3)		
10-13 items checked = 3 full met		
7-10 items checked = 2 partially met		
Less than 7 items checked = 1 not met (transfer to summary page)		

2. Interactions

<i>Interactions with the Environment (observed)</i>	<i>Check if item is present</i>	<i>Check if item is NOT present</i>
2.1 At least one child is observed touching, noticing, and sensing the natural environment (such as: cloud watching, smelling flowers, touching trees).		
2.2 Evidence of at least one child-initiated activity with natural loose parts (examples: collections of objects, piles of pebbles, rows of sticks, etc) is present.		
2.3 Teachers allow spontaneous or unplanned child-initiated activities to occur within the natural environment (such as picking leaves, digging other than sand, forming snow angels, making mud pies)		
<i>Child-Child Interactions (observed) (*for all abilities)</i>		
2.4 Space has defined areas that encourage child-to-child interactions (At least two of the following: two-person bench, talk tubes, intersecting pathways, puppet theatre, play house, play store).		
2.5 Atmosphere is busy. Children are actively engaged with each other.		
<i>Teacher/Caregiver-Child Interactions (observed)</i> (Note: observe target teacher – the one to be interviewed)		
2.6 Children approach the teacher with questions and seek support for their learning and teachers respond appropriately		
2.7 Teacher/Caregiver encourage or facilitate small group activity.		
2.8 Teacher/Caregiver skillfully notice children's learning needs by listening to and observing cues in order to guide their planning of learning activities. (interview if not observed) How do you decide what to do outdoors with the children?		
2.9 Teacher/Caregiver use open-ended questions to explore children's interests that lead to initiating learning activities. How do you build on children's interests outdoors? How do you know what they are interested in?		
2.10 Teacher/Caregiver do not let their personal fears of wildlife or nature (i.e. spiders, frogs) influence the children negatively. They respond appropriately. (interview if not observed) Have you encountered something of which you were afraid (like a spider)? How did you handle that with the children?		
2.11 Teacher/Caregiver model inquisitiveness and exploration to support new learning.		
2.12 Teacher/Caregiver support children's ongoing learning without forcing involvement or intruding.		
<i>Parent-child Interactions (observed)</i>		
2.13 Parents are welcome in the outdoor areas (see evidence in handbook, newsletters, bulletin boards, photos). How do you communicate with parents that they are welcome during outdoor play?		
2.14 Adult-sized sitting spaces are available for parents/relatives and children to interact outdoors.		
Total number checked present		
Domain Score for Interactions (Domain scores are a 1, 2, or 3)		
11-14 items checked = 3 full met		
7-11 items checked = 2 partially met		
Less than 7 items checked = 1 not met (transfer to summary page)		

3. Play and Learning Settings

Features (observed)	Check if item present	Check if item not present
3.1 There are <i>enough</i> outdoor toys for all children to use without undue competition.		
3.2 Play materials are developmentally appropriate.		
3.3 Play materials and toys can be reached and played with by children.		
3.4 Ample circulation areas and pathways are usable by wheeled toys.		
3.5 Storage is adequate for <i>outdoor toys, loose parts, and supplies</i> .		
Activities (observed)		
3.6 The area contains an adequate variety of constructed play and learning settings. At least five (5) of the following should be available for the children to use:		
<ul style="list-style-type: none"> π sand play π anchored play equipment π raised decks π sitting benches π woodwork benches π small stages (including puppet stage) 	<ul style="list-style-type: none"> π water play π play houses π acoustic play area π arts/crafts area π other _____ 	# observed <input type="text"/>
3.7 The area contains an adequate variety of natural & manufactured play and learning settings. At least five (5) of the following should be available:		
<ul style="list-style-type: none"> π small, easily supervised cozy nooks π safe stepping stones π rolling/climbing mounds π flower and vegetable garden beds π fruit tree π animal habitats 	<ul style="list-style-type: none"> π crawl through places (tunnels) π balance beams or opportunities to balance π grass mazes π trees π other _____ 	# observed <input type="text"/>
<i>(bird blinds, rain gardens, butterfly gardens, logs, carpet "lift-ups," bird feeder, ant farm)</i>		
3.8 A multipurpose open grassy area is available for large group games, running, dramatic play, music and movement, parachute play, social gatherings, etc. (note: Measure this by imagining 15 preschool children holding hands in a circle)		
3.9 A variety of horizontal elevated work surfaces are available (picnic table, stump, counter, raised deck) for art, dramatic play, etc. There should be at least two surfaces present.		
Moveable, Temporary, and Loose Parts (observed)		
3.10 Tricycles and other wheeled toys are available.		
3.11 At least 3 <u>natural loose parts</u> are available:		
<ul style="list-style-type: none"> π smoothed sticks π dirt π driftwood π shells π river stones 	<ul style="list-style-type: none"> π acorns π mulch π pine cones π leaves π other _____ 	# observed <input type="text"/>

3.12 At least 5 manufactured loose parts are available:

π blocks

π hoses

π ball

π manipulatives

π sand toys

π water toys

π pieces of cloth

π rings/hula hoops

π chalk

π skipping rope

observed

π other

3.13 A variety (at least 3) of decorative, colorful elements are used to enliven the character of the area.

π banner

π flag

π wind sock

π giant chime

π statue

π seasonal object (pumpkins in the Fall)

π cultural artifact (s)

π children's own art creation (s). (interview question if not observed)

π other

observed

Total number checked as present

Domain Score for Play and Learning Settings (Domain scores are a 1, 2, or 3)

10-13 items checked = 3 full met

7-10 items checked = 2 partially met

Less than 7 items checked = 1 not met (transfer to summary page)

