CREATING PURPOSEFUL AND AESTHETICALLY PLEASING ENVIRONMENTS

FOR YOUNG CHILDREN

A graduate project submitted in partial fulfillment of the requirements

For the degree of Master of Arts in Education,

Educational Psychology

By

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DEDICATION

This thesis project is dedicated to my hard-working parents, Amparo and Virgilio, who sacrificed everything they had already accomplished in Peru, to move to the United States in order to give my brother and me a better life.

Queridos padres, este tesis esta dedicado a ustedes porque gracias a su sacrificio, apoyo, y amor, e podido lograr todo lo que ahora tengo. Papa, gracias por todo tus consejos y enseñanzas que me ofreces cada día. Yo se que a veces bromeaba que te ignoraba y no escuchaba lo que me decias pero creeme que si estaba prestando atencion. Gracias por prepararme cafecito y tecito caliente mientras me mataba escribiendo my tesis en la computadora noche tras noche. Tambien te agradesco por prestar atencion a lo que estoy estudiando e interesarte en el tipo de trabajo que hago. Mama, todas las palabras que existen en el diccionario no serian suficiente para decirte lo mucho que te quiero y te adoro. Todos tus sacrificios desde que llegamos as este pais no han sido en vano. Gracias a todos tus esfuerzos ahora tenemos una vida mejor y nada de que quejarnos. Desde el fondo de mi corazón, te agradesco por todo tu apoyo en la universidad y por siempre aconsejarme que siga adelante con mis estudios. Espero que se sientan orgullos de su bebe.

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Abstract

Creating Purposeful and Aesthetically Pleasing Environments for Young Children

By

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Master of Educational Psychology and Counseling

With more children under the age of five spending time away from home and attending some type of day care, the aesthetics and physical characteristics of classrooms should be an area of early childhood education that demands awareness due to the long-term effects that the physical environment can have on children’s overall development. In the current thesis project, a workshop was developed to help early childhood teachers understand and apply 8 dimensions of the physical qualities of the classroom. The acronym of APPROACH was used, which stands for Age-appropriate, Personalized, Private, Reflective, Open-ended, Autonomy, Challenging, and Home-like. In the 60-
minute workshop, 92 teachers participated (N=92), of whom 29 taught preschool and 33 of whom were infant-toddler teachers. Workshop evaluations revealed that preschool teachers felt they were meeting the key environmental features of age-appropriate, autonomy, and personalization. The infant-toddler teachers, they believed they were meeting the environmental needs of their children through an environment that was age-appropriate, nurturing autonomy, and challenging. The infant-toddler teachers compared to the preschool teachers revealed different kinds of environmental goals. Suggestions for improving the workshop and expanding professional development regarding early childhood environments are included.
CHAPTER ONE

INTRODUCTION

Currently in the United States, approximately 11 million children under the age of five attend some type of child care and nearly 3 million of those children are in multiple child care arrangements so their parents can meet the need for care during traditional and non-traditional working hours. On average, these children spend about 36 hours a week in such settings (www.usa.childcareaware.org). Given the amount of time young children spend away from their homes and enrolled in some type of child care, national and state organizations have addressed this matter by creating standards and guidelines for programs to follow in order to provide children with high-quality physical learning environments that exceed state licensing standards.

The world’s largest organization working on behalf of young children, the National Organization for the Education of Young Children (NAEYC) provides accreditation standards for child care centers looking to ensure the quality of children’s daily experiences. One of the standards for accreditation that child care centers must meet in order to be accredited by NAEYC is the physical environment. Part of the rationale for looking at the characteristics of a center or classroom’s physical environment is because it supports and fosters children’s learning, comfort, health, and safety. Additionally, a program’s quality can be also be improved by creating an accessible and welcoming setting for children, families, and staff (www.naeyc.org).

Along the same context, the California Department of Education created the Curriculum Framework to provide educators working with young children information regarding best practices of high quality education and care. According to the Curriculum
Framework, part of how children develop and acquire social-emotional skills, while in preschool, is through the direct and indirect contact with the physical environment and materials because the physical environment provides children with expectations for behaviors (California Department of Education, 2010). It is noted, “when educators are mindful of the aesthetics, organization, and function of each area in the space, challenging behavior is likely to decrease while constructive, cooperative behavior increases” (California Department of Education, 2010, p. 42). Not only that but when children are presented with an environment that is culturally familiar, inviting, and warm, they feel more comfortable and more willing to learn. Such environments can be achieved by providing children with various centers to choose from, open-ended materials, private spaces, home-like elements and an overall aesthetically pleasing classroom.

Despite information of what state standards and organizations look for in a high-quality learning environment, the question still remains, what do teachers know about key components of setting up a quality environment for young children?

**Statement of Need**

Edwards, Gandini, and Forman (1993) noted that due to lack of funding limitations, American teachers have had to make compromises regarding their classrooms. The unfortunate results can be seen in daycare and schools for young children as their environments display “discouraging physical conditions, especially a lack of natural light and uncluttered space” (p. 136). In addition, Tarr (2004) noted that one of challenges for creating a more home-like and natural environment for children is that “commercialized produced borders, posters, and informational materials have
become part of an accepted visual cultures of North American early childhood classrooms” (p. 1) and teachers wanting to take a different approach might feel pressure from parents or other teachers to decorate their classrooms so they look like a typical classroom. Nevertheless, Kuh (2014) shared that the environment teachers create is within their control and that teachers should still be able to “develop a strong philosophical stance toward environmental design for young children that accommodates policy constraints while at the same time providing space for learning that inspires” (p. 6). To help address these needs, in this thesis project, a workshop was crafted, implemented, and evaluated to uncover what teachers may already know about children’s preschool environments and the areas where they might want or need additional professional development. Ideas and resources of how teachers can begin creating purposeful and aesthetically-pleasing environments were also discussed.

**Purpose of This Graduate Project**

One of the goals of this thesis project is to inform teachers about the direct and indirect effects their classroom’s physical environment can have on children’s development, including social, emotional, cognitive, and even their daily academics intake. The next goal is for participants to assess and reflect upon their own classrooms, whether they are starting to design a new classroom or working in an already pre-existing room, and begin the process of creating purposeful environments for children.

**Key Terms**

In the current study, eight terms were developed (drawn largely from the literature) to define high quality physical environments for children. The acronym for these components is APPROACH. This stands for age-appropriate, personalized, private,
reflective, open-ended, autonomy, challenging, and home-like. Each of these terms is defined below.

**Age-appropriate.** The environment provides children with developmentally appropriate materials that encourage creative and flexible use of such materials (California Department of Education, 2010). In relation to APPROACH, this term also refers to the materials, furniture, and overall physical content of a classroom and making sure they are developmentally appropriate for the ages and stages of development. This includes safety concerns.

**Personalized.** When children are able to personalize the spaces they inhabit, it gives them a sense of environmental control as well as helps them feel competent (Maxwell, 2007). In order to help with those skills, children’s own work should be displayed in meaningful and thoughtful ways and should be visible in most learning centers. This might also include neatly arranged cubbies where personal items may be kept, particularly for new children who may need transition objects.

**Private.** As noted in the Early Childhood Environment Rating Scale-Revised (1998), “the intent for privacy is to give children relief from the pressures of group life” (p. 13). Examples of private spaces can include a loft, spaces that are limited to one or two children, or a small outdoor play house (Harms, Clifford & Cryer, 1998). In terms of APPROACH, private refers to classrooms having clearly defined private areas/nooks meant for small group or solitary play – a space that was designed purely for this purpose, such as a library area with soft furniture or a small loft or recessed area if available.
Reflective. An environment that is amiable and scaffolds children’s learning is responsive, not static. When teachers change some or all variables in the environment to be reflective of what children are currently studying, it keeps children interested in the topic (Inan, 2009). The term reflective refers to the materials found around the classroom and how they should be reflective and representative of children’s current needs/interests. Materials in baskets, posters, books, etc. are aligned with the topic children are currently researching or needing to work on. This often represents projects that can last weeks at a time.

Open-ended. According to the literature, “preparing a variety of learning areas with open-ended materials encourages each child to participate in meaningful play experiences that match their individual temperaments and abilities” (California Department of Education, 2010, p. 43). Materials are best when they are multifunctional and can be used in more than 3 learning centers. Open-ended materials can include sticks, rocks, wooden cubes, containers, buttons, corks, or seashells. Creative use of materials in a variety of ways – including in the dramatic play areas, is important for children’s abstract thinking.

Autonomy. Based on the literature, when areas are “clearly defined with distinct boundaries and obvious pathways, children will use it more appropriately and successfully…and may foster children’s skill of competence and independence” (Inan, 2009, p. 61). In terms of APPROACH, the arrangement of the classroom should allow children to move around the space freely; materials are predominantly children-initiated vs. teacher-guided; and learning centers display materials for children’s use instead of
being used as storage. Autonomy also implies choices for children to decide which areas of the classroom are most engaging to them and fosters their own decision-making skills.

**Challenging.** One of the characteristics of a physical environment that supports children’s social-emotional development is that it needs to be challenging (California Department of Education, 2010). For APPROACH, the term challenging refers to materials found in the environment. Materials that allow for both practice and challenge-level play and engagement help children set new goals for themselves and promote their sense of accomplishment (pride in learning and achieving).

**Home-like.** As stated in Read (2007), “the preschool environment is a space where home-like characteristics of design intermingle with educational design elements within the space” (p. 387). Furthermore, “home-like furnishing and furniture contribute to comfortable dimensions in childcare settings, and children feel like being at home (Inan, 2009). And that is why the last term of APPROACH, home-like, refers to classrooms incorporating familiar or home elements in their environments, such as lamps, rugs, live plants, and wall décor or table runners to give the space a more relatable feel.

**Aesthetics.** When it comes to aesthetics in the classroom, this could include colors, textures, furnishings, or other physical elements. These characteristics should “be designed so that children are comfortable and their energy and attention are focused on the activities. An over stimulating environment is avoided” (California Department of Education, 2010, p. 43). In addition, “aesthetics include yet go beyond, an appreciation for beauty and are considered and “attitude” or sensibility that, like other languages, needs to be nurtured from a young age and must permeate the environment” (Kuh, 2014).
Thesis Preview

In Chapter Two, empirical studies, theoretical essays, and articles that are related to the importance of physical environments will be reviewed. This includes an introductory summary of one of the most widely-used environmental rating scales, ECERS-R; a review of the philosophy of Reggio Emilia and its position on the effects of the environment on children’s learning; and an article regarding how to create inviting environments in challenging spaces. These reviews will be followed by two studies, Sense of Place in Child Care Environments and Designing Classroom Spaces: Making the Most of Time. Three additional empirical studies are also included, one that looks at how effective a shorter version ECERS-R could be, another study that discusses features of classrooms in terms of how they might relate to children’s development of competency, and lastly, a study that sought to find which characteristics make a Reggio-inspired classroom amiable for children to learn in.

In Chapter Three, the methodology of the study will be described, including participants, settings, instruments, as well as the workshop content process and analysis. Chapter Four will reveal the results of the workshop, participants’ evaluations, and additional findings. In the last chapter, Chapter Five, a summary of the project will be discussed, in addition to future workshop adaptations and research.
CHAPTER TWO

LITERATURE REVIEW

Introduction

In this chapter, a brief review of the Early Childhood Environment Rating Scale will be described as a backdrop for a brief overview of the Reggio Emilia philosophy of early education. These two descriptions will be followed by a review of relevant empirical research in regard to the effects that preschool environmental features can have on children with special needs. Having learned more about certain classroom factors that can affect typical and atypical children’s development, the next article will discuss obstacles one might encounter when designing learning spaces in challenging places. This article will be followed by a study conducted by Read (2007), in which the exterior and interior designs of childcare centers were examined in relation to children’s emotional relationships to a place. Next, Tegano, Moran, DeLong, Brickey, and Ramassini (1996) summarize results of three of their previous studies and analyze the effects that small-scale and large-scale learning spaces have on children’s quality of play. To conclude the chapter, three additional empirical research studies will be reviewed in relation to the importance that the aesthetics and design of the physical environment can have on children’s learning and development. This includes a study by Cassidy, Hestenes, Hedge, Hestenes, and Mims (2005) in which the psychometric properties of ECERS-R were examined to find out if a shorter version of the rating scale could be as effective as the original version. Then, a study conducted by Maxwell (2007) in which a rating scale was developed to evaluate physical features of classrooms, will reveal whether or not those features are related to children’s competency development. Lastly,
Inan (2009) will examine a Reggio-Emilia inspired classroom to learn more about its physical characteristics in relation to children’s emergent literacy development.

**Early Childhood Environment Rating Scale**

As one of the ubiquitous rating scales in the field of child development, the Early Childhood Environment Rating Scale (ECERS) was designed to assess process quality in preschool – kindergarten programs, serving children ages 2 – 5 years old (http://ers.fpg.unc.edu/). Process quality is described as the interactions children have within their classroom, with staff, parents, peers, as well as with the materials and space (http://ers.fpg.unc.edu/). ECERS-R (1998), the revised version of ECERS, contains seven subscales: Space and Furnishings, Personal Care Routines, Language-Reasoning, Activities, Interaction, Program Structure, and Parents and Staff. Although all of these features are significant and work together to provide children with a high-quality learning environment, for the purpose of this thesis project, the indicators that are found under the subscale of Space and Furnishing will be discussed.

**Space and Furnishings**

There are eight items found under this subscale; they include: 1) Indoor space, 2) Furniture for routine care, play and learning, 3) Furnishings for relaxation and comfort, 4) Room arrangement for play, 5) Space for privacy, 6) Child-related display, 7) Space for gross motor play, and 8) Gross motor equipment. Items in ECERS-R are rated between 1 (inadequate) and 7 (excellent), and NA (Not Applicable). Each item has a number of indicators that can be marked as Y (Yes) or N (No). Scores of 7 (excellent) are given to items whose indicators were all observed (marked Yes under 7) in the environment while
a rating of 1 (*inadequate*) is given if any indicator under 1 is scored Yes (Harms, Clifford & Cryer, 1998).