4. Program

	Check if item is present	Check if item is NOT present
4.1 There is a planned activity linked to seasonal changes (e.g. snow play, beach parties, apple butter making, gardening, kite flying, lemonade stand, etc.) Note: If not observed, interview: Within the last month, what special activities have you done outdoors? (Activity must relate to the season or weather)		
4.2 <u>Art, drama, and music</u> activities are supported by the program with at least five (5) of the following on the day observed. <ul style="list-style-type: none"> <input type="checkbox"/> sound board or instruments <input type="checkbox"/> stage (or deck for drama) <input type="checkbox"/> singing <input type="checkbox"/> children's art is displayed to be viewed from in or the out of doors <input type="checkbox"/> props to support dramatic play <input type="checkbox"/> props to support movement and dance <input type="checkbox"/> markers, chalk, crayons, pencils <input type="checkbox"/> clay, playdough <input type="checkbox"/> paint <input type="checkbox"/> craft materials # observed <input type="checkbox"/> tape or CD player <input type="checkbox"/> puppets <input type="checkbox"/> <input type="checkbox"/> easels <input type="checkbox"/> other <input type="checkbox"/> 		
4.3 <u>Math and science</u> activities are supported by the outdoor program with at least five (5) of the following on the day observed. <ul style="list-style-type: none"> <input type="checkbox"/> collecting, classifying, sorting <input type="checkbox"/> bird feeders <input type="checkbox"/> hopscotch and other number games <input type="checkbox"/> collecting trays and containers <input type="checkbox"/> magnifying glasses <input type="checkbox"/> blocks <input type="checkbox"/> artifacts from nature (shells, sharks teeth, rocks etc.) <input type="checkbox"/> gardens, diverse plantings <input type="checkbox"/> measuring length # observed <input type="checkbox"/> measuring temperature (e.g. thermometer on child's level) <input type="checkbox"/> <input type="checkbox"/> measuring volume (e.g. rain gauge on child's level) <input type="checkbox"/> <input type="checkbox"/> other <input type="checkbox"/> 		
4.4 <u>Language activities</u> are supported by the outdoor program with at least five (5) of the following on the day observed. <ul style="list-style-type: none"> <input type="checkbox"/> letters (stencils, plastic alphabet, letter puzzles) <input type="checkbox"/> storytelling area <input type="checkbox"/> flannel board with materials <input type="checkbox"/> dry erase board with markers <input type="checkbox"/> labels on materials or signs <input type="checkbox"/> books on tape <input type="checkbox"/> children's books <input type="checkbox"/> alphabet garden <input type="checkbox"/> paper with writing materials (e.g. pencils, crayons, markers) <input type="checkbox"/> puppets <input type="checkbox"/> microphone <input type="checkbox"/> <input type="checkbox"/> children's books <input type="checkbox"/> alphabet garden <input type="checkbox"/> other # observed 		
4.5 Evidence of at least one indoors/outdoors connection and one outdoors/indoors connection (two total - examples: plants and collections inside and books and blocks outside) on the day observed.		
4.6 Opportunities for <u>physical activity and movement</u> are supported by the outdoor program with at least five (5) of the following. (Materials must support each item) <ul style="list-style-type: none"> <input type="checkbox"/> climbing <input type="checkbox"/> throwing <input type="checkbox"/> dancing <input type="checkbox"/> sliding <input type="checkbox"/> kicking <input type="checkbox"/> hopping # observed <input type="checkbox"/> <input type="checkbox"/> crawling through <input type="checkbox"/> skipping <input type="checkbox"/> jumping on/off <input type="checkbox"/> lifting <input type="checkbox"/> balancing <input type="checkbox"/> other 		

4.7 Opportunities are offered to meet various levels of children's physical abilities (jumping, sliding, climbing). Provisions for lesser and greater challenge - at least 2 pair.

(Examples: lower and higher climbing areas, tricycles with and without pedals.)

4.8 Safe opportunities are provided for the stimulation of the vestibular sense (rolling, swinging, sliding, rocking, porch swing). At least two opportunities present.

4.9 Children go outside at least two periods each day for at least 20 minutes each time. (Interview) **When do you take the children outside?**

Total number checked present

Domain Score for Program (Domain scores are a 1, 2, or 3)

7-9 items checked = 3 full met

5-9 items checked = 2 partially met

Less than 5 items checked = 1 not met (transfer to summary page)

5. Teacher/ Caregiver Role

	Check if item is present	Check if item is NOT present
5.1 Teachers/caregivers involve families in outdoor activities. --Tell me how families are included in outside activities or special outdoor festivals? (must relate at least one example)		
5.2 Teachers/caregivers educate and communicate the value of outdoor play, including natural settings to parents (documentation). -- What measures do you take to inform families and parents about the use of outdoors? What kind of information do you convey to parents about the outdoors?		
5.3 Teachers/caregivers model environmental care as part of the normal outdoor program with children (e.g. watering, weeding, staking plants). Are children allowed to weed, rake, water plants with teachers?		
5.4 Teachers/caregivers use the surrounding context of the center as an extended place to learn about the outdoors or community (local businesses, natural areas, neighborhood grocer). -- Do you ever go outside the fenced (enclosed) play yard to explore other areas close by?		
5.5 Children are exposed to outside resource people to enhance their outdoor experiences as a result of teacher's/caregiver's planning. - How are outside resources used to enhance any of your outdoor experiences (Focus should be outdoors - gardener, storyteller outside, 4-H gardening club, Audubon, scouts)		
5.6 Teachers/caregivers seek professional development opportunities about children's outdoor play and learning (books, web sites, continuing education, workshops, field visits, other resources). --Tell me other ways you and your staff have learned about using the outdoors with children.		
5.7 Teachers/caregivers attend to outdoor health needs including π sunscreen π provisions for allergies π drinking water π chapstick π mittens π gloves π hats π other appropriate clothing π other _____ --How do you prepare the children for extreme hot or cold weather? (must mention 3.)		
5.8 Teachers/caregivers have a plan for outdoor first aid, emergency communication systems, and knowledge of emergency first aid, including safe management of bleeding injuries. -- What kinds of written procedures teachers use to handle emergencies or injuries when outdoors? (See written plan & describe procedures; emergency gate for exit for example)		
5.9 The center director and at least one teacher/caregiver have completed training in playground safety that covers CPSC guidelines and standards for safe equipment. --How many teachers have completed playground safety training? (required every three years)		
Total number checked present		
Domain Score for Teacher/caregiver role (Domain scores are a 1, 2, or 3) 7-8 items checked = 3 full met 4-6 items checked = 2 partially met Less than 4 items checked = 1 not met (transfer to summary page)		

Note: *To check teacher/caregiver items, the item must apply to at least one teacher per group observed.

Glossary

Accessible

Designed and created in a way that is user-friendly for all people (children & adults) of all abilities. This would include accessibility standards as defined through the ADAAG—American with Disabilities Act Accessibility Guidelines. See: <http://www.access-board.gov/adaag/html/adaag.htm>

Adaptations

Changes made to the environment to accommodate children or family members with disabilities such as a ramp, flowerbed heights, wayfinding elements (tactile cues for visual impairments).

Alphabet Garden

A garden that has intentionally been planted to include a variety of plants with each letter of the alphabet.

Anchored equipment

Playground equipment that is secured to the ground using concrete footing or other methods.

Annual plants

Lasting for one year only; changed each year. (See perennial plants). Plants with a life cycle.

Arbor

A shaded or covered alley or walk. A bower or shady retreat, of which the sides and roof are formed by trees and shrubs closely planted or intertwined, or of lattice-work covered with climbing shrubs or vines.

Bird blind

A permanent or temporary structure erected to allow close observation of bird behavior. A screen through which humans can observe birds but not vice versa. Bird feeders and bird-attracting plants provided on the bird side attract the birds.

CPSC

Consumer Product Safety Commission. <http://www.cpsc.gov/> also see *Safety Standards*

Carpet lift up

A piece of carpet installed as a bug habitat. Small animals live in the dark, damp area under the carpet. Children lift up the carpet to see different types of organisms using hand lenses and "bug boxes" (plastic boxes with magnifying tops).

Categories

This scale includes sub-areas for observation under each *domain*. These are called categories. There are three to four categories per *domain*. Within each category are 4-7 items to be observed.

Carnivorous plant

A plant capable of trapping and absorbing insects as nutrients (such as the Venus flytrap).

Children of all abilities

Expresses inclusion of all children, those with special needs, obese children, and all those with physical, sensory, and developmental limitations.

Curriculum

The planned interaction of children with experiences, materials, resources, and processes designed to result in specific developments appropriate for the ages of the children.

Deciduous

Trees that lose their leaves in autumn.

Domain

This scale includes five basic overarching areas called domains. Within each domain are a set of sub-areas called categories.

Enough

A sufficient amount of toys, equipment or materials to provide for playful interactions without excessive problems between young children in sharing to serve the purpose of playing and sharing without undue stress.

Environment

The surrounding space and objects. Also includes people and the *interactions* between them.

Entrapment

Any condition that impedes withdrawal of a body or body part that has penetrated an opening. This does not apply when the ground is the lower border.

Evidence (for this assessment scale)

Anything that shows a category within a domain as being achieved. Examples include photos, logs of information, written records, children's drawings, classroom displays, teachers' reports, etc.

Habitat

The locality in which a plant or animal naturally occurs; habitation; sometimes restricted to the particular station or spot in which a specimen is found.

Head and body entrapment

Interior surfaces less than 3.5 inches or more than 9 inches.

Interactions

Social exchanges between children and anything in their environment including other children and adults as well as objects and materials in their surroundings.

Loose parts

Loose parts help children manipulate their environment to stimulate imaginary and dramatic play. They may include a wide variety of small natural and synthetic "found objects" such as sticks and stones, bottle tops and popsicle sticks, logs and rocks, plan parts, sand and dirt, and larger items such as modular systems, wheeled toys, tires, large blocks, boards.

Observation

Recognizing a specific fact or occurrence and recording what is seen for future analysis, planning and reference. Observation can be used to provide additional information about a child's learning style and behavior. Stepping back and carefully looking at the complex interactions taking place can furnish useful clues for planning curricular interventions.

Open-ended questions

Probing children's observations and interests to extend thinking by using queries that do not have "yes" or "no" responses. Using phrases such as "tell me about," "what would happen next" or "how would you" to engage children's attention in the learning process.

Outdoor toys

Toys made for use outdoors such as bikes, balls, jump ropes, buckets, shovels, rakes, and blocks.

Perennial plants

Plants with a life cycle extending over a number of years including plants that die back each year and shoot up afresh every year in the Spring. (See annual plants.)

Pergola

An arbor formed of growing plants trained over trellis-work; especially a covered walk so formed. (See arbor.)

Playground safety training

Training that covers safe design and installation of anchored equipment (Consumer Product Safety Commission Guidelines for Public Playground Safety), maintenance of anchored equipment area, supervision of children on anchored equipment, and accessibility (or inclusion) issues related to anchored equipment.

Rain garden

A constantly moist garden containing attractive, water loving plants including carnivorous plants. Can be a wildlife habitat for reptiles, amphibians, and insects. Useful for collecting water from rain and water play areas. In early childhood centers it is useful for educational purposes.

Sensory Skills

Activities that involve children experiencing and exploring using senses of touch, hearing, vision, smell, and taste, as well as movement. This skill area helps children learn about their environment as well as develop a sense of body awareness.