According to Hams, Clifford, and Cryer (1998) when it comes to *indoor space*, in order for this item to receive a rating of *excellent* (7), the space must have visible natural light that can be controlled, such as with the use of adjustable blinds or curtains as well as have controlled ventilation i.e. windows that can be opened or fans used by staff. Otherwise, if there is a lack of proper ventilation, light, insufficient space for children’s furnishings, or the space is poorly maintained, it would qualify as *inadequate*. Under the item of *furniture for routine care, play*, a score of *excellent* is given when routine care furniture is convenient to use (cots/mats are stored and easily accessible) and a woodwork bench, sand/water table, or easel is being used. For the item of *furnishings for relaxation and comfort*, examples of what qualifies as *good* (5) to *excellent* (7) include having a cozy area that’s accessible to children and is not used for active play, soft furnishings must be in good and clean repair, and must have many soft and clean toys accessible to children. If no soft furnishing or no soft toys were accessible to children, this item would qualify as *inadequate* (1).

Another factor in the physical environment that ECERS-R focuses on is *room arrangement for play*. If there is no definition between learning centers (science, blocks, library, etc.) or if visual supervision of children is difficult, this item would qualify as *inadequate*. On the other hand, if there are at least five different learning centers organized for children’s independent use and there are additional materials available teachers can use to rotate in the centers, this would qualify as *excellent* (Harms, Clifford & Cryer, 1998). The next item found under Space and Furnishings is *space for privacy*. 
Based on the authors’ description of “space for privacy” the environment should provide children with a space where they can get away from the large group setting – “Isolation from the group as a punishment is not given credit under this item. A place where one or two children can play protected from intrusion by other children, yet be supervised by staff, is considered space for privacy” (Harms, Clifford & Cryer, 1998, p. 11). Teachers, whose classrooms have more than one space available for privacy set up with activities meant for one or two children to explore, would receive a score of excellent. If no private spaces were set up by teachers but if children were to allowed to find or create private spaces for themselves, for example, behind furniture or in a quiet corner of the room, this item would receive a score of minimal (3).

Child-related displays is another factor ECERS-R focuses on. Having no materials displayed for children or having materials that are not age-appropriate for the group of children inhabiting the classroom would be rated as inadequate. Whereas if most of the displays are done by children, displayed at their eye-level, and there is evidence of three-dimensional works of art, such as clay work or carpentry, this item would qualify between good (5) to excellent (7). The last two items under this subscale are related to gross motor play and whether or not these spaces are provided for children in the classroom/center (space for gross motor play, gross motor equipment). Some examples that would qualify as excellent include having an outdoor gross motor space with a variety of surfaces (grass, sand, wood chips), having toilets and water fountains available, tricycles, different sizes of balls, and stationary and portable gross motor equipment that can be moved around (Harms, Clifford & Cryer, 1998).
While ECERS-R provides educators with one way to look at key features of the environment, another useful tool is to examine the Reggio Emilia approach to classroom settings.

The Reggio Emilia Approach

The Reggio Emilia Approach is an educational philosophy that was developed by a former teacher himself, Loris Malaguzzi, and parents from villages around Reggio Emilia in Italy after World War II. Its focus is to promote children’s intellectual development through a systematic focus on symbolic representation, such as movement, drawing, painting, building, sculpting, shadow play, collage-making, dramatic play and music (Edwards, Gandini, Forman, 1995). In the town of Reggio Emilia, education is seen as a communal activity that involves children, parents, and teachers. Over the years, after much effort and political action as well as through careful collaboration with families, the community and educational advisors, Reggio Emilia educators have succeeded at obtaining public funding necessary for early education and local support for their programs (Edwards, Gandini, Forman, 1995).

One of the significant components of the Reggio Emilia philosophy to education is the design and use of the physical environment, which guides and affects children’s experiences in the classroom. In Reggio Emilia schools, the environment is considered the third teacher, following the parents and teachers. Learning spaces in Reggio Emilia schools reflect the culture of the people who live in it, work in it, and learn it. These spaces are so influential that a great deal of attention is paid to the beauty and harmony of their designs beginning with the pleasing and functional furnishings that are often created and put together by teachers and parents themselves. Attention to the selection of colors
on the walls, plenty of sunlight, availability of large windows, and live plants are additional details that make up the aesthetics of each learning space. All of these characteristics are essential elements of Italian culture (Edwards, Gandini, Forman, 1995).

Although the spaces in Reggio Emilia schools are initially designed and organized by teachers, parents, and the community, children themselves play an important role in the beautification of their classrooms by adorning their spaces with gifts or treasures they have found. Teachers collect these items to carefully display around the room and create documentations that let children know that their contributions to the classroom are respected; in return, children feel competent, capable, and valued.

The process of creating such aesthetically pleasing and culturally rich environments for children requires much collaboration, creativity, and intentionality from teachers and parents. Environments in Reggio Emilia centers are ever changing to reflect the current learning and interests that are happening within its walls. In order for this to happen:

The environment has to be flexible. It must undergo frequent modifications by the children and the teachers in order to remain up to date and responsive to their needs to be protagonists in constructing their knowledge. All the things that surround the people in the school and which they use – the objects, the materials, and the structures – are not seen as passive elements, but on the contrary are seen as elements that condition and are conditioned by the actions of children and adults who are active in it. (Edwards, Gandini, Forman, 1995, p. 148)
With an understanding of the importance that the Reggio Emilia philosophy places on classrooms’ physical environments and its ability to reflect children’s skills and interests, another element to consider when designing classrooms are the accommodations educators must make in order to be inclusive of children’s special needs.

**The Third Dimension in Preschools: Preschool Environments and Classroom Designs**

Inan (2009) reviewed the literature on preschool classrooms environmental features and the effects it has on children with special needs. According to Inan (2009), the physical environment along with curriculum can enhance and support a child’s abilities “to do something himself, take care of himself, initiate and complete activities, take control of his own actions and responsibilities communicate and interact with others easily and have better perceptual and motor skills” (p. 55). In this theoretical essay, the physical environment was analyzed based on seven different components: curriculum philosophy and general schedule of activities, modifications, safety-security, areas placement of different areas, furniture/materials, lighting, and textures/colors, and the outdoor area (Inan, 2009). Because children’s needs and interests alter from classroom to classroom, the suggestions provided do not suggest a specific environmental arrangement but instead, they should be adapted to meet the individual needs of each child (Inan, 2009). The review begins by defining the physical environment in terms of being objective and subjective and then discussed the components that a good physical classroom arrangement should include.
Defining the Physical Environment and its Importance in Early Education

Inan (2009) cites Lawton’s (1999) study of environmental taxonomy, where the physical environment was discussed as being objective and subjective. According to Lawton (1999), “the objective physical environment is all that lies outside the skin of the participant, it is inanimate, and may be specified by counting or by measuring in centimeters, grams, or seconds” (as cited in Inan, 2009, p. 56). Examples of this in a classroom could include chairs, windows, rugs, books and toys.

On the other hand, the subjective physical environment is described as the relationship between the physical environment and its residents (Inan, 2009). Lawton (1999) noted, “In the subjective physical environmental realm, an element of the objective physical environment is transformed cognitively or affectively by the participant, endowed with personal meaning of functional significance for the individual” (Inan, 2009, p. 56). One example of this is a child who’s wanting and needing some space to be alone and comfortable. In this case, the teacher might consider the subjective environment in relation to the objective environment and use that knowledge to arrange her classroom accordingly to meet that child’s needs (Inan, 2009).

Planning a thoughtful and supportive environment is as important as planning the curriculum because the environment will support the teacher, children, and the curriculum itself (Inan, 2009). According to Kentucky State Department of Education (1991), if the physical environment is not planned thoughtfully, negative effects may arise. In addition, there are some indicators that point to children becoming frustrated and inattentive if the classrooms they are in do not support their development and growth.
Moreover, “failure to recognize the power of the physical environment over children may lead to problems” (Inan, 2009, p. 56), including hindering or hurting their development.

A thoughtfully designed environment can encourage choices, explorations, and interactions between children and teachers (Inan, 2009). Based on the work of Bailey and Wolery (as cited in Inan, 2009), a good physical arrangement should have the following three components: the space should allow the teacher to observe activities happening in the classroom and minimize distractions across activity areas; the space should be functional, comfortable and safe for children and teachers, and lastly, the design of the space should encourage children to be independent, especially children with sensory and motor development. Inan also presents seven components that are related to physical classroom environments and their importance in the lives of children with special needs beginning with the curriculum philosophy and general schedule of activities.

**Curriculum Philosophy and General Schedule of Activities**

The first component emphasizes the importance of the environment in relation to the planned activities and curriculum of a classroom. The curriculum and philosophy of a preschool are associated to the physical environment i.e. if a school’s philosophy is play-based then the physical environment should reflect and provide materials to support their approach to teaching (Inan, 2009).

Consistent with the current literature review in this chapter, one of the current early childhood education approaches that address the physical environment is the Reggio Emilia approach according to Inan (2009). The Reggio Emilia approach refers to the classroom’s environment as the “third teacher” (Gandini, 2002). The environment in a Reggio classroom is appropriately designed and is like “a coach who helps, guides, and
serves children facilitating the social, cognitive and physical development” (Inan, 2009, p. 58). Gandini (2002) also noted that the Reggio Emilia approach stresses the beauty of its environments. Such spaces are not only beautiful but also personal. They contain paintings, drawings, paper sculptures, and transparent collages, all created by children so they can see their own work around their space.

When thinking about designing learning spaces for children with special needs, it is important to provide them with natural environments because those kinds of “environments imply that children with special needs can learn alongside typically developing peers” (Inan, 2009, p. 59). This can be achieved by allowing children to bring something from home in order to give the classroom a more natural and home-like feeling (Inan, 2009). Shepherd and Eaton’s work (as cited in Inan, 2009), stated that:

Home-like furnishing and furniture contribute to comfortable dimensions in childcare settings, and children feel like being at home. It is also nice to display photographs of children, staff and families, because they also contribute to children’s sense of belonging and ownership. (Inan, 2009, p. 59)

When it comes to the relation between the schedule of activities and the physical environment, Inan stated that an ideal schedule should be inclusive of children’s individual differences, provide varying activity levels, and ensure orderly sequences. In addition, the schedule should also give children advance notice of transitions (2009). One of the ways the physical environment can meet this need is by having teachers post the daily schedule in the classroom. Other ideas include creating a transition chart using pictures, creating an album for children to refer to and recall what routine comes next, and even placing a transition board where children can see and easily follow (Inan, 2009).
Because the focus of this review was the importance of environments in relation to children with special needs, the information provided also discussed keeping in mind each child’s Individualized Education Plan (IEP). When teachers design their classrooms, they not only have to keep in mind the design and set up but they also must follow guidelines and standards required by the nation or state, such as the Individual with Disabilities Education Act Amendments of 1997 (IDEA ’97) (Inan, 2009). Therefore, in order for children with special needs to learn in a comfortable, natural, and home-like environment, additional considerations need to be followed, such as having, “accessibility to parking area, parking signs, exterior routes, exits, doors, elevators, stairs, ramps, alarms, telephones, drinking fountains, restrooms, and operating mechanisms” (Inan, 2009, p. 59). Because children learn in different ways and their needs differ from one another, teachers will likely need to make modifications at some point. The following component, modifications, will provide some examples of how this can be achieved in a classroom setting.

**Modifications**

When designing an environment for children, teachers should consider certain modifications that need to be made in order to meet children’s needs, including children with IEP’s (Inan, 2009). Accommodations should make children’s experiences as comfortable as possible (Inan, 2009). Ideas for accommodations include access ramps for children in wheelchairs to move around the classroom or center, rearranging the space in the classroom, and providing different materials to meet children’s sensory needs. Consequently, “designing the physical environment appropriately plays an important role in creating inclusive settings and meeting the needs and interest of preschoolers with
special needs” (Inan, 2009, p. 60). In addition to making accommodations and modifications in the classroom, child care practitioners should also be mindful of children’s safety and security when inhabiting the spaces. The following component will seek to address some of these issues as well as what can be done.

**Safety and Security**

Safety was also cited as critical for children’s environments. Unsafe situations can be prevented if teachers carefully design an environment for children that do not contain hazardous materials or physical obstacles (Inan, 2009). One way this can be achieved is by providing a consistent environment free of clutter, slippery floors, or rumpled rugs. For children with limited vision or physical limitations, having an environment free of barriers can protect them against injuries (Inan, 2009).

The outside of the classroom or center should also be designed with safety and security in mind. Parking spaces should be accessible to the center so families can drop off and pick up their children easily and safely. Playgrounds are a big part of the outside environment; especially in preschools. Citing data from the US Consumer Product Safety Commission, each year, over 200,000 children end up in hospitals due to injuries associated with playground equipment (Inan, 2009). Much consideration should be given to outdoor spaces when designing a safe place for young children to learn.

**Areas**

Inan (2009) also considered the importance of creating defined learning centers in the classrooms as well as its influence on children’s self-help skills, independence and cognitive development. Creating different interest areas or learning centers in the classroom is important “because they allow children to feel secure, and not overwhelmed
with the complexity of a big room” (Inan, 2009, p. 61). Doing such provides children with opportunities to freely explore their environment and developing a sense of control (Inan, 2009). According to the Kentucky State Department of Education (1991), “different interest areas also enable teachers to provide diverse activities for individualization” (Inan, 2009, p. 61).

When creating areas within the classroom, minimizing clutter can enhance children’s ability to focus on the task at hand (Inan, 2009) thus having an impact on their cognitive skills. This is especially critical for children with attention or learning disorders – a clutter less environment can reduce their distractions and instead could promote learning. Inan (2009) noted that designing a classroom that is clearly defined with learning centers and clear pathways, can help children use it more appropriately and efficiently as well as can foster children’s skill of competence and autonomy (Kentucky State Dept. of Education, 1991; Greenman 1988).

Another factor to keep in mind when creating areas within the classroom is to also create personal or private spaces (Inan, 2009). Shepherd and Eton’s (1997) Creating Environments That Intrigue and Delight Children and Adults, stressed that “when organizing the environment, some spaces should be established where children can work collaboratively with others and some spaces where children can work alone uninterrupted” (Inan, 2009, p. 61). According to Moore (1996), such spaces can include small-scale caves, nooks, or crannies. In private or personal spaces, children are be able to read books, play solitary games, or observe others around them (Inan, 2009).

While designing the areas, it is equally important to pay attention to their size. A space that is too big can lead to reduced attention span and the need for more teacher
supervision (Inan, 2009). Loughlin and Suina (1982) shared that teachers can find themselves nagging, redirecting, calling, refereeing, and reciting the rules of the classroom over and over again (Inan, 2009). In addition, it was found that a space that is too large could lead to noise, confusion, and underuse of the area (Inan, 2009). Not only is it important to create defined learning spaces in the classroom; much attention should also be placed on where these areas are located.