Safety Standards

Standard of care related to manufactured anchored outdoor play equipment as presented in the most recently published versions of the U.S. Consumer Product Safety Commission (USCPSC) handbook for Public Playground Safety and the American Society for Testing and Materials (ASTM) Standards—current version (2001) is F1487-95. Up-to-date information is available on the respective websites www.spsc.gov/ and www.stm.org/

Setting

A designated space or surface designed to serve a specific function, activity, or set of activities (for example, multipurpose lawn). Settings may include loose parts and permanent features. A dramatic play setting for example may include a platform or a puppet stage.

Siting

The way the building is situated on the property considering the use of solar and other weather properties as well as land efficiency and noise/congestion.

Stationary equipment

Any play structure that does not move or does not have components that move during its intended use.

Toe-hold

A small feature that supports the toes, as in a climbing structure.

Topography

The "lay of the land"—variations in ground surface in the vertical and horizontal dimensions. A description on paper of a ground surface using topographic lines at a specified interval.

Transition

Movement from one activity or location to another frequently requires teacher/caregiver planning and facilitation to complete the change in a smooth and positive manner for a group of children.

Vestibular

Pertaining to the vestibule of the ear or its function as an organ of equilibrium.

Vestibular functions (balance and equilibrium) are considered to be a sense beyond the traditional five senses. Activities that stimulate this sense.

REFERENCES

- Allen, M. (1968). *Planning for play*. Cambridge, MA: M. I. T. Press.
- Abery, B. & Zajac, R. (1996). Self-determination as a goal of early childhood and elementary education. In D. Sands & M. Wehmeyer (Eds.), *Self-determination across the lifespan: Independence and choice for people with disabilities* (pp. 169-196). Baltimore, MD: Paul Brookes Publishing.
- Barbour, A. C. (1999). The impact of playground design on the play behaviors of children with differing levels of physical competence. *Early Childhood Research Quarterly*, 14, 1, 75-98.
- Barnard, H. (1850). *School architecture, or Contributions to the improvement of school-houses in the United States*. New York: A. S. Barnes & Co.
- Bell, M. J., & Walker, P. (1985). Interactive patterns in children's play groups. In J. L. Frost & S. Sunderlin (Eds.), *When children play* (pp. 139-144). Wheaton, MD: Association for Childhood Education International.
- Bilton, H. (1999). *Outdoor play in the early years: Management and innovation*. London, U.K.: David Fulton Publishers.
- Bowers, L. (1990). National survey of preschool centers playground equipment. In S. C. Wortham & J. L. Frost (Eds.), *Playgrounds for young children: National survey and perspectives* (pp. 5-16). Reston, VA: American Alliance for Health, Physical Education, Recreation and Dance.
- Bredenkamp, S., & Copple, C. (1997). *Developmentally appropriate practice in early childhood programs* (2nd ed). Washington, DC: National Association for the Education of Young Children.
- Brett, A., Moore, R. C., & Provenzo, E. F., Jr. (1993). *The complete playground book*. Syracuse, NY: Syracuse University Press.
- Brotherson, M. J., Cook, C. C., Cunconan-Lahr, R., & Wehmeyer, M. L. (1995). Policy supporting self-determination in the environments of children with disabilities. *Education and Training in Mental Retardation and Developmental Disabilities*, 3-14.
- Brotherson, M. J., & Goldstein, B. L. (1992). Quality design of focus groups in early childhood special education research. *Journal of Early Intervention*, 16, 4, 334-342.
- Bruya, L. D. (1985). Design characteristics used in playgrounds for children. In J. L. Frost & S. Sunderlin (Eds.), *When children play* (pp. 215-220). Wheaton, MD: Association for Childhood Education International.

- Bullough, R. V., & Gitlin, A. D. (2001). *Becoming a student of teaching: Linking knowledge, production and practice*. New York: Routledge Falmer.
- Chawla, L. (1994). *In the first country of places: Nature, poetry, and childhood memory*. Albany: SUNY Press.
- Chawla, L., & Hart, R. (1988). The roots of environmental concern. Proceedings of the 19th Annual Conference of EDRA, Pomona, CA. Reprinted in the *NAMTA Journal* (1995), 20(1), 148-157.
- Charlesworth, R. (1987). *Understanding child development*. Albany, NY: Delmar.
- Children's Defense Fund (1990). *Children 1990: A report card, briefing book and action primer*. Washington, DC: Author.
- Christie, J. F., Johnson, E. P., & Peckover, R. B. (1988). The effects of play period duration on children's play patterns. *Journal of Research in Childhood Education*, 3(2), 123-131.
- Johnson, J. E., Christie, J. F., & Yawkey, T. D. (1999). *Play and early childhood development* (2nd ed.). New York: Addison Wesley Longman.
- Coley, R. L., Kuo, F. E., & Sullivan, W. C. (1997). Where does community grow? The social context created by nature in urban public housing. *Environment and Behavior*, 29(4), 468-494.
- Collier, R. G. (1985). The results of training preschool teachers to foster children's play. In J. L. Frost & S. Sunderlin (Eds.), *When children play* (pp. 305-311). Wheaton, MD: Association for Childhood Education International.
- Collins, K., McAleavy, G., & Adamson, G. (2004). Bullying in schools: A Northern Ireland study. *Educational Research*, 46(1), 55-71.
- Corsaro, W. A. (1985). *Friendships and peer culture in the early years*. Norwood, NJ: Ablex.
- Creswell, J. W. (2002). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. Upper Saddle River, NJ: Pearson Education, Inc.
- Creswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among five traditions*. Thousand Oaks, CA: Sage.
- Danaher, P. A., Wyer, D. W., & Bartlett, V. L. (1998). Theorising open learning for researching home school and itinerant settings. *Open Learning*, 13(1), 9-17.
- Dannenmaier, M. (1998). *A child's garden: Enchanting outdoor spaces for children and parents*. New York: Simon & Schuster.