**Placement of Different Areas**

The placement of different areas is equally important as are the actual areas themselves because their relative placement can either support each other or negate its uses if not arranged thoughtfully (Inan, 2009). For example, a book area should be placed near another quiet area, such as a puzzle center because they both are meant to be quiet activities. In order for spaces to work well, “adjacent relationships should be considered” (Inan, 2009, p. 62). Another example could be placing the cots near the resting area or having a sink within reach of a messy center, such as an art center or sensory area (Caples, 1996 as cited in Inan, 2009).

**Furniture/Materials, Lighting, Textures/colors**

Inan (2009) noted that a well thought-out room arrangement support positive experiences for children and their teachers. Prescott’s (1997) work on flexible room arrangement, noted that classrooms should have a balance between carpeted and soft areas and easy to clean floors and furniture. The Kentucky State Dept. of Education (1991) pointed out that the soft-carpeted areas are good for low-activity areas and block centers because they reduce noise and tile or wooden floors are good for messy centers - they encourage louder, more active participation and are easier to clean (Inan, 2009).
Hence, when making “arrangements in the classroom, it’s always important to remember that good classroom arrangement supports the educational objectives and developmental needs of its own inhabitants (Inan, 2009, p. 63). With regard to this component, the following suggestions were given to help teachers design and create classrooms that can help meet children’s needs beginning with the arrangement and placing of furniture, the lighting in the room, and inclusion of various textures and colors around the classroom.

**Furniture and Materials**

Furniture and windows should be placed low enough for children to use them freely. Placing shelves at children’s eye-level allow children to easily select items without any teacher help (Inan, 2009). Some of these items should be specifically designed for children with special needs because they can empower and support their involvement in activities (Inan, 2009). Shepherd and Eaton (1997) stated that low shelves could be used as dividers to separate areas from one another as well as storage space and top shelf displays (Inan, 2009). Moreover, Taylor and Vlastos (1975) noted that by making storage areas accessible to children helps promote their independence, and makes them feel responsible for their own environment (Inan, 2009). The idea of responsibility is particularly important for children in the classroom because they will learn to care for their materials more since they are being trusted with those objects (Inan, 2009).

Accordingly, Hannah (1982) believed that dividers can be “used to order space visually, to provide sound control, and to enhance privacy and behavior control” (Inan, 2009, p. 63).
Lighting

According to Inan (2009) evidence suggests, “daylight destroys mold and bacteria, provides vitamin D, contributes to a sense of positivism, and offers connection with the natural world” (p. 63). That is one of the reasons why classrooms should get plenty of natural light, for the sake of children’s health. Greenman (1988) is cited because fresh air is essential for children’s health and therefore windows should be opened in order for air to circulate the classroom (Inan, 2009). Greenman (1988) is also cited because light can have an influence on children’s moods – increased lighting can brighten and reduced lighting can calm spirits (Inan, 2009). It is advised that the use of fluorescent lights be limited if not avoided, because according to Greenman (1988) fluorescent lights might have a negative effect on hyperactivity (Inan, 2009).

Textures and Colors

Textures are critical in young children’s lives because they are frequently using their sense of touch to learn and explore their physical environment (Inan, 2009). Therefore, a variety of materials, views, and spaces should be included in the classroom so that they stimulate children’s sensations (Inan, 2009). In Caples’s (1996), Some Guidelines for Preschool Design, it is recommend that “a range of textures and bodies, such as finished wood, ceramic, tile, vinyl tile, plaster-smooth and indented textures, tear-resistant cloth and padding, rubber, leather, metal, safety glass, and tackable surfaces” (Inan, 2009, p. 64) be included in the classroom in order for children to experience different surfaces. An example of a textured material could be a rug – Greenman (1988) indicated that one of the advantages of having a rug is that it would allow children to do floor work (Inan, 2009).
With regard to colors in a classroom, Allison (1999, cited in Inan, 2009) believed that colors should be used based on the psychological impact that is expected. For example, bright red colors create excitement, deep greens and purples can set a stabilizing and soothing mood, while yellows are calm, restful, and are easily perceived by children (Inan, 2009). Colors can even be used to divide areas and serve as boundaries (Inan, 2009 as cited in Greenman, 1988).

**Outdoor Area**

The last component of the physical environment that was examined and discussed in Inan’s review was outdoor areas. Outdoor areas are essential for children’s large gross motor development (Inan, 2009). When given a choice, according to Prescott (1994, cited in Inan, 2009), most children would rather be active in the playground instead of doing sit-down activities. And this is why it is important to consider the set up and design of the outdoor area (Inan, 2009). Along with well-designed equipment, soft padding or rubber matting is essential in a playground (Inan, 2009). Teachers should also make sure to have shaded areas around the yard so that children can escape from the heat and sunlight (Inan, 2009). Accordingly, water should also be available as well as easy access to toilets.

**Conclusion**

To conclude, the physical environment plays an important role not only in the lives of typical developing preschool children but also preschoolers with special needs. If planned accordingly, the environment “can add a significant dimension to children’s experience and development” (Inan, 2009, p. 65) as long as it is carefully and purposefully arranged. The physical environment along with the curriculum can help enhance children’s development and their ability to become more independent (Inan,
Despite the focus of this theoretical essay being design suggestions for environments for children with special needs, the information provided could easily be applicable to classrooms serving typical preschoolers as much of the research that was used is based on general design practices used in the field of early childhood education. Despite having these suggestions on how to create environments that are inclusive of children’s special needs, often times the pre-existing layout of a classroom or center can make it challenging for teachers and administrators to move forward with their design plan.

**From Cinder Blocks to Building Blocks: Creating Beautiful Places in Challenging Spaces**

In this article, Smith and Ammentorp (2013) discussed the daily challenges that administrators and teachers encounter and deal with when working at a child care center located in low-income neighborhoods. According to the literature, “light, ventilation, noise, open space, and beauty are important factors for educators to consider when designing early childhood spaces” (Smith & Ammentorp, 2013, p. 9). However, working with such conditions is not always possible, which was the case for the Brooklyn Kindergarten Society (BKS); a non-profit organization founded in 1891 that offers child care services to immigrant children (ages 2 – 5 years) from families with low incomes. BKS preschools are located in housing projects and operate in converted spaces originally designed to serve other purposes, such as a clinic or an apartment.

One of the physical environmental challenges that BKS teachers and administrators face working in buildings that were built over 70 years ago and are in need of repairs i.e. air conditioning and efficient heating systems. Leaky roofs and the noise
levels of various classrooms operating at the same time in the same space were likely to make it quite difficult for children and adults to focus and engage. There was also a lack of a large gross motor area for children to play indoors during colder weather. Despite some of these daily challenges, in order for staff to be effective at delivering a high quality teaching and learning environment, they must “develop a culture of flexibility and creative problem solving” (Smith & Ammentorp, 2013, p. 10).

The administrative team at BSK centers has dealt with their environmental problems by making these challenges and explicit part of their new employee orientation and training in order to better prepare teachers for what they might encounter with the hope that they will be proactive in solving such problems. During staff meetings administrators discuss and stress the importance of working together as a team by engaging in team-building games, allowing teachers to vent about current challenges they are facing, and providing professional workshops as a way to build camaraderie and a sense of trust with one another. By making these resources available to teachers, it gives them the opportunity to stay ahead of possible challenges they will face and helps them be better prepared for the unexpected.

When it comes to designing and creating inviting classrooms with limited funding and in not so child-friendly spaces, BKS teachers use their creativity to figure out how to best meet the children’s needs. To be resourceful, teachers select furniture that serves multiple purposes, such as using the front of a shelf as a writing center and using the back as a part of a different ambiance. In small classroom spaces, shelves are placed back to back or side to side to save space while still providing different learning centers for children to visit. In some cases, the pre-existing layout of a classroom presents a
challenge that teachers have no control over. For example, support beams that once served a different purpose are now being incorporated as part of the classroom environment by attaching a mirror to it or putting a sensory table next to them.

One of the ways teachers have beautified BKS classrooms is through showcasing children’s work around the room. By placing children’s work strategically, teachers have been able to cover metal doors and cinder block walls that can affect inhabitants’ morale and team spirit. According to the authors, “displays beautify the walls and can camouflage imperfections, such as unsightly marks on a wall awaiting a fresh coat of paint” (Smith & Ammentorp, 2013, p. 11). To add to the beautification of each learning space, home-like elements have also been implemented, such as rugs, fabric, plants, and wicker baskets and fish tanks. Working at a center with limited access to financial resources, BKS staff have learned that building relationships with local community and organizations, residents, and colleges has been quite effective because it gives the community the opportunity to come together, plan, and implement ideas to make the centers more beautiful for children.

Although teachers at BKS might not have had all the necessary funding and resources available, they still strive to provide children with beautiful learning spaces designed to meet their developmental needs. The staff often refers to NAEYC’s accreditation standards, in particular those related to curriculum and physical environment, as well as the ECERS rating scale, to make sure they are designing classrooms that are child and family-friendly because they believe that the physical design and décor of their classrooms are significant nonverbal contributors to children’s learning and teachers’ job satisfaction. Even before children and adults enter the
classroom environment, the outside design and entrance to the center itself sends an important nonverbal message to those who are about to inhabit it.

**Sense of Place in Child Care Environments**

For the purpose of this study, sense of place research is discussed in relation to young children’s experiences in a center. According to Read (2007), “place attachment, sense of place, and place identity are concepts used in the environmental psychology literature to describe people’s emotional relationships to place” (p. 387). Read (2007) stated that when discussing children’s preschool environments, we should think of it as a place where home-like characteristics interact with educational design elements. Sense of place, when discussing the built environment, is described as a place that has meaning, provides emotional stability, and a place where one acquires knowledge through sensory experiences. This includes seeing colors and forms and feeling textures and light (Read, 2007). Sense of place can also “provide children with feelings of belonging and stability” (Read, 2007, p. 388).

Parallel to the interior design of a classroom, the outdoor design should also reflect home-like environmental factors such as, “form, materials, landscaping, and variety in design to create an inviting and welcoming entry into the space” (Read, 2007, p. 387). By observing and examining photographs of child care center structures, the current study sought to find out whether or not the exterior design of those centers incorporated characteristics that are associated with children’s emotional relationship towards a place. Prior to discussing findings from the study, Read (2007) reviewed the literature on children’s environmental features related to their feeling of belonging and stability. Three primary concerns were discussed: preschool environment characteristics
related to children’s sense of place (Day, 1990), design features associated to children’s cognitive development (Moore, 1987), and the impact that scale can have on children’s experience of their built environment (Bell, 2006).

Creating Sense of Place in Children’s Environments

Citing the work of Day (1990) a building is meaningful to the soul if it incorporates the following critical design elements: (a) natural materials appropriate for the site; (b) forms and shapes that relate to or contrast with the surroundings; (c) a threshold between the exterior and interior; (d) vegetation, (e) spatial variety, and (f) sunlight (Read, 2007). Likewise the contribution of Moore (1987) relates design features in relation to children’s cognitive development in preschool environments. Moore’s recommendations included having exterior entries that invite parents and children into the space using signage and thresholds; creating entrances that provide lighting and have home-like materials such as bricks, glass, and wood, as well as include natural landscaping areas. All of “these design elements create an environment that is appealing to children and parents” (Read, 2007, p. 388).

The work of Bell (2006) focused on the impact that scale can have on children’s experience of their built environment. Scale is examined in relation to how big or small a place might be. Based on Bell’s research, “scale and alienation are linked, large-scale buildings dwarf people and, thus, make them feel unrecognized as individuals” (Read, 2007, p. 389). A large-scale building is defined as “a building with a roofline above one story or wider than a typical single family dwelling” (p. 389). Bell (2006) also noted that thresholds, roof design, and wall materials in the building have an impact on the
experience of those who enter it. Therefore much thought should be given to the choice in materials being used to build preschools or child care centers (Read, 2007).

Methods

Using research from Day (1990) and Moore (1987) as well as suggestions from Bell (2006), Read (2007) examined the prevalence of exterior design elements of 86 pre-existing preschool environments located in Alabama to find out whether or not they enhanced children’s sense of place. The centers were photographed and then analyzed based on the design elements discussed (incorporating natural materials, having small scale structures, usage of natural light, windows, and landscaping).

Results

After examining the photographs, when it comes to scale, whether a structure had one story (small scale) or a roofline above one story wider than a typical single family dwelling (large scale), Read (2007) found that 46% of structures were small scale and 54% were large-scale. Thresholds (transition area/entrances to a building) of some kind of design were observed at 81% of centers while 19% did not have one. In this case, thresholds were defined as an important part of the entrance of the centers because they are “valuable for the transition experience from the exterior to the interior of the building” (Read, 2007, p. 389). When examining materials used for the façade of the building, 63% used bricks for the walls, 16% wood, and 15% metal siding while stucco was seen in 2% of the facilities. Other centers had a combination of materials including wood/brick 1%, stucco/rock 1%, and stucco/brick 1%. Read (2007) notes that the preschools observed in the study are located in Alabama, where brick is used predominantly on outside structures. In 80% of the centers, windows were evident on the
entry walls while 19% did not have windows and 1% of centers had windows that were
blocked with shades. Nineteen percent of centers did not have signage while 81% of them
did. Results also showed that “some form of landscaping was used at 82% of centers
while 18% of centers did not use landscaping or natural elements” (Read, 2007, p. 390).

**Discussion**

Read’s study of sense of place in child care environments revealed that centers
used a wide range of materials for their exterior design, along with other elements and
light. Another finding revealed that, “more than half of the preschools were large-scale
designs. This finding is troublesome because the literature clearly describes the
importance of small design for children’s spaces” (Read, 2007, p. 390). Possible
explanations for this are that some of the preschools are affiliated with a church or
corporate facility; centers are located within a structure with a mixed-used occupancy;
and some centers were originally built to be mall spaces or store fronts (Read, 2007).
Unfortunately, the changes that can be made to these facilities are limited due to city code
regulations and space requirements.

Although findings show that majority of the structures incorporated brick and
wooden exteriors, a considerable amount of centers used metal siding. These buildings
were located in rural areas (Read, 2007). Read (2007) suggested that in order to create
more welcoming entries to these centers, the amount of metal siding should be reduced in
order to create a threshold area with a focal point to the preschool. Results from the study
also showed that a significant amount of centers did not have windows and this is
troublesome because “visual access to a space is extremely important for adults and
children” (Read, 2007, p. 391). Unfortunately, fixing this issue would be almost
impossible without re-designing the building itself. The literature also emphasized the importance of incorporating natural elements when designing children’s centers in order to enhance their sense of self, however, it was surprising to find several centers without any landscaping or other natural elements (Read, 2007).