- DeBord, K., Moore, R. C., Hestenes, L. L., Cosco, N., & McGinnis, J. (2002). *Preschool Outdoor Environment Assessment Scale*. Unpublished manuscript, Raleigh: North Carolina State University.
- DeBord, K., Moore, R. C., Hestenes, L. L., Cosco, N., & McGinnis, J. (2003). *Making the most of outdoor time with preschool children*. Raleigh: North Carolina Cooperative Extension Service.
- Dempsey, J. D. (1985). *The effects of training in play on cognitive development in preschool children*. Doctoral dissertation, University of Texas at Austin.
- Dempsey, J. D., & Frost, J. L. (1993). Play environments in early childhood education. In B. Spodek (Ed.), *Handbook of research on the education of young children* (pp. 306-321). New York: MacMillan.
- Denzin, N. K., & Lincoln, Y. S. (1998). *Strategies of qualitative inquiry*. Thousand Oaks, CA: Sage.
- Dien, L. (1991). *The use and management of loose parts on a playground for integrating children with and without disabilities: Values, problems and possibilities*. Doctoral dissertation, City University of New York.
- Edwards, C., L. Gandini, & G. Forman (Eds.). (1993). *The hundred languages of children: The Reggio Emilia approach to early childhood education*. Norwood, NJ: Ablex.
- Ellis, M. J. (1973). *Why people play*. Englewood Cliffs, NJ: Prentice Hall.
- Erwin, E. J., & Brown, F. (2003). From theory to practice: A contextual framework for understanding self-determination in early childhood environments. *Infants and Young Children, 16*(1), 77-87.
- Esbensen, S. (1990). Play environments for young children: Design perspectives. In S. C. Wortham & J. L. Frost (Eds.), *Playgrounds for young children: National survey and perspectives* (pp. 49-68). Reston, VA: American Alliance for Health, Physical Education, Recreation and Dance.
- Evans, G. W., Wells, N. M., Chan, H.-Y. E., & Saltzman, H. (2000, June). Housing quality and mental health. *Journal of Consulting & Clinical Psychology, 68*(3), 526-530.
- Faber Taylor, A., Kuo, F. E., & Sullivan, W. C. (2001). Coping with ADD: The surprising connection to green play settings. *Environment and Behavior, 33*(1), 54-77.
- Faber Taylor, A., Wiley, A., Kuo, F. E., & Sullivan, W. C. (1998). Growing up in the inner city: Green spaces as places to grow. *Environment and Behavior, 30*(1), 3-27.

- Fals-Broda, O., & Rahman, M. A. (Eds.). (1991). *Action and knowledge: Breaking the monopoly with participatory action research*. New York: Intermediate Technology/Apex.
- Fjortoft, I. (2001). The natural environment as a playground for children: The impact of outdoor play activities in pre-primary school children. *Early Childhood Education Journal*, 29(2), 111-117.
- Francis, M. (2003). *Urban open space: Designing for user needs*. Washington, DC: Island Press.
- Fromberg, D. P. (1999). A review of research on play. In C. Seefeldt (Ed.), *The early childhood curriculum: Current findings in theory and practice* (3rd ed.). New York: Teachers College Press.
- Frost, J. L. (1992). *Play and playscapes*, Albany, NY: Delmar Publishers, Inc.
- Frost, J. L., & Klein, B. L. (1979). *Children's play and playgrounds*. Boston: Allyn and Bacon, Inc.
- Frost, J. L., & Sunderlin, S. (1985). *When children play*. Wheaton, MD: Association for Childhood Education International.
- Frost, J. L., Wortham, S. C., & Reifel, S. (2001). *Play and child development*. Englewood Cliffs, NJ: Merrill Prentice Hall.
- Ginsberg, B. G. (1993). Catharsis. In C. E. Schaefer (Ed.), *The therapeutic powers of play* (pp. 107-141). Northvale, NJ: Jason Aronson, Inc.
- Gandini, L. (1994). Not just anywhere: Making child care centers into "particular" places, Special places for children – The schools of Reggio Emilia, Italy. *Child Care Information Exchange*, 48-50.
- Geisthardt, C. L., Cook, C. C., & Brotherson, M. J. (1998). *The impact of the home environment on the development of self-determination in children with disabilities*. Doctoral dissertation, Iowa State University, Ames.
- Gibson, J. J. (1966). *The senses considered as perceptual systems*. Boston: Houghton Mifflin.
- Gibson, J. J. (1979). *The theory of affordances and the design of the environment*. Paper presented at meeting of the American Society of Aesthetics, Toronto, Canada.
- Gillespie, C. W. (2000, January). Six Head Start classrooms begin to explore the Reggio Emilia approach. *Young Children*, 21-27.
- Glesne, C. (1999). *Becoming qualitative researchers: An introduction* (2nd ed.). New York: Addison Wellesley Longman.