In conclusion, the majority of the centers did utilize many elements thought to enhance children’s sense of place by incorporating familiar and home-like elements into their exterior designs. Read (2007) stated, “places are spaces with identity. We know that forms, spaces, and light impact our emotions about a place. Preschool buildings communicate volumes of information to children each day they enter them” (p. 391). Findings from the study provide designers, architects, and childcare providers with relevant information regarding early childhood environments. However, one of the limitations found in the study is that it is limited to centers built and designed in only one state from within the United States. Future research should focus on the cultural influences of design in other countries as well as investigate children’s interpretations of their own environments (Read, 2007). Although the outside design of a center can have an effect on the way children feel, additionally, the actual size of the learning centers and even patterns found inside of a classroom can also aid in children’s learning and behavior.

**Designing Classroom Spaces: Making the Most of Time**

Research has shown that “children’s perception of the space around them is related to the quality of their play behaviors” (Tegano, Moran, DeLong, Brickey & Ramassini, 1996, p. 135). According to Tegano, Moran, DeLong, Brickey, and Ramassini (1996) teachers often seek out ways to make the most out of children’s time in school so
they can expand on their interests and to be able to provide them with more opportunities to get involved in purposeful and meaningful play experiences. Using summaries of three previous studies conducted by the authors, DeLong, Tegano, Moran, Brickey, Morrow, Houser (1994), Brickey (1993), and Ramasinni (1993), the purpose of the current article is to consolidate those results in order to review, discuss, and analyze whether or not children’s play behavior changed when they played in small spaces. In the first project, The Porch, the size of a learning center was altered to feel smaller by using an indoor room divider. For the second project, Big and Little Patterns on the Walls, the pattern on the walls of a center was changed to give the perception that it was a smaller space. And for the third project, Changing the Size of the Block Center, the size of the center was changed to be smaller by reducing the space to half its size.  

**The Porch**

DeLong, Tegano, Moran, Brickey, Morrow and Houser (1994) set up a learning center, just like the ones in the classroom, but they brought in a portable indoor structure, made out of wood and see-through screens; it resembled a small screened-in porch. They placed the porch around a table and chairs that were already inside the classroom. Inside the porch, they set up play dough along with additional open-ended materials (toothpicks, tins, and plastic squares). Teachers were able to supervise this area easily because of the screens that were in place. Some differences were noticed in children’s involvement in this area compared to other areas of the classroom. A team of observers noted that when children were inside the porch, they spent longer periods of time exploring the play dough. Also, their play went from simple to complex faster. Children seemed to move more quickly from exploratory play to complex play or from *functional play* (examining,
pushing, manipulating materials) to constructive and dramatic play (building with, and pretending with the materials) (Tegano, Moran, DeLong, Brickey, & Ramassini, 1996).

In this scenario, children’s cognitive development seemed to be affected positively. By changing just one aspect in the environment, enclosing an already-existing space with the porch to make it look smaller, the quality of children’s play seemed to alter. Children began to build and engage in dramatic play with the play dough sooner, and they played with the materials longer than they did without the porch (Tegano, Moran, DeLong, Brickey, & Ramassini, 1996).

**Big and Little Patterns on the Walls**

For the second project, Brickey (1993) focused on the effect of patterns on children’s behaviors. Instead of changing the size of the space, researchers changed the perception of size by changing the scale of the pattern on the walls. They added a dollhouse and a felt board with felt characters to the center. In one situation, in order to make the children feel small in relation to the space, the walls around the center were covered with a large geometric pattern. Then, to make the children feel large in comparison to their space, the same geometric pattern, only much smaller, was applied to the walls (Tegano, Moran, DeLong, Brickey, & Ramassini, 1996).

When children were playing in the small patterned space, children felt larger, they spent more time playing (building and pretending) and their play went from simple to complex much faster. When children were playing in the large patterned space, the opposite happened. They felt smaller, time perhaps felt like it was passing by slowly, and they engaged in the activity for short periods of time (Tegano, Moran, DeLong, Brickey, & Ramassini, 1996).
Changing the Size of the Block Center

The third project, conducted by Ramassini (1993), focused on spatial density and its effects on children’s cognitive play behaviors. The size of the pre-existing block center was changed and children’s play behaviors were observed over a period of weeks (Tegano, Moran, DeLong, Brickey, & Ramassini, 1996). Children were videotaped every morning as they played in the block center. Every two weeks, the size of the block center was altered. It started with the original size, then the size was reduced to about one half of the original size, and then it went back to its original size. After all the changes occurred, the videotapes were reviewed and children’s play behaviors were analyzed. Observations showed that the 4-year-old children engaged in more constructive and dramatic play while the block center was smaller (Tegano et al. 1996).

Results from all three studies suggested that children’s cognitive development, represented through their natural play behavior, are affected by the classroom’s physical environment and set up. According to the study, “one of the goals of early education is the enhancement of children’s attention span. These studies show us that something as simple as manipulating the space in a classroom may have a profound effect on attention span” (Tegano, Moran, DeLong, Brickey, & Ramassini, 1996, p. 139).

Discussion

Tegano, Moran, DeLong, Brickey, and Ramassini (1996) explained that during functional play, children are exploring an area of play, an object, an idea, while during complex play, children begin to act on the knowledge of functional play to develop a theme for their scenario. Both kinds of play are related to problem solving and both kinds of play are necessary to happen in order for children to gain knowledge of the materials.
In functional play, children ask, “what can this object do?” while in complex play, they are asking, “What can I do with this object?” It is during the complex play phase that children become more involved in the process as they are problem finding and problem solving (Tegano et al. 1996). These kinds of complex play behaviors were observed more often when children played in the smaller spaces, inside the porch, next to the small patterned-wall, and within the reduced block center space.

Results from Tegano, Moran, DeLong, Brickey, and Ramassini’s (1996) summary of studies proved that the reduced scale of the physical environment seems to speed up time because children are moving into complex play faster. It is also believed that small-scale spaces can increase the length of children’s attention span. This is likely to result because when children are enabled “to move into higher-order thinking, the complexity of their play itself maintains attention and, we assume, increases learning. The child’s attention span is longer in the small space” (Tegano et al. 1996, p. 140).

**Suggestions for Future Classroom Environments**

Findings from these three studies were presented to a group of NAEYC teachers, directors, and researchers. The audience came up with future suggestions for classroom environment designs as well as how they were going to apply these research findings to their own classrooms. Ideas ranged from building a loft, creating nooks and crannies to using a closet or lowering the ceiling. In addition, they also suggested changing the size of the patterns of the walls, using screening and the corners of playgrounds as well as crating indoor and outdoor temporary tents and using large boxes (Tegano, Moran, Delong, Brickey & Ramassini, 1996). Many of these ideas are used by teachers everyday so they might not seem new. However, what is new is the importance that these spaces
have on children’s learning. In this case, we learned that small-scale spaces have an effect on children’s cognitive development; this includes their play behavior, problem solving skills, and attention span (Tegano, Moran, Delong, Brickey, & Ramassini, 1996).

Moreover, “it seems that becoming aware of how space affects children may help early childhood educators to maximize children’s time, enhance children’s attention span, and encourage more complex play behavior and problem-solving strategies in the young children in our classrooms” (Tegano et al., 1996, p. 141). Teachers can use this information to rethink the way they design their classrooms in order to provide children with small-scale spaces, personal places, and in turn, affect their cognitive development, positively. In order for teachers to know whether or not they are designing high quality classrooms that will meet children’s developmental needs, there are various assessment tools that can aid in this process – one of them being ECERS-R, which has an area that specifically focuses on the characteristics of the physical environment. But could a shorter version of ECERS-R be as effective in measuring quality as the long version?

Measurement of Quality in Preschool Child Care Classrooms: An Exploratory and Confirmatory Factor Analysis of the Early Childhood Environment Rating Scale-Revised

According to Cassidy, Hestenes, Hedge, Hestenes, and Mims (2005), the Early Childhood Environment Rating Scale-Revised (ECERS-R) (Harms, Clifford & Cryer, 1998) is conceivably the most widely used environment rating scale in the field of early childhood development when it comes to measuring global quality. Because of its widely national and international use in classroom environments, the current study sought to investigate the psychometric properties of the ECERS-R by using both, exploratory and
confirmatory analyses to systematically examine the items in ECERS-R and find out whether or not a shorter version of ECERS-R can be as effective as the original version (Cassidy et al., 2005).

Methods

Data from 1,313 preschool classrooms in child care centers across North Carolina from 1999 to 2002 was collected. These assessments were part of the North Carolina’s Star Rated License process, in which child care centers in that state can earn from one to five stars depending on results from three domains: program standards, staff education levels, and compliance history (Cassidy, Hestenes, Hedge, Hestenes & Mims, 2005). For centers looking to achieve higher star ratings, a portion of the program standards required the completion of one of the global quality assessments, Early Childhood Environment Rating Scale-Revised, Infant and Toddler Environment Rating Scale, Infant and Toddler Environment Rating Scale-Revised, Family Day Care Rating Scale, or School-Age Care Environment Rating Scale. Although programs striving to reach a higher star rating were part of the assessment, results from the study revealed a wide range of scores that were still normally distributed (Cassidy, Hestenes, Hedge, Hestenes & Mims, 2005).

Assessors that conducted the observations for the current study were trained staff members of the North Carolina Rated License Assessment Project. These assessors were trained to have at least an 85% agreement level while maintaining a reliability level of 85%-90%. These highly trained assessors conducted a 3-4 hour observation session, using ECERS-R, in each classroom. In addition, once the observation was over, teachers were interviewed for about 30 minutes to clarify demographic information and complete items that were not observed during the initial session. Teachers were asked about group
size, ratios, and their level of education (Cassidy, Hestenes, Hedge, Hestenes & Mims, 2005).

To determine how many aspects of quality were being measured by ECERS-R, the sample collected was split in half through a random selection process. During the preliminary analyses, centers with missing data were removed from the database, resulting in a total sample of 958 classrooms with complete data. Exploratory analyses were conducted with the first data set (\(N=486\)) and confirmatory analyses on the second data set (\(N=472\)) (Cassidy, Hestenes, Hedge, Hestenes & Mims, 2005).

**Results**

When it came to exploratory factor analysis, three different techniques were used to determine the best factor solution of ECERS-R: 1) Principal component extraction method with varimax rotation, 2) Principal factors extraction method with varimax rotation, and 3) A series of maximum likelihood factor analyses that included chi-squares analyses. As a result of the exploratory factor analyses conducted on the first group (\(N=486\)), the subscales measured by ECERS-R were divided based on the aspects of quality they are said to assess. Three factors were created: Factor 1: Activities/Materials, factor 2: Language/Interactions, and factor 3: Safety (Cassidy, Hestenes, Hedge, Hestenes & Mims, 2005). Results from all three exploratory factor analyses revealed a “strong consistency across the number of factors and the items within each factor, especially between the principal factor analyses and the maximum likelihood analyses” (Cassidy, Hestenes, Hedge, Hestenes & Mims, 2005, p. 352).

For the confirmatory factor analysis portion of the study, three types of analyses were used to evaluate the seven-factor model (the original seven subscales assessed by
ECERS-R), as well as the two-factor (activities/materials, and language/interaction) and three-factor models (activities/materials, language/interaction, and safety) found in the exploratory analyses. These analyses were applied to the second random sample (N=472). One of the findings from the confirmatory factor analyses revealed that the two- or three-factor models better represented data than the original seven-factor model. Another finding suggested that one of the potential factors; factor three (safety) was not as strongly related to the overall global measure of quality perhaps due to the fact that it only consisted of two items (space for gross motor and safety practices). Although “the safety of equipment and surrounding space indoors and outdoors is a critical factor in classroom settings, these two items because of their dependence and focus on a particular safety practice, do not represent a separate construct of quality” (Cassidy, Hestenes, Hedge, Hestenes & Mims, 2005, p. 355). Based on this result, factor three (safety) was discarded and it was concluded that ECERS-R measured two distinct aspects of quality, physical environment (activities/materials), which had nine items, and relationships (language/interaction), which had seven items and both accounted for 69% of the variance (Cassidy, Hestenes, Hedge, Hestenes, & Mims, 2005).

Discussion

As a reminder, the purpose of this study was to examine the psychometrics of quality being assessed by ECERS-R and to prove whether or not a shorter version of the rating scale could be as effective as the full version. By using exploratory and confirmatory analyses to systematically examine the items in the original scale, results indicated that indeed, a shorter version containing fewer items could provide a fairly good alternative for scores on the full scale. In addition, the current study was able to
identify two different aspects of quality, physical environment and relationships, being assessed by ECERS-R. Furthermore, “the two factor-based scales confirmed in this study could prove advantageous in future research conducted on the quality of care and education settings” (Cassidy, Hestenes, Hedge, Hestenes & Mims, 2005, p. 358) because it provides practitioners with a shorter assessment method which could be done in less time.

One of the results during the initial stages of this study revealed that the averages of the items in the Personal Care Routines subscales as well as the Space and Furnishing subscales fell below the categorization of “good.” This finding was based on results from all 1,313 centers mentioned at the beginning of the study. Although such finding became an insignificant part of the study, such results imply that efforts should be made to focus on the quality of health and safety practices, materials, activities, and the physical environment of children’s classrooms. Nevertheless, even when using a shorter version, the current study corroborates the validity and reliability of one of the most frequently used measures of global quality in childcare centers around the world. Given the importance of the physical environment, the next study discusses seven characteristics classrooms should include and whether or not they aid in the development of children’s competency skills.

**Competency in Child Care Settings: The Role of the Physical Environment**

According to research, children who attend high quality centers achieve a higher level of competence than those who do not as measured by higher levels of cognitive development (Maxwell, 2007). The National Institute of Child Health and Human Development (2002) defines high quality childcare centers as having “experienced and
well-trained teachers and/or providers, appropriate group sizes, and safe and responsive physical environments” (Maxwell, 2007, p. 230).