- Gramza, A. E. (1970). Preferences of young children for enterable play boxes. *Perceptual and Motor Skills*, 31, 177-178.
- Greenman, J. (1988). *Caring spaces, learning places: Children's environments that work*. Redmond, WA: Exchange Press, Inc.
- Guba, E. G., & Lincoln, Y. S. (1982). Epistemological and methodological bases of naturalistic inquiry. *Educational Communication and Technology: A Journal of Theory, Research and Development*, 30(4), 233-252.
- Harms, T., Clifford, R. M., & Cryer, D. (1998). Early childhood environment rating scale (Revised ed.). New York: Teachers College Press.
- Hart, C. H. (1993) (Ed.). *Children on playgrounds: Research perspectives and applications*. Albany: State University of New York Press.
- Hart, G. (1997). Houses and their resource-rich activity pockets. *Child Care Information Exchange*, 1, 15-20.
- Hart, R. A. (1995). Affection for nature and the promotion of earth stewardship in childhood. *The NAMTA Journal*, 20(2), 59-68.
- Harter, S. (1982). The perceived competence scale for children. *Child Development*, 53, 87-97.
- Hartig, T., Kaiser, F. G., & Bowler, P. A. (2001). Psychological restoration in nature as a positive motivation for ecological behavior. *Environment and Behavior*, 33(4), 590-607.
- Hartle, L., & Johnson, J. (1993). Historical and contemporary influences of outdoor play environments. In C. Hart (Ed.), *Children on playgrounds: Research perspectives and applications* (pp. 14-42). Albany, NY: SUNY Press.
- Haugen, K. (2003). Beyond ramps: Outdoor environments to welcome all children. *Child Care Information Exchange*, 3, 55-57.
- Hayward, G., Rothenberg, M., & Beasley, R. R. (1974). Children's play and urban playground environments. *Environment and Behavior*, 6(2), 131-168.
- Hedges, H. (2000). Teaching in early childhood: Time to merge constructivist views so learning through play equals teaching through play. *Australian Journal of Early Childhood*, 25(4), 16-26.
- Heft, H. (1988). Affordances of children's environments: A functional approach to environmental description. *Children's Environments Quarterly*, 5, 3.

- Heft, H., & Wohlwill, J. F. (1987). Environmental cognition in children. In D. Stoklols & I. Altman (Eds.), *Handbook of Environmental Psychology, Vol. 1* (pp. 175-204). New York: Wiley-Interscience.
- Hendricks, B. E. (2001). *Designing for play*. Burlington, VT: Ashgate Publishing Company.
- Henninger, M. L. (1977). *Free play behaviors of nursery school: Children in an indoor and outdoor environment*. Doctoral dissertation, The University of Texas at Austin.
- Herrington, S. (1997). The received view of play and the subculture of infants. *Landscape Journal, 16*(2), 149-159.
- Herrington S., & Studtmann, K. (1998). Landscape interventions: New directions for the design of children's outdoor play environments. *Landscape and Urban Planning, 42*, 191-205.
- Hestenes, L. L., & Carroll, D. E. (2000). The play interactions of young children with and without disabilities: Individual and environmental influences. *Early Childhood Research Quarterly, 15*(2), 229-246.
- Hewes, D. W. (2003). A history of outdoor playspaces: From the natural environment to recycled plastic. *Child Care Information Exchange, 3*. Retrieved May 30, 2004 from <http://www.childcareinformationexchange.com>
- Hudson, S., Thompson, D. & Mack, M. (2000). Planning playgrounds for children of all abilities. *School Planning and Management, 39*(2), 35-40.
- Johnson, J., Christie, J., & Yawkey, T. (1987). *Play and early childhood development*. Glenview, IL: Scott, Foresman, and Company.
- Johnson, M. W. (1935). The effect on behavior in variation in the amount of play equipment. *Child Development, 6*, 56-68.
- Kahn, P. H., & Lourenco, O. (1999). *Water, air, fire and earth: A developmental study in Portugal of environmental conceptions and values*. Paper presented at the Biennial Meeting of the Society for Research in Child Development, Albuquerque, NM.
- Kaplan, R. (2001). The nature of the view from home: Psychological benefits. *Environment and Behavior, 33*(4), 507-542.
- Kaplan, S. (1995). The restorative benefits of nature: Toward an integrative framework. *Journal of Environmental Psychology, 15*, 169-182.
- Kaplan, R., & Kaplan, S. (1989). *The experience of nature: A psychological perspective*. Cambridge, U.K: Cambridge University Press.

- Kaplan, R. Kaplan, S., & Ryan, R. L. (1998). *With people in mind: Design and management of everyday nature*. Washington, DC: Island Press.
- Kemmis, S., & McTaggart, R. (2000). Participatory action research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed.) (pp. 567-605). Thousand Oaks, CA: Sage.
- Kern, P., & Wolery, M. (2002). The sound path: Adding music to a child care program. *Young Exceptional Children*, 5(3), 12-20.
- Kincheloe, J. (1995). Meet me behind the curtain: The struggle for a critical postmodern action research. In P. McLaren & J. Giarelli (Eds.), *Critical theory and educational research* (pp. 71-87), Albany, NY: SUNY Press.
- Kirkby, M. (1989). Nature as refuge in children's environments. *Children's Environments Quarterly*, 6(1), 7-12.
- Korpela, K. M. (1992). Adolescents' favorite places and environmental self-regulation. *Journal of Environmental Psychology*, 12, 249-258.
- Kritchevsky, S., Prescott, E., & Walling, L. (1969). *Planning environments for the young children: Physical space*. Washington, DC: National Association for the Education of Young Children.
- Lather, P. (1986). Research as praxis. *Harvard Educational Review*, 56(3), 257-277.
- Lefaivre, L., & Roode, I. (2002) (Eds.). *Aldo van Eyck: The playgrounds and the city*. Rotterdam, Netherlands: NAI Publishers.
- Leighter, H. J. (1980). Introduction to Waldorf education. *Teachers College Record*, 81(3), 323-336.
- Lewis, C. E., Seigel, J. M., & Lewis, M. A. (1984). Feeling bad: Exploring sources of distress among pre-adolescent children. *American Journal of Public Health*, 74, 117-122.
- Lincoln, Y. S. (1995). Emerging criteria for quality in qualitative and interpretative research. *Qualitative Inquiry*, 1(3), 275-289.
- Loo, C. & Kennelly, D. (1979). Social density: Its effects on behaviors and perceptions of preschoolers. *Environmental Psychology and Non-verbal Behavior*, 3, 3, 131-146.
- Malone, K., & Tranter, P. (2003). Children's environmental learning and the use, design and management of schoolgrounds. *Children, Youth and Environments*, 13(2). Retrieved March 17, 2004 from <http://cye.colorado.edu>