The purpose of the current study was twofold. First, to evaluate and understand more about the qualities and characteristics of an environment that promotes children’s competence and learning by creating an instrument that rates the physical characteristics of childcare settings based on attributes that are believed to be related to children’s competency. Second, the researcher set out to learn if classrooms receiving higher ratings in this scale actually promote higher levels of competence in children compared to lower scoring classrooms (Maxwell, 2007). Classrooms from different childcare centers were rated using the rating scale but due to budget constraints only 4 out of the initial 48 centers were used for data collection. The study describes attributes linked to childcare settings that are responsive to children’s needs and support the development of competence: control, privacy, and complexity, exploration, restoration, personalization, and eligibility (Maxwell, 2007) and then by using these attributes, a rating scale for the current study is offered. In order to gain a better understanding of the items used to create the scale each characteristic will be defined below.

**Defining Characteristics of the Physical Environment**

When discussing control in a child’s environment, making sure there are plenty of materials for them to choose from, provides children with a level of control by allowing them to pick their own challenges. Control is also related to the placement of furniture and equipment within the classroom (Maxwell, 2007). Being mindful of how a room is arranged and where learning centers are placed can reduce behavioral constraints in children by allowing them to have control over their environment.
Privacy is another characteristic attributed to a responsive physical environment for young children. Because young children are learning how to interact with others as well as how to regulate their own behaviors, it is important for childcare places to provide children with spaces where they can be alone and with others (Maxwell, 2007). Citing Wachs and Gruen (1982), “child care spaces should have some dedicated private spaces – a ‘stimulus shelters’ – but functional private spaces can also provide children with places to be alone” (Maxwell, 2007, p. 231). A functional private space can be described as a place a child builds as a temporary private space or an already existing space, such as a cubbie (Maxwell, 2007).

If children are to gain a sense of competency and mastery, it is critical to provide them with a certain level of complexity in their environment (Maxwell, 2007). Characteristics related to a complex environment include having a variety of toys and materials available in different colors, shape of the spaces, and change in floor level, ceiling height, nonabrasive textures, amount of light, floor covering, and displays around the classroom. Having little to no variety in the space can lead children to boredom while on the other hand too much variety can overwhelm children, causing them to be less focused or less engaged with the materials or activities (Maxwell, 2007).

Another way for children to develop competency is by providing them with an environment that encourages exploration and discovery (Maxwell, 2007). It is important to remember, “coherent circulation paths in the child care classroom are one of the physical characteristics that encourage exploration and discovery. Such paths encourage children to move through the space to explore play opportunities without interrupting ongoing activities” (Maxwell, 2007, p. 232). Play areas or learning centers in a classroom
should be adjacent to areas that support the intended play/activity. For example, a learning center that requires messy materials should be adjacent to a sink so that children can wash their hands as needed and without interrupting the exploration of their activity (Maxwell, 2007).

Concerning restoration, “opportunities for restoration in the environment also contribute to the development of competency. Children become susceptible to cognitive fatigue in an overly complex setting” (Maxwell, 2007, p. 232). Children’s learning and development of competency are compromised when cognitive fatigue occurs. In order to avoid such scenarios, centers need to provide children with experiences that do not require much focused attention, such as bird watching or observing fish swimming in a tank. These activities still keep children busy but do not require much cognitive effort. Once the child is feeling restored, he is able to once again engage in active play (Maxwell, 2007).

When discussing personalization in relation to the physical environment of a classroom, it is important for children to have the ability to personalize their space so they can have a sense of environmental control (Maxwell, 2007). One way personalization can be achieved is by providing furniture and play materials that children can easily move around or rearrange so that it meets their needs during play. Children feel more competent when they are able to exercise their ability to control their level of play by personalizing the space they are exploring (Maxwell, 2007).

The last characteristic of a physical environment that helps promote children’s competence is eligibility. A legible environment aids children better understand how to use the space. A legible environment is clear, defined, and children can move freely and
easily in the space (Maxwell, 2007). Some physical characteristics related to legibility include, “clear circulation paths, recognizable boundaries, space markers (landmarks in the classroom), and appropriately placed displays. It is easier to make decisions about how to use a space when the environment is legible” (Maxwell, 2007, p. 233).

Ultimately, when a classroom is legible, children will be better able to use their space and feel more competent in it.

Maxwell (2007) examined the connection between certain physical attributes of childcare classrooms to preschool children’s competency. It was assumed that classrooms which included physical characteristics of the attributes control, privacy, complexity, personalization, exploration, restoration, and legibility would promote a higher degree of competency in children than classrooms containing fewer of those characteristics. The attributes listed above were used to create the rating scale for this study. Competency levels were assessed by, first, using a measure of cognitive abilities with children as well as a self-evaluation assessment of social and achievement abilities.

**Methods**

The scale developed for this study measured how well a child care classroom incorporated attributes related to children’s development of competency. The rating scale had 37 items and 7 categories: social spaces, boundaries, privacy, personalization, complexity, scale, and adjacency (Maxwell, 2007). For Maxwell’s (2007) study, it was decided that 3 levels of assessment were plenty and each level was assigned criteria. Items received scores of excellent (0), adequate (1), or inadequate (2). Level-specific criteria were provided for each rating i.e. under social spaces, criteria included: spaces for
groups of children to play together, group reading and storytelling area, group play areas, and sufficient space and availability of space (Maxwell, 2007).

Ninety-eight classrooms in 48 different childcare centers were rated using the scale. Four raters received training at a university-based childcare setting – interrater reliability was calculated using Ebel = .85 (Guildford, 1954 as cited in Maxwell, 2007). One rater was assigned to each center. Centers were located in suburban areas, and small to medium urban communities. Based on data from those centers, the rating scale had a reliability score of alpha = .81. Based on that, the total scores on the rating scale were used in all subsequent analyses (Maxwell, 2007). If a classroom’s total score equaled 0, then that meant that all items were rated as excellent. A classroom with a total score of 37 signified that all items were rated as adequate; and a score of 74 indicated all items were scored as inadequate (Maxwell, 2007).

Participants

Due to budget constraints, only 4 out of the initial 48 centers were used for data collection. These centers were selected based on two criteria: one, the center had more than one preschool classroom, and two, classrooms had scores different enough from each other so that each one of them fell under the excellent, adequate, or inadequate categories. A total of eight classrooms, two from each center, participated. Seventy-nine children were a part of the study; 53% of them were girls. The mean of the children’s age was 52.7 months (4 years, 5 months). The classroom room size ranged from 9 to 19 children, with a mean of 15. Each classroom had at least two teachers. All head teachers had a master’s degree in early childhood education and their years of experience had a mean of 2.9 years. Teachers in the study were responsible for physical arrangement and
displays of their classrooms. Based on parents’ descriptions, the sample was predominantly Caucasian. Mothers’ median and mean educational level was a college degree. The sample’s range included those who were high school graduates to those with a graduate school degree.

Procedure

Once the researchers narrowed the centers down to four, one rater assessed the classrooms again to ensure that they were placed in the correct category. Due to the small sample size, the three rating categories were later collapsed into two for purposes of further analysis; *adequate and above* (1) and *below adequate* (2). Four classrooms were rated as excellent and adequate, which placed them in the first category and the other four classrooms had scores of inadequate, which placed them in the second category (Maxwell, 2007).

Harley and Pike’s (1984) Pictorial Scale of Perceived Competence and Social Acceptance for Young Children was used to measure children’s self-evaluation of competency (Maxwell, 2007). To measure children’s cognitive competency, Maxwell (2007) relied on McCarthy’s Scales of Children’s Abilities (McCarthy, 1972). Both measures were conducted and administered by two trained research assistants who had no previous knowledge of the classrooms’ rating scores or the children they were assessing. Children were tested in their own childcare centers but in a separate room away from their own. Once the pilot test was conducted, six items were eliminated from the 24-item Pictorial Scale because preschool children had a challenging time understanding some of the items (Maxwell, 2007). Each assessment method was conducted to each child at separate times. The classrooms were tested again, halfway through the testing period, to
make sure they were still in their original category. Once testing was completed, “a telephone survey was conducted to obtain family background data from the parents of the participating children. All participating families had signed consent forms in accordance with federal standards for protection of human participants” (Maxwell, 2007, p. 237). Only those families who gave their consent were included in the study.

The Pictorial Scale of Perceived Competence and Social Acceptance for Young Children was used to investigate any relation between the classroom’s physical environment and children’s assessment of their own competency. This measure asked children about their friends; their group-play experiences, skills during outdoor activities, and doing well academic activities (Maxwell, 2007). Pictures of a child doing a particular activity are shown to children. Then, “the researcher asks the child if he or she is most like the child who, for example, gets gold stars for good work or like the child who does not get gold stars” (Maxwell, 2007, p. 237). Once the child picked between both choices, he or she was asked if this answer is sometimes true or most of the time true.

**Results**

According to analyses of the McCarthy’s Scales and the Pictorial Scale of Perceived Competence and Social Acceptance, girls perceived themselves to be more competent than boys. A linear regression model that was also used to control mothers’ education level and teachers’ experience, indicated that children who were in classrooms rated as adequate or above had higher scores on McCarthy’s Scales compared to children in classrooms rated as inadequate (Maxwell, 2007). In addition, “higher scores on McCarthy’s Scales were indicated for the classrooms rated as adequate or above for the 3-year-olds’ classrooms but not for the 4-year olds’ classroom” (Maxwell, 2007, p. 238).
When analyzing results from the Pictorial Scale of Perceived Competence and Social Acceptance, no main effects for classroom ratings were found. Nevertheless, a stepwise regression analysis equation that included each subscales of the classroom rating scale “and controlled for teacher experience, mother’s educational level, and classroom type (3-year-olds’ or 4-year-olds’s classroom) indicates a main effect of the adjacency subscale and children’s perceived competency” (Maxwell, 2007, p. 239). This measure revealed higher scores for children whose classrooms were rated as adequate or above than peers in classrooms rated as inadequate on this subscale (Maxwell, 2007).

**Discussion**

Results from the current study revealed a relation between preschool children’s general cognitive competence and the physical environment but only for children in the classroom for 3-year olds and not the classrooms for 4-year olds. According to the study, this may be because “perhaps the adequacy of the physical setting is particularly critical for younger preschool children because they are more sensitive to the physical qualities of the setting. This could occur because they have less experience in child care settings” (Maxwell, 2007, p. 240).

Although previous research implies that teacher education and experience are positively related to quality childcare, particularly cognitive and language development, the current study found no significant relation between teacher experience and children’s scores. In fact, “teacher education (for the head teacher) did not vary: All had master’s degrees…there was no significant relation between teacher experience and the scores on the cognitive competency measure” (p. 239). For the most part, research that identifies teacher training as a significant factor of quality childcare does not generally assess the
physical environment in great detail (Maxwell, 2007). Maxwell (2007) believed that physical characteristics and attributes of an early childhood classroom are a critical part of a quality childcare program as much as teacher experience and education. Therefore, when assessing the quality of a childcare program, the physical environment should be examined and assessed more extensively in order to help identify factors of the environment that may have an effect on children’s cognitive and competency development.

When discussing results of the physical environment in relation to children’s competency level, it was found that the quality of the classroom’s physical environment could potentially play a role in how well children perform. For example, for McCarthy’s assessment, children were asked to complete activities using information they know about their physical environment i.e. name characteristics of a glass, rock, or water. If children’s daily environments do not provide them with such experiences, they will not be able to answer this question correctly (Maxwell, 2007). In addition, another finding in the study related to physical environment suggests, “appropriate adjacencies in child care classrooms may be especially important in helping preschool children to feel competent” (Maxwell, 2007, p. 241). That is because appropriate adjacencies make finding materials easy and they ensure those materials are nearby to facilitate children’s play. Therefore, “if children have the opportunity to be fully engaged without distractions, they are more likely to complete their tasks. This may give them a sense of accomplishment and hence a feeling of competence” (Maxwell, 2007, p. 241).
Conclusions

Although the current study had some limitations, among them, the small sample size and the pre-existing layout of the classrooms, results from the study still provided insight as to how the physical environment contributes to preschool children’s development of competency. The rating scale that was designed for the study was not designed to assess all aspects of an early childhood day care program; instead, its focus was to assess the physical environment in more details that are frequently not assessed by other tools. Moreover, even though teacher characteristics did not seem potent, Maxwell does offer an interesting array of considerations for the physical environment. Specifically, it adds important contributions to the field of classroom assessments. Results from Maxwell’s study showed a positive relation between children’s competency and the physical environment and it points to the need for including in depth assessment of the physical environment for studies looking to determine factors of quality child care programs. To address the topic of which specific elements provide children with high quality learning settings, the last study explores a Reggio Emilia-inspired classroom to learn more about its effectiveness in designing environments that invite, provoke, and inspire learning.

Understanding Features of Amiable Environment That Can Nourish Emergent Literacy Skills of Preschoolers

Inan (2009), examined the effects of a literacy-rich environment on children’s literacy skills, she stated, “classroom environments of preschools, where children from three to five attend, are critical contexts in children’s development and education” (p. 2,510). In addition, “the impact of classroom environments continues to play an
important role in strengthening children’s education and foundational development” (Inan, 2009, p. 2,510). According to the literature, studies in the United States have suggested that educators are becoming more cognizant of creating high-quality environments for young children because they are now more aware about the effects that physical environments could have on children’s learning and development. Furthermore, if children’s environments do not provide sufficient stimuli to its inhabitants, it could be detrimental to their overall development (Inan, 2009). As children spend increasingly more time in preschool, the quality of classrooms’ environments is extremely critical (Inan, 2009). For example, preschoolers “can construct their knowledge about literacy better in an environment where they can do some practices, observations, explorations, and experiments with literacy” (Inan, 2009, p. 2,510). This means that centers that offer materials, tools, or toys that are related to language or writing, can enrich young children’s emergent literacy development. Because of the connection between literacy mastery and literacy-enriched classroom environments, the current qualitative study focused and examined features of a Reggio-Emilia inspired classroom in relation to preschool literacy education to find out how literacy was being included in the environment (Inan, 2009).

Methods

Spradley’s Grand Tour and Taxonomic Domain Analysis as well as an ethnographic method, Spradley’s Developmental Research Sequence (D.R.S) Method, were used to gain data for the study (Inan, 2009). Data collection consisted of two phases: Spradley’s Grand Tour was used to gather information about what the physical environment looked like and Spradley’s taxonomy was used to understand how the
environment accommodates group and individuals (Inan, 2009). Once data was collected, it was analyzed from “an interpretive perspective using a cultural lens, namely Spradley’s D.R.S. Method. Spradley’s D.R.S. Method (1980) helped to set the cultural tone, which is the heart of ethnography” (Inan, 2009, p. 2,512). Spradley’s D.R.S. method provided researchers with a “systematic way to reveal the embeddedness of literacy throughout the culture of the classroom. His Grand Tour and semantic relations system (Taxonomic Domain Analysis) reflected the role of the physical environment in constructing literacy in the preschool classroom” (Inan, 2009, p. 2,512).

Participants

This study involved a preschool classroom setting that was part of a lab school in the United States of America. This lab school, established in 1923, was inspired by the Reggio Emila philosophy. The classroom had 18 preschoolers, one program coordinator, two lead teachers and eight student teachers, and the participant researcher (Inan, 2009). The classroom had eight girls and ten boys and their ages ranged from 3 to 5 years old. Out of the 18 children, six were African-American, ten Caucasian, and two Asian. The children’s families’ religious beliefs included Atheist, Jewish, Christian, and Muslim (Inan, 2009). The teachers participating in the study were White females and so was the Program Coordinator. Student teachers who were present during the study were receiving training from the lead teachers.

Procedure

The researcher was a White, female outsider studying early childhood education. An ethnographic approach to data collecting was utilized. The researcher “identified
herself as a participant observer who was taking part in the research context by conducting direct observations and informal interview, collecting documents/artifacts, and taking field notes” (Inan, 2009, p. 2,512). Data collection took over one year to complete.

Results

Findings revealed that this Reggio Emilia inspired preschool classroom presented children with a literacy-rich environment. In this classroom, the environment was clearly the third teacher as much of the children’s actual literacy works were visibly displayed on the walls, shelves, and up on the ceiling of the environment as well as a variety of writing tools and materials could also be seen spread around the classroom. Children who were part of the study “were exposed to challenging situations through the carefully arranged environment, free to play and explore their surroundings with joy, and provided the security and enrichment of adult guidance” (Inan, 2009, p. 2,513). Features of this Reggio-Emilia inspired classroom also revealed nine cultural domains that were discussed in more detail.

Domain 1 – The Environment is Open and Encourages Mobility and Continuity So That Literacy Occurs Across Spaces and Time

In almost every area of the classroom, literacy-related materials, such as books and writing tools could be found, including in the outdoor area, quiet room, and in the kitchen (Inan, 2009). Not only were literacy-related materials available around the classroom but teachers also “arranged the places in the preschool classroom carefully and thoughtfully to provoke children’s inquire and interest and to support their understanding of literacy” (Inan, 2009, p. 2,513). In addition, “when the teachers foresaw learning possibilities for
the preschoolers, they supported preschoolers’ literacy development at different places, at different times during the day and over days and weeks” (p. 2,513).

**Domain 2 – Environment Is Multifunctional Supporting an Integrated Curriculum:**

Findings also showed that literacy-related materials were interconnected with other curriculum areas, including math, art, and social sciences (Inan, 2009). These curriculum activities were visible around the classroom, just like emergent literacy activities. It was found that “the places within the classroom were multifunctional and promoted an integrated curriculum, and this integrated curriculum promoted the multifunctionality of the classroom spaces” (Inan, 2009, p. 2,514).

**Domain 3 – The Environment is Provocative, Challenging and Informative**

In this Reggio Emilia inspired classroom, teachers invited children to explore literacy and print activities in a non-traditional, boring way. They wanted children to not only explore the activities but to engage in deeper and longer experiences by allowing long periods of time to work with print (Inan, 2009). Such experiences included, writing birthday notes, looking at weather maps, tracing activities, story-telling, and using recipes.

**Domain 4 – The Environment is Responsive, Not Static**

Inan (2009) noted that teachers set up the classroom based on children’s emergent interests, which included one, two or more topics at a time. When children were interested in exploring colors and fireworks during Independence Day, the environment was enriched with literacy-related materials, such as books and props that correlated with the topic. On another day, an overhead projector was set up in the studio along with props because
children were curious about shadows. Findings showed that “changing some variables or completely changing the subject helped the preschoolers learn more things related to literacy and have quality literacy experiences” (Inan, 2009, p. 2,515).

**Domain 5 – Essential Qualities of the Environment Is Socially Constructed and Co-created by Teachers and Children**

Decisions on what set ups and materials should be next were based on teachers’ observations and knowledge of children’s emerging interests. Through careful documentation, teachers created the curriculum and selected materials and tools in order to shape the environment so that it met preschoolers’ needs. Teachers provoked children’s interest in literacy by combining them with a topic children were interested in. For example, the children were “interested in Bob the Builder, a cartoon character who builds houses, and the teachers enriched the environment with related literacy materials and props and gave the preschoolers time and an opportunity to work on their interest” (Inan, 2009, p. 2,515). Materials were carefully selected and much attention was given to the actual set up and presentation of the materials to provoke and create learning possibilities for the children (Inan, 2009).

**Domain 6 – The Environment Encourages Self-initiative and Hands-on Experiences in Literacy**

The environment encouraged hands-on experiences by providing children with various ways to manipulate print and explore language. Examples included, writing happy birthday letters, looking at weather maps, reading books, and using tape-recorders to tell stories as well as having a message box for children to write notes to each other.
Domain 7 – The Environment Is a Reflection of Real Life – Life Outside the Classroom

Children’s real-life experiences were a part of the every day curriculum making the curriculum (including literacy activities) relevant and appealing to children. In this domain, it was found that the environment was a reflection of real life (Inan, 2009). Teachers included a variety of real-life materials and set them up around the centers. Teachers shared that the inclusion of real-life materials provided children with realistic scenarios they can play in, such as pretending to be in a restaurant and taking orders or using a recipe book to make cupcakes (Inan, 2009). In this case, “the integration of real life experiences into literacy works made them more natural than if literacy skills were used in a typical classroom context where a teacher give students direct instruction on literacy” (Inan 2009, p. 2,516).

Domain 8 – The Environment Is Set up Both for Group and Individual Work/Play

Spaces in the classroom were organized to foster social interactions between the materials and children. Spaces in the classroom also provided children with areas where they could be alone or engage in group work (Inan, 2009). For example, the classroom had a library area for individual or small group experiences as well as bigger areas where a large group of children could play together.

Domain 9 – The Environment Provides Comfortable, Safe, and Secure Places Enriched with Adult Guidance

Teachers in this Reggio-Eimilia inspired classroom “created a literacy-rich context of social-constructivist education where children’s knowledge of print and literacy skills could be nourished” (Inan, 2009, p. 2,516). The context of literacy activities that teachers
created within the classroom encouraged children to actively engage in reading and writing inquiries by providing them with a space where they could learn about print based on their emerging interests. In addition, teachers “provided preschoolers scaffolding, time and a comfortable and safe space to work on literacy” (Inan, 2009, p. 2,516).

**Discussion**

The aim of the current study was to examine how the context of a Reggio-Emilia inspired classroom affected children’s literacy development. Findings from the qualitative study indicated that the preschool classroom environment was literacy-friendly and supported children’s interests in literacy activities by combining topics of interest, such as Bob the Builder and Independence Day, with reading and writing experiences (Inan, 2009). Although teachers’ observations and knowledge of children’s interests was necessary in order to set up the environment, ultimately, the environment served as the third teacher. Without the necessary materials, inviting set ups, and thoughtfully designed spaces for learning, perhaps children’s development of literacy would not have occurred in such abundance and teachers would not have been able to scaffold their learning because children need hands-on experiences – they learn about the world through manipulation of objects and stimulation of their senses. Furthermore, a lack of or limited amount of resources and adequate learning environments restricts teachers’ activities and curriculum. Future research on preschool environments and its effect on early academics should examine classrooms using the nine domains that were found in this study as a scale to reveal whether or not classrooms that contain these characteristics have an effect on children’s early math and science inquiries.
Learning how to design and create purposeful and aesthetically pleasing environments for young children is critical because such environments are a major component of a high quality education. As we have learned from ECERS-R as well as from the Reggio Emilia philosophy, high quality and meaningful environments must include certain characteristics in order to meet children’s physical, emotional, verbal, and cognitive needs. Even with an understanding of which elements contribute to a high quality learning environment, educators might still face obstacles that could prevent them from creating such spaces. Therefore, it is essential for teachers and administrators working under such conditions, to remain open-minded, flexible, supportive and resourceful.

As we have learned from the literature, the inside as well as the outside of a child care center can set the tone for children’s experiences. Children can be made to feel welcome if thought is given to the actual landscape design, choice of building materials, and the way the entrance to the center is set up. Once those pieces are in place, the next step is to look at the layout and structure of the classrooms. Small scale and private spaces can have a positive effect on children’s development by providing them with areas where they can engage in complex play and learning.

Whether using a long or short version of a rating scale to assess the quality of physical environments, one thing is evident; in order to receive good scores classrooms must include several features that are related to high quality environments for young children. Among those features includes an environment that incorporates age appropriate materials, personalized centers, private spaces, is reflective of children’s skills and
interests, has open-ended materials, promotes autonomy through challenging activities, as well as provides an overall home-like and aesthetically pleasing environment. With these suggestions in mind, and in order to provide educators with information regarding the importance of classroom environments, a workshop was created and presented to a group of teachers and administrators working with young children. The following chapter will explain the methodology of the thesis project, demographics of the participants, and instrumentation that was used.
CHAPTER THREE

METHODOLOGY

Introduction

The purpose of this project was to develop a training workshop for early childhood educators on the importance of the physical environment – specifically their classrooms. Using the acronym APPROACH, to highlight eight specific features of the environment, workshop participants were encouraged to learn about aesthetically pleasing and purposeful environments for young children. This chapter explains the development of the workshop, as well as the checklist that was used during the presentation to help teachers reflect on their own classrooms and whether or not their environments matched the workshop’s APPROACH.

Development of the Workshop

Setting/Description of Camp Amgen/Audience

Camp Amgen is a private childcare center operated by Bright Horizons Family Solutions that offers childcare services to employees of Amgen, which is a biotechnical corporation. Camp Amgen is open Monday – Friday from 7:00 a.m. to 6:30 p.m. and is open year-round for full-time enrollment. Camp Amgen has 32 classrooms and is licensed for 450 children ages six weeks to six years old. There are a total of 145 staff members, including teachers, support teachers, and administration.

Children enrolled at the center come from an above average socio economic status. There are a few children in the older age programs who are first time English learners – however, many children come from dual language households. Camp Amgen is an inclusive center but at the time the workshop was conducted no children with
special needs were currently enrolled. With regard to tuition, parents pay the monthly fees via an online website. There are no grants or state subsidies in place. Parents’ tuition fees only cover teachers’ salaries. Amgen itself is financially responsible for the maintenance and repair of the building where Camp Amgen is located.

**Workshop Content**

The workshop was a PowerPoint-based 55-minute overview of the APPROACH to preschool classrooms. The content of the presentation was a very photo-heavy PowerPoint because the pictures were intended to spark ways of including elements such as a home-like environment or private spaces in classrooms in a visual way. See Appendix A for the complete PowerPoint presentation.

The beginning portion of the presentation contained information about the importance of classrooms environments based on national and state standards and expectations (National Association for the Education of Young Children and California Department of Education), such as the environment being one of the nine standards for accreditation, the environment serving as context for the learning that will happen in the classroom, and the environment as a reflection of the center’s goals and philosophy. In addition, based on information from the California Preschool Curriculum Framework, which was created by the California Department of Education, when educators are mindful of the design and set up of their classrooms, it can help guide children’s challenging behaviors and increase cooperative and constructive behavior. Furthermore, the physical environment of a classroom sets the stage for children’s social and emotional exploration and growth (California Department of Education, 2010).
Following the notion of the importance of the environment based on national and state standards, findings and information from research focusing on the effects of the environment on children’s early academic acquisitions, math, writing, and science, were briefly mentioned including Cunningham (2008), Tu (2006), Brenneman, Stevenson-Boyd and Frede (2009), as well as a study conducted in a Reggio-Emilia inspired center whose results showed that a rich, amiable environment that satisfied preschoolers’ interests, triggered their inquiries and supported their development and learning in relation to literacy (Inan, 2009).

The second half of the presentation introduced the concept and meaning of the APPROACH model that was conceptualized by the researcher. Each of the components of APPROACH was created based on the researcher’s own experience of observing and working with children in order to design environments that provoked their learning, ignited their curiosity, and attracted them to learning centers/activities. Although various characteristics play a critical role in the creation of aesthetically pleasing and meaningful environments for young children, there were eight that were consistently present (See Figure 3.1).
Figure 3.1. Slide from PowerPoint presentation used to introduce participants to the eight components of APPROACH.

Each acronym of APPROACH was discussed in terms of its importance in children’s classroom environments, beginning with *age-appropriate* and making sure that the materials in the environment are safe and developmentally appropriate to use with each age group. Next, *personalized* space was defined which refers to the importance of personalizing learning centers using children’s work. When children see their work displayed it gives them a sense of belonging and ownership. The element of *privacy* was also discussed in terms of having an environment that provides children with small nooks or private areas they can visit throughout the day. According to the literature, private spaces are critical for children to have in a classroom because it gives children relief from
the large group setting if they are not yet ready to participate (Harms, Clifford & Cryer, 1998).

Furthermore, having an environment that is reflective of children’s interest is another important component of APPROACH. The environment should be ever changing in order to incorporate emerging topics that become an organic part of the classroom set-ups. Children’s current interests (e.g. rainbows) should be visible around the walls, content of baskets, and on top of shelves so that children can continue exploring that topic. These materials should be readily available and presented in appealing ways. *Open-ended* materials should predominate learning centers. Multifunctional materials extend children’s creativity and problem-solving skills as well as allow children to engage in complex play for longer periods of time.

The next component of APPROACH that was introduced was *autonomy* in terms of the environment allowing children to select materials easily and move around the space freely. An environment that’s *challenging* provides teachers with opportunities to scaffold children’s learning in order to set up activities that will stimulate their skills in direct and indirect ways. Children should be able to use materials that will help them be successful while still providing some level of challenge and to avoid boredom. The last component of APROACH discussed was *home-like*. It is important for teachers to provide children with a home-like environment where they can feel safe, comfortable, and welcome. Home-like elements, such as live plants, pillows, rugs, and wall décor, should be used throughout the room to accentuate learning spaces. These materials appeal to adults and children because they are familiar to them. Creating beautiful spaces for
children let them know we trust them with these items and in return, they feel competent, capable, and it helps their self-esteem.