- McAuley, H., & Jackson, P. (1992). *Educating young children: A structural approach*. London, U.K.: David Fulton Publishers.
- McCormick, K. M., Jolivet, K., & Ridgley, R. (2003). Choice making as an intervention strategy for young children. *Young Exceptional Children*, 6(2), 3-10.
- Miller, P. L. (1972). *Creative outdoor play areas*. Englewood Cliffs, NJ: Prentice-Hall.
- Mills, G. (2000). *Action research: A guide for the teacher researcher*. Upper Saddle River, NJ: Merrill/Prentice Hall.
- Montessori, M. (1936). *The secret of childhood*. Bombay, India: Orient Longman.
- Montessori, M. (1963). *Education for a new world*. Madras, India: Kalakshetra.
- Moore, G. T. (1985). State of the art in play environment. In J. L. Frost & S. Sunderlin (Eds.), *When children play* (pp.171-199). Wheaton, MD: Association for Childhood Education International.
- Moore, G. T. (1997). Site planning and layout. *Child Care Information Exchange*, 1, 15-20.
- Moore, G. T. (1998). Houses and their resource rich activity pockets. *Child Care Information Exchange*, 1, 24-26.
- Moore, R. Childhood's domain as quoted in Trimble (1994). Inscripture of maps, the names of trees: A child's landscape. In G. P. Nabhan & S. Trimble. *The geography of childhood* (pp. 15-32). Boston: Beacon Press.
- Moore, R. C., Goltsman, S. M., & Iacofano, D. S. (1987). *Play for all guidelines: Planning, design and management of outdoor play settings for all children*. Berkeley, CA: MIG Communications.
- Moore, R. C., & Wong, H. (1997). *Natural learning: Creating environments for rediscovering nature's way of teaching*. Berkeley, CA: MIG Communications.
- Nabhan, G. P., & Trimble, S. (1994). *The geography of childhood: Why children need wild places*. Boston: Beacon Press.
- Nabors, L., Willoughby, J., Leff, S., & McMenamin, S. (2001). Promoting inclusion for young children with special needs on playgrounds. *Journal of Developmental and Physical Disabilities*, 13(2), 179-190.
- National Program for Playground Safety. (1999). *America's playgrounds safety report card*. Cedar Falls: University of Northern Iowa.
- National Research Council. (2003). *Working families and growing kids*. Washington, DC: Author.

- Nicholson, S. (1971). How not to cheat children: The theory of loose parts. *Landscape Architecture*, 62, 30-33.
- Oha, S., & Smulyan, L. (1989). *Collaborative action research*. London, U.K.: Falmer.
- Olds, A. R. (2000). *Child care design guide*. New York: McGraw-Hill.
- Orr, D. W. (1994). *Earth in mind*. Washington, DC: Island Press.
- Parkinson, C. E. (1985). *Where children play: An analysis of interviews about where children aged 5-14 normally play and their preferences for out of school experiences*. London, U.K.: Association for Children's Play and Recreation and Carrick James Market Research.
- Peterson, N. J. (1982). *Developmental variables affecting environmental sensitivity in professional environmental educators*. Master's thesis, Southern Illinois University at Carbondale.
- Piaget, J. (1926). *The language and thought of the child*. Orlando, FL: Harcourt Brace.
- Piaget, J., & Inhelder, B. (1969). *The psychology of the child*. NY: Basic Books.
- Reinhartsen, D. B., Garfinkle, A. N., & Wolery, M. (2002). Engagement with toys in two year old children with autism: Teacher selection versus child choice. *Research & Practice for Persons with Severe Disabilities*, 27(3), 175-187.
- Rivkin, M. S. (1997). The schoolyard habitat movement: What is it and why children need it. *Early Childhood Education Journal*, 25(1), 61-66.
- Rivkin, M. S. (1995). *The great outdoors: Restoring children's right to play outside*. Washington, DC: National Association for the Education of Young Children.
- Rivkin, M. S. (1990). Outdoor play: What happens here? In S. C. Wortham & J. L. Frost (Eds.), *Playgrounds for young children: National survey and perspectives* (pp. 191-214). Reston, VA: American Alliance for Health, Physical Education, Recreation and Dance.
- Rohane, K. P. (1981). Behavior-based design concepts for comprehensive school playgrounds: A review of playground design evolution. *Environmental Design Research Association*, 12, 251-257.
- Sanoff, H. (1995). *Creating environments for young children*. Raleigh: North Carolina State University, School of Design.
- Sigafoos, J., & Littlewood, R. (1999). Communication intervention on the playground: A case study on teaching requesting to a young child with autism. *International Journal of Disability, Development and Education*, 46(3), 421-429.

- Silverstein, S. (1974). Sky seasoning. In S. Silverstein, *Where the sidewalk ends: The poems and drawings of Shel Silverstein* (p. 31). New York: HarperCollins Publishers.
- Smith, P. K., & Connolly, K. (1976). Social and aggressive behavior in preschool children as a function of crowding. *Social Sciences Information*, 16, 601-620.
- Smith, P. K., & Connolly, K. (1980). *The ecology of preschool behavior*. Cambridge, UK: Cambridge University Press.
- Smith, P. K., & Levan, S. (1995). Perceptions and experience of bullying in younger children. *Journal of Educational Psychology*, 65, 489-500.
- Smith, P. K., & Syddall, S. (1978). Play and non-play tutoring in preschool children: Is it play or tutoring which matters? *British Journal of Educational Psychology*, 48, 315-325.
- Stainback, S., & Stainback, W. (1984). Methodological considerations in qualitative research, *The Association for Persons with Severe Handicaps*, 9(4), 296-303.
- Stake, J. (1995). *The art of case study research*. Thousand Oaks, CA: Sage.
- Stone, C. A. (1993). What is missing in the metaphor of scaffolding? In E. A. Forman, N. Minick, & C. A. Stone (Eds.), *Contexts for learning: Sociocultural perspectives in children's development* (pp. 169-183). New York: Oxford University Press.
- Stremmel, A. J. (2002, September). Nurturing professional and personal growth through inquiry, *Young Children*, 62-70.
- Stremmel, A. J., Fu, V. R., & Hill, L. T. (2002). The transformation of self in early childhood teacher education: Connections to the Reggio Emilia approach. In V. R. Fu, A. J. Stremmel, & L. T. Hill (Eds.), *Teaching and learning: Collaborative exploration of the Reggio Emilia approach* (pp. 135-145). Upper Saddle River, NJ: Merrill/Prentice Hall.
- Sutton-Smith, B. (1990). The school playground as a festival. *Children's Environments Quarterly*, 7, 1.
- Takahashi, E., Yoshida, K., Sugimori, H., Miyakawa, M., Izuno, T., Yamagami, T., & Kagamimori, S. (1999). Influence factors on the development of obesity in 3-year-old children based on the Toyama Study. *Preventive Medicine*, 28, 293-296.
- Tanner, T. (1980). Significant life experience: A new research area in environmental education. *Journal of Environmental Education*, 11(4), 20-24.
- Taylor, A. P., & Vlastos, G. (1975). *School zone: Learning environment for children*. Boston: Allyn & Bacon.

- Tertell, E. A., Klein, S. M., & Jewett, J. L. (1998). *When teachers reflect: Journeys toward effective inclusive practice*. Washington, DC: National Association for the Education of Young Children.
- Theemes, T. (1999). *Let's go outside: Designing the early childhood playground*. Ypsilanti, MI: High Scope Press.
- Travers, J. Goodson, B. D., Singer, J. D., & Connell, D. B. (1980). *Research results of the national day care study*. Cambridge, MA: Abt Books.
- Turnbull, A. P., Friesen, B. J., & Ramirez, C. (1998). Participatory action research as a model for conducting family research. *Journal of the Association for Persons with Severe Handicaps*, 23, 178-188.
- Turnbull, A. P., Periera, L., & Blue-Banning, M. J. (1999). Parents' facilitation of friendships between their children with a disability and friends without a disability. *Journal of The Association for Persons with Severe Handicaps*, 24(2), 85-99.
- Turnbull, A., & Turnbull, R. (2001). Self-determination for individuals with significant cognitive disabilities and their families. *The Journal of the Association for Persons with Severe Handicaps*, 23, 5-16.
- U. S. Consumer Product Safety Commission. (1997). *Handbook for public playground safety*. Washington, DC. Retrieved August, 2003 from <http://www.cpsc.gov>.
- Vagnini, C. (2000). Transforming the outdoor environment. Spotlight: Physical development. *Montessori Life*, 12(4), 36-37.
- Vandenberg, B. (1981). Environmental and cognitive factors in social play. *Journal of Experimental Psychology*, 31, 169-175.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher mental processes*. Cambridge, MA: Harvard University Press.
- Wade, C. (1985). Effects of teacher training on teachers and children in playground settings. In J. L. Frost & S. Sunderlin (Eds.), *When children play* (pp.313-318). Wheaton, MD: Association for Childhood Education International.
- Wardle, F. (2003). *Introduction to early childhood education: A multidimensional approach to child-centered care and learning*. Boston: Allyn and Bacon.
- Wells, N. M. (2000). At home with nature: Effects of "greenness" on children's cognitive functioning. *Environment and Behavior*, 32(6), 775-795.
- Wells, N. M., & Evans, G. W. (2003). Nearby nature: A buffer of life stress among rural children. *Environment and Behavior*, 35(3), 311-330.

- Wehmeyer, M. L. (1996a). Self-determination as an educational outcome: Why is it important for children, youth, and adults with disabilities? In D. Sands & M. Wehmeyer (Eds.), *Self-determination across the lifespan: Independence and choice for people with disabilities* (pp. 17-26). Baltimore, MD: Paul Brookes Publishing.
- Wehmeyer, M. L. (1996b). Self-determination for youth with significant cognitive disabilities. In L. E. Powers, G. H. S. Singer, & J. Sowers (Eds.), *On the road to autonomy: Promoting self-competence in children and youth with disabilities* (pp. 115-133). Baltimore, MD: Paul Brookes Publishing.
- Whitney, I., & Smith, P. K. (1993). A survey of the nature and extent of bully/victim problems in junior/middle and secondary schools. *Educational Research*, 35, 3-25.
- Whyte, W. F., Greenwood, D. J., & Lazes, P. (1991). Participatory action research: Through practice to science in social research. In W. F. Whyte (Ed.), *Participatory action research* (pp. 19-55). Newbury Park, CA: Sage.
- Wilson, E. O. (1984). *Biophilia*. Cambridge, MA: Harvard University Press.
- Wilson, E. O. (1992). *The diversity of life*. Cambridge, MA: Harvard University Press.
- Wilson, R. A., Kilmer, S. J., & Knauerhouse, V. (1996). Developing an environmental play space. *Young Children*, 51(6), 56-61.
- Yawkey, T. D. (1990). The role of adults in children's play. In S. C. Wortham & J. L. Frost, (Eds.), *Playgrounds for young children: National survey and perspectives* (pp. 167-190). Reston, VA: American Alliance for Health, Physical Education, Recreation and Dance.
- Yawkey, T. D., Melizzi, M. A., & Jones, K. C. (1982). *A symposium on understanding and promoting imaginative play in early childhood: Part II*. Paper presented at Study Conference of the Association for Childhood Education International, Atlanta, GA.