Inclusion and the effects of the environment on parents were also mentioned. Making sure classroom environments are reflective of not only children’s interests but also of their special needs, including but not limited to behavioral problems, learning disorders, English learners, and children with physical needs was also discussed. A purposeful environment caters to these needs by revisiting the layout and materials in the classroom to make the necessary adaptations and accommodations. With regard to parents, the environment should make learning visible to families by displaying documentation in thoughtful and appealing ways. From artwork to children's quotes, the way we present these materials adds to the overall aesthetics of the classroom and sends a message to parents regarding how we view and approach education.

**Workshop Presenter**

The workshop was conducted by the author of this thesis. I have been working at Camp Amgen for 2.9 years as the Preschool Education Coordinator. Part of my responsibilities includes overseeing 6 preschool classrooms, 18 teachers, and 120 children. I conduct weekly lead teacher meetings, monthly faculty trainings, and quarterly meetings with parents. Overall, I make sure the weekly curriculum teachers create for children follow developmentally appropriate practices as well as our company’s philosophy. Prior to coming to Camp Amgen, I worked at another Bright Horizons center, Universal Studios Child Care Center, for 5 years. Before working for Bright Horizons, my work experience with children included working as a teacher’s assistant at Los Angeles Pierce College Child Development Center, as a teacher’s aid at a
Montessori-inspired day care, as well as working as a private nanny for two children, one infant and a two year old. Currently, I am in my last semester of graduate school earning an M.A. in Early Childhood Education.

**Workshop Process**

Camp Amgen regularly conducts mandatory monthly two-hour staff meetings for training and informative purposes. Teachers get paid two hours of overtime for attending each staff meeting. Administrators are on salary and do not accrue overtime pay. The workshop took place during the second half of a staff meeting on Thursday January 15, 2015 from 8:00p.m. – 9:00p.m. as part of the training portion. The meeting and workshop took place at the conference center located on Amgen grounds, right across from Camp Amgen. No special announcement was made regarding the workshop as it was included in the regular meeting time. Teachers typically become aware of the training topic for that meeting once they arrive at the conference center on that day.

The organization for the one hour workshop was as follows:

- 8:00p.m. – 8:04p.m. Introduction of topic, purpose, and goals of the workshop
- 8:05p.m. – 8:16p.m. National and State standards regarding the environment
- 8:17p.m. – 8:22p.m. Effects of the physical environment on early academics
- 8:23p.m. – 8:39p.m. Introduction and definition of APPROACH
- 8:40p.m. – 8:43p.m. APPROACH and its role in inclusion and with parents
- 8:44p.m. – 8:52p.m. Fill out APPROACH checklist
- 8:53p.m. – 9:00p.m. Discussion of teachers’ findings, comments, and questions
Participants

Ninety-two teachers, 90 females and 2 males, attended the workshop. They ranged in age from 18 – 56 (M=36). All had at least 1 year of work experience in their respective classrooms (range 1 year – 9 years M=5). Teachers’ highest level of formal education ranged from having taken some college courses to completing their M.A.

Table 3.1 details the comprehensive range of early childhood classrooms represented by the teacher participants – from infant (23 teachers), toddler (16 teachers), 2-year old classrooms (17 teachers), preschool (11 teachers), to kinder prep/transitional kindergarten (10 teachers). The workshop was originally intended for preschool teachers, but the program director as well as the education coordinators from the infant and toddler programs requested that their teachers also attended the presentation.

Table 3.1

Participants from each age group who attended the workshop

<table>
<thead>
<tr>
<th>Number of participants</th>
<th>Age-group they work with</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td>Infants (6 weeks – 12 months)</td>
</tr>
<tr>
<td>16</td>
<td>Toddlers (12 months – 2 years old)</td>
</tr>
<tr>
<td>17</td>
<td>Two’s (2– 3 years old)</td>
</tr>
<tr>
<td>11</td>
<td>Preschool (3 – 4 years old)</td>
</tr>
<tr>
<td>10</td>
<td>Kinder Prep/Transitional K (4 – 6 years old)</td>
</tr>
</tbody>
</table>

In addition to the 92 teachers, six administrators also attended the workshop, including two center directors, three education coordinators (from the infant, toddler, and
2’s program), and one educational trainer in charge of providing resources and training to the whole staff as needed. The administrators were not a part of the study.

**Instruments**

Towards the end of the presentation teachers were given an APPROACH Environmental Checklist that was developed by the researcher. The checklist incorporated all eight components of APPROACH with their definitions so teachers could have knowledge of the items they were being asked to rate. In the checklist teachers were asked to rate their classrooms from 1 – 5, 1 being barely and 5 being highly, to see how their classrooms met each of the APPROACH components that were discussed (see Appendix B for Environmental Checklist). Once they rated their classrooms, the second part of the handout asked teachers to provide examples of the areas they rated as “very” or “highly.” The third part of the handout asked about their age, educational background, age group they work with and years of experience working with that age group. There was also an area to rate the presenter, presentation, and suggestions for improving the workshop. Teachers were given about eight minutes to fill out the handout.

**Procedure**

Because the workshop was part of a monthly 2-hour mandatory staff meeting, during the first hour the program director talked about center-wide topics unrelated to the workshop. Once the director was done addressing the audience, she introduced the researcher. The researcher began by sharing with teachers that the presentation they were about to see was part of a thesis project intended for educators working with children between the ages of 2 – 5 years old but the information was also applicable to teachers
working with infants and toddlers. Throughout the presentation teachers were invited to share input and answer questions based on their knowledge of the physical environments of their current classrooms. After the information regarding APPROACH was presented, teachers were given about eight minutes to fill out an Environmental Checklist as well as additional handouts. The last seven minutes were dedicated to teachers’ findings, comments and questions. The checklists and handouts were collected at the end of the workshop.

**Analysis**

At the beginning of the presentation, when the audience was asked if they knew what the California Preschool Curriculum Framework (California Department of Education, 2010) was, only three teachers raised their hands (out of 92 who were present). Later, when asked to share their knowledge of how they thought the physical environment of classrooms’ affected children’s development, only one teacher shared her thoughts. The fact that not many teachers answered the question or had an idea of what the Curriculum Framework was meant that perhaps the information that was about to be presented was going to be new to most participants.

As mentioned previously, the presentation contained various pictures that were meant to inspire teachers and give them design ideas to take back to their classrooms. Teachers were encouraged to look at pictures from the slides and think of how they could implement some of those ideas into their classrooms. The pictures definitely sparked conversations among participants. This was apparent based on the conversations that went on every time a new picture appeared on the screen. Once the presentation was over
most teachers were done filling out the Environmental Checklist within five minutes. In the next chapter, Chapter Four, the results of the workshop will be revealed.
CHAPTER FOUR

RESULTS

Of the 92 teachers who attended the workshop, 67% (n=62) completed the APPROACH environmental checklist (see Appendix B). The checklist included three parts. The first part was a reflection on the quality of their classroom environment with respect to the 8 components of APPROACH and the degree to which their classrooms were:

1. **Age-appropriate** - Materials, furniture, and overall physical content of your classroom are developmentally appropriate for the ages and stages of development. This includes safety concerns.

2. **Personalized** - Children’s own work is displayed in meaningful and thoughtful ways and is visible in most learning centers. This might also include neatly arranged cubbies where personal items may be kept, particularly for new children who may need transition objects.

3. **Private** - Classroom has clearly defined private areas/nooks meant for small group or solitary play – a space that was designed purely for this purpose such as a library area with soft furniture or a small loft or recessed area if available.

4. **Reflective** - Materials should represent children’s current needs/interests. Materials in baskets, posters, books, etc. are aligned with the topic children are currently researching or needing to work on. This often represents projects that can last weeks at a time.

5. **Open-ended** - Materials are best when they are multifunctional and can be used in more than 3 learning centers. Open-ended materials can include sticks,
rocks, wooden cubes, containers, buttons, corks, seashells, etc. Creative use of material in a variety of ways – including in the dramatic play areas, is important for children’s abstract thinking

6. **Autonomy** - The arrangement of your classroom allows children to move around the space freely; materials are predominantly children-initiated vs. teacher-guided; and learning centers display materials for children’s use instead of being used as storage. Autonomy also implies choices for children to decide which areas of the classroom are most engaging to them and fosters their own decision-making skills.

7. **Challenging** - Materials that allow for both practice and challenge-level play and engagement help children set new goals for themselves and promote their sense of accomplishment (pride in learning and achieving).

8. **Home-like** - Your classroom has at least 6 home-like elements: lamps, soft pillows, live plants, real wall décor, table cloths, table runners, rugs, picture frames, live animal.

As stated previously, the presentation was specifically intended for preschool teachers working with children ages 2 – 6 years old. However, infant and toddler teachers were also in attendance by request of their education coordinators. In order to keep the focus on the results of the intended audience, the data collected will be presented in two different groups: infant and toddler teachers, working with children ages 6 weeks to 2 years old (n=33); and preschool teachers, working with children ages 2 – 6 years old (n=29).
Results of APPROACH Environmental Checklist

Based on the components of a high quality environment mentioned in APPROACH, teachers were asked to rate their classrooms, on a scale from 1 = barely to 5 = highly, to find out to what degree their environments reflected each of the components. Figure 4.1 represents the results from the preschool teachers, in order from their highest-rated component to the lowest-rated one.

Preschool Teachers’ Ratings of APPROACH in their Classrooms

![Bar chart showing ratings of APPROACH components](chart)

**Figure 4.1 APPROACH Results of Preschool Teachers**

With regard to the component of *age-appropriate*, preschool teachers rated this item from 1 (n=5) to 5 (n=12) with a mean score of 4.24 (M=4.24), which made it their overall highest rated component. To the question about *autonomy*, the item was rated from 3 (n=7) to 5 (n=3) with a mean score of 3.86 (M=3.86). *Personalized* was rated from 1 (n=1) to 5 (n=2) with M=3.41. The element of *reflective* was rated between 1 (n=1) to 5 (n=2) with a mean of 3.27 (M=3.27). The next component was *open-ended*, this item was rated from 1 (n=1) to 5 (n=4) with M=3.24. *Challenging* received ratings...
from 1 (n=2) to 5 (n=4) with a mean score of 3.2 (M=3.2). The second lowest rated component was *private*, which was rated from 1 (n=3) to 5 (n=4) with a mean score of 3.2 (M=3.2). The lowest rated component of APPROACH among Preschool teachers was *home-like*, which was rated from 1 (n=6) to 5 (n=5) with a mean score of 2.75 (M=2.75).

**Examples of APPROACH in the preschool classrooms.** In the second part of the APPROACH environmental checklist, participants were asked to provide examples, found in their classrooms, for components of APPROACH they rated as either “highly” or “very.” However, it seemed that this was not clear for all teachers because even though they did not rate some components as either “highly” or “very”, some teachers still provided examples under each item. Regardless of whether a component was rated “highly,” “very,” “somewhat,” “little,” or “barely” by preschool teachers, it was decided that all of the examples given by teachers be included in order to gain a better understanding of their interpretations of how each component of APPROACH is reflected in their classrooms. Preschool teachers’ (n=29) answers included:

**Age-appropriate (16 comments)**

- “All of the materials are feasible/completable [sic] for twos. They do not pose any safety risks/concerns. Children return to the toys and manipulatives.”
- “Age-appropriate toys like puzzles, connectors. Blocks.”
- “Math materials that challenge. Home-living center”
- “The majority of our environments are age appropriate because we recently change to T-K.”
- “Math center offers manipulatives that can move from simple to move complex depending upon what a child does with them.”
- “We recently change our room around to meet the age-appropriate criteria.”

- “Furniture, toys”

- “The activities are engaging and emergent. Safe toys.”

- “Short furniture, tiny toilets + sinks.”

- “Chosen from catalogues that are choking hazard free for out [sic] children. All furniture is child friendly + small.”

- “The furniture is child size and is inviting children like using toys in different ways.”

- “Low chairs and bookshelves. All things are labeled.”

- “Shelves and furniture child size and accessible.”

- “Everything at their level. Materials are suitable for age group.”

- “Items are at their levels.”

- “materials and activities are often provided where children are able to explore at different levels that meet their developmental level using the same materials. Children are given the opportunity to be challenged and feel successful.”

- “A variety of age-appropriate materials available to meet the different needs interests of the children.”

- “dap toys, activities, areas set up in a way that is safe.”

- “everything is @ their level. Organized in a manner they can care for stuff.”

- “Items are challenging and arranged for easy clean up by children.”

Personalized (14 comments)

- “Some of their art works are framed.”
- “Art work hanging from block center and homeliving [sic]. Documentations art work in frames.”
- “Children are provided their own space to keep their belongings clearly labeled with their names and photo. We have files where their paperwork is kept by them and they have the decision as to what they want to share/take home.”
- “Their cubby space + their own basket with their pic [sic]. family photos.”
- “Child has own cubby. Family portraits.”
- “Family pictures. Art file.”
- “Art work in frames. Cubbies with their pictures.”
- “1. Photos of their children in domains supporting what goes on there. 2. The family books in basket.”
- “Children’s work at their level. Pictures of the children doing emergent activities.”
- “Art/hanging”
- “Art work is displayed on documentation boards with quotes. In our library center we have pictures of children reading books (at their eye level)”
- “We try to display al [sic] the children’s work throughout the class in the cubbies and on the tables that the child can put in their file or take out.”
- “Family photos on wall. Art work at children’s level – children’s work”
  “Art work displayed in classrooms.”

Private (15 comments)
- “Pillows sofas only 2 children in lay [sic] castle. Science center/computer limited to use of 2 children.”
- “We are currently building this area.”
- “Library area has pillows for them to sit and read on their own. – Dramatic play center.”
- “Lights/pillows”
- “Library area and dress area”
- “Cozy area. Outside cars only one childe [sic] can use at a time”
- “The couch. Some pillows.”
- “The castle, couch.”
- “Library. Upper loft.”
- “Upstairs loft with pillows + books. Living area space with books and couches.”
- “Loft w/soft pillows. Library area soft + inviting.”
- “Under the loft in the library area provides a quite area to read with sofas to relax. Still a work in progress.”
- “Couch in library and also couch in homeliving [sic]. Our classroom would like pillows instead of the blue couch in room (not natural)”
- “Area by Library offers a quiet, private area for children to go.”
- “Library area, homeliving [sic]”

Reflective (8 comments)
- “Room display updated interest of children and provide examples of exploring interests.”
- “Check out library books and rotate baskets.”
- “Books are changed out to reflect current interest of the children. We continue to cover precious topics relating them to current topic”
- “Garden area”
- “Bookshelves [sic] rotate daily to extend the lesson plan.”
- “Ocean animals and gears because we are interested in both.”
- “Colors/plants”
- “We have age-appropriate materials in baskets that we rotate monthly. We change our book in the library weekly to coordinate [sic] with our lesson plans.”
- “Child sees project work over time & can revisit it. Penguin height math chart.”

Open-ended (13 comments)

- “Science – magnifying glass + acrylic specimen. Construction – build, create, create art, role play. Allow children to look for detail, organize, classify, balance, role play.”
- “we have various materials in all our centers – sticks, blocks, etc. We rotate our materials in homeliving [sic] so we have different multi-cultural items.”
- “crayons, playdough [sic] ”
- “rocks, seashells”
- “Blocks – connecting ladders”
- “Paper w/crayons/pastels. Gears w/links (can use together on their own or in another center)”
- “Boxes, foam filling, anything recycled.”
- “Basket of corks. Basket of driftwood.”
- “Books across the room. Play dough exposed in w/activities.”
- “animals for counting + HWT cards. Blocks for building/counting/Art.”
- “Seashells, rocks.”
- “Seashells, corks.”
- “Building blocks. Shape patterns/Geo-boards”

Autonomy (17 comments)

- “Block centers + manipulatives are always accessible to their choice at any point,“
- “room is arranged for open access and clearly designated areas.”
- “Spacing is good between centers. Set up makes all centers engaging.”
- “Angles of tables for access for children to maneuver [sic] around classroom easier presenting cubby activities for display.”
- “children are given the opportunity to choose materials to explore in the centers. We encourage and lead and then step back to enhance their autonomy and creativity.”
- “All items out are for children to use on their own.”
- “Block area. Writing area.”
- “The children are free to go to any of the shelves and get any toys. Displayed in a way that they can use.”
- “All areas have more than one choice for children to choose. Toys rotated frequently.”
- “The domains are hanged to support our themes.”
- “Open centers the children can go to and choose on their own.”
- “Kitchen center is used often and outside area.”
- “Our centers are organized in a way in which they are clearly distinct. The shelves in each center are filled with toys.”
- “We need more baskets and home feel.”
- “We recently re-arrange our class and are continuing to re-arrange our room.”
- “Self serve dishes/utensils. Block center baskets.”
- “Children are allowed to explore centers on their own.”

Challenging (10 comments)
- “Weight scales. Writing first/last name.”
- “We daily try to challenge our children with language, math, art, etc. We also challenge the children daily with our outside activities.”
- “Thru activities/ciriculum [sic] strong. Art center.”
- “More cozy/home living setting. Room arangement [sic].”
- “Only some of the manipulatives.”
- “Many of the materials made available have a goal or challenge for the children to strive for.”
- “Blocks.”
- “Give children the opportunity to take part in decision making.”
- “Extending an activity – Puzzle site wording bldg. then writing the words or charting them. Weekly Reader Group Activity – to then having extra homework activity that goes along w/Weekly Reader.”
- “Rotating toys to keep interests going. Keeping centers based on childrens [sic] interests.”

Home-like (13 comments)
- “Live plants, couches (2)”
- “We are working on it!”
- “Lantern lights under loft. Table runners.”
- “We have pillows, live plants, pictures, lamps, and show lights, home-like carpets, and table runners.”
- “recycled materials in kitchen area. Min dust pans + brooms.”
- “Currently under construction.”
- “We are currently building this area.”
- “rugs, numerous soft pillows, numerous frames, art pieces in frames and on walls. Wall décor.”
- “Lamps, pillows, live plants, table cloths, table runners, rugs, picture frames.”
- “Soft lamps, pillows, live plants.”
- “plants, couch, wooden bases, bamboo sticks, wall hangings, and picture frames.”
- “pillows, rugs, family photos, table runners, plants, soft lamp.”

**Infant and Toddler Teachers’ Ratings of APPROACH in their Classrooms**

Results from teachers working with infants and toddlers had some similarities and differences when compared to the results of the preschool teachers group. Infant and toddler teachers were also asked to rate their classrooms on a scale from 1 = barely to 5 = highly, to find out to what degree their environments reflected each of the components of APPROACH. Results from the infant and toddler teachers are represented in Figure 4.2, in order from the highest-rated to the lowest-rated component.
Figure 4.2 APPROACH Results of Infant and Toddler Teachers

*Autonomy* was the highest-rated component among infant and toddler teachers having being rated from 2 (n=1) to 5 (n=16) with a mean score of 4.39 (M=4.39). The next component was *challenging*, which was rated from 2 (n=3) to 5 (n=3) with M=4.33. Teachers in this age group rated *age-appropriate* from 3 (n=4) to 5 (n=14) with a mean score of 4.3 (M=4.3). *Personalized* was rated from 2 (n=1) to 5 (n=6) with M=3.9. The next highest rated item was *reflective*, which was rated from 2 (n=4) to 5 (n=6) with a mean score of 3.66 (M=3.66). The component of *home-like* was rated between 1 (n=1) to 5 (n=3) and had a mean score of 3.6 (M=3.6). When it came to the question about *private*, this was rated between 1 (n=1) to 5 (n=5) with a mean score of 3.54 (M=3.54). The lowest overall rated item was *open-ended*, which had a range of scores between 1 (n=3) to 5 (n=6) with a mean score of 3.12 (M=3.12).

*Examples of APPROACH in the infant and toddler classrooms.* Just like in the preschool teacher group, for the second part of the APPROACH environmental checklist, teachers provided examples of components they not only rated as “highly” or
“very” but a few teachers also provided examples for items they rated as “somewhat,” “little,” or “barely.” Regardless of their rating, all of the infant and toddler teachers’ (n=33) examples included:

**Age-appropriate (19 comments)**

- “Dramatic play. Block area.”
- “All shelves are at their level. All toys in the classroom are age-appropriate.”
- “Music instruments for older ones that have or practice hand-eye coordination. Cars for does [sic] that crawl.”
- “Eye level shelves. Different materials.”
- “small handheld toys for smaller hands. Climbing structures for older children.”
- “We have teethers [sic] for the children who need it, variety of shakers for different ages & stages.”
- “Furniture is age appropriate for children to use. Materials that are set up in room appeal to children of the age group.”
- “Not to many toys out. Soft toys.”
- “Art is put out with by the age of children in our age group it’s the process not the product.”
- “Tables are low for the children to eat snack/lunch at. Shelves, toy placements are visible and within reach.”
- “Toys that can be mouthed or manipulated.”
- “Pop-up toys, peg boards”
- “small tables/chairs (toddler appropriate furniture). Providing 10 buses/trucks (enough for everyone)”
- “there are many toys that are properly placed for the children of different ages and stages to explore. Areas are all at childrens [sic] level.”
- “low tables. Soft pillows.”
- “Everything is at the childrens [sic] level. There are a variety of multiple age appropriate toys and activities in the room and yard.”
- “Furniture & classroom materials are age-appropriate.”
- “soft structures to climb on. Materials/toys at lower levels.”

Personalized (21 comments)
- “children [sic] art work. Children personal belong area.”
- “Family book, cubbies, Family board.”
- “Pictures of place of belonging (cubbies, who is here board). Labels for activities – pictures.”
- “Art work, hanging art mobile.”
- “Cubbies. Family books/photo board”
- “theyre [sic] books that we have out that have a lot of culture and different ethnisties [sic]. Mirrors for our friends to look at.”
- “Cubbies/diaper area have their pictures on the wall. Art work on the wall throughout the room. Birthday board and family board.”
- “Art. Family boards.”
- “posters hung on th [sic] wall with childrens [sic] pictures of families. A blanket from home.”
- “Art is displayed in the classroom, both group and individual work. All About Me board, child’s picture and form about why they are special.”
- “Shows appreciation. Parent enjoy it.”
- “Paintings hanging from ceiling. Poster boards.”
- “Art work is displayed for children to see as well as parents. Cubbies are provided for each child.”
- “Family boards. Artwork.”
- “Family boards on walls hanging art from ceiling.”
- “Art displayed. Family board.”
- “Childrens [sic] art is displayed at all times & send home when new art is done.”
- “Cubby. Family book.”
- “Collecting fall leaves on buggy walks and using them for sensory experiences. Opening pumpkins and exploring inside.”
- “Children artwork is displayed in the classroom.”
- “Personal cubbies for extra clothes. Art work displayed in the classroom.”

Private (16 comments)
- “We have the quite spot under the desk w/soft mat w/soft dolls. Soft couch w/soft dolls and books for toddlers about to transition.”
- “Canopy over the garden area. Mattress on the floor next to booksleve [sic].”
- “Reading area, quiet time.”
- “One area with soft toys.”
- “Comfy soft area. Book shelf.”
- “The library center where we have soft place to read. On indoor structure.”
- “art work, hanging art mobile.”
- “We have 2 cozy areas for our friends to look at and relax at. The garden area is great for our younger friends to play in.”
- “Under desk”
- “mattress in the corner with pillows and soft stuffed animals.”
- “Library area for children to sit and read. Loft for children to play in and they are able to rest and relax.”
- “Cozy corner. Garden napping toddler age.”
- “We have the quiet area with a mattres [sic] & soft toys. We have the ball area where infants can be active.”
- “Soft reading corners. Family pictures/books/mirrors.”
- “Quiet Area has mattress and soft toys next to library center children can relax and feel at home.”
- “Reading cozy area with books and pillows. Quiet area under the desk with soft toys.”

Reflective (17 comments)
- “books about animals, shape sorters”
- “Toys on shelf what children are talking about. Sensory table.”
- “Changing out the playfood [sic] in the dramatic play area frequently. Providing books that match the lesson plan.”
- “Cubes, sensory bottles scarves”
- “bring out push toys when a group of children or 1 child is learning to walk. Drums for children who seem to enjoy banging…”
“Toys the reflect the lesson plan, which is emergent. Toys placed in the classroom to promote their different stages.”

- “Play mirror. Music.”


- “Balls (things that roll). Cars.”

- “family boards are all around. Library center is wide open.”

- “art work.”

- “soft baskets with different toys to be explored. Soft blocks or musical instruments.”

- “Baskets filled with childs [sic] interest books.”

- “Climbing structure. Math center.”

- “We have teethers [sic] for does infants that need them. Push carts outside for those that are starting to walk but need a little push.”

- “Toy are placed in baskets – children interests – we switch materials weekly or daily.”

- “Family boards posted around the classroom to learn about each other. Push toys to encourage walking.”

Open-ended (9 comments)

- “Some shelves are open”

- “baskets/bowls. Balls.”

- “Dolls. Dramatic play.”

- “Dramatic play clothes. Science/writing/physical activities etc.:”

- “Different centers to explore. Climbing structure”
- “Art & science”
- “sticks, rocks, wooden cubes”
- “our infant use same toys for mouthing or banging or throwing”
- “art; paper and table tops cups; stacking, music”

**Autonomy (16 comments)**

- “All shelves are open to children at all times”
- “open space for infants to crawl or for toddlers to use push toys.”
- “childs [sic] eye level 3-4 toys in shevel [sic] (not too many, not to little)”
- “All toys, furniture, and space in the classroom are open to the children. Shelve have toys for the children & not storage”
- “Children always free to choose and move around freely”
- “Climbing structures (2 of them). Blocks building station”
- “Sensory area. Block area”
- “Carpet space allows children to move freely, available for bigger/special toys to be set out like parachute, tunnel. We have different centers for the kids to choose from.”
- “open space after rearranged the climbing structure.”
- “Multiple learning centers. Large motor and small motor centers such as climbing structure (hard and soft) and reading corners”
- “open cubbies & shelves to show off toys at children’s level. The environment is open to move toys around as children please.”
- “Placement of furniture/toys. Science Rocks area.”
- “move freely. Decision making skills”
- “Children are able to explore the classroom – lots of space between centers/lots of outside playtime.”
- “there is plenty of space to infants to move around due to most shelves [sic] being gains walls.”
- “middle of room is open. Toys are o sides of room to be able to go from one to one easily.”

Challenging (13 comments)
- “We need more challenging things for older children.”
- “indoor and outdoor structures to climb on. We have plenty of selves and push toys for gross-motor skills”
- “climbing structure. Hid [sic] & seek.”
- “The indoor climbing structure. Ballerina bar”
- “We will borrow toys from toddler room when children are close to transition and need higher challenge”
- “Setting out activities on the table. Stairs”
- “Climbing structure”
- “Puzzles. Tunnels”
- “Having big/small legos [sic] so they can connect them. Different things to be at hands touch.”
- “Climbing structure. Stacking cups”
- “Classroom materials/manipulatives are displayed for toddlers – more challenging for next level.”
- “buckets with lids that have shapes opening & infants have to put right shape in right opening.”

- “Puzzles. Dumping buckets.”

Home-like (14 comments)

- “soft pillows, rugs, family pictures”

- rugs, family photos”

- “Need more homey materials”

- “I don’t have 6 examples in my classroom & wish I would have more.”

- “Needs improvement”

- “Plants, sofa, pictures’ fams [sic], lamp”

- “Rest area, blankets”

- “We need help in this area”

- “Pillow. Play mat”

- “We have a lamp on our desk. Quilts, couch…etc.”

- “Family style dining”

- “Pillows, soft dolls rugs toys posters balls”

- “Mattress & soft animals & pillows on it.”

- “Rugs on the floor. Pillows in cozy corner.”

Highest and Lowest-scored Items

Highest-scored Items. Looking at the results from preschool teachers’ evaluations, the element of APPROACH that received the highest overall rating was age-appropriate (M=4.24). This finding revealed that teachers working with children ages 2 – 5 years old believed that their classroom environments met children’s needs as far as
having furniture and materials that are age and developmentally appropriate and are displayed at children’s eye-level. The second and third highest rated elements for this age group included *autonomy* (M=3.86) and *personalized* (M=3.41). On the other hand, infant and toddler teachers’ highest rated element was *autonomy* (M=4.39). This finding revealed that teachers working with children under the age of two believed that their classrooms stimulated children’s sense of independence by providing different areas for them to explore, have a variety of activities set up, and with ample space for infants and toddlers to move around freely. The second and third highest rated items for this age group were *challenging* (M=4.33) and *age-appropriate* (M=4.30). When evaluating the top three highest rated elements from both groups, it is apparent that both age groups value and promote children’s sense of autonomy by providing them with an environment that includes developmentally appropriate materials and practices. However, preschool teachers’ results revealed that they did not find their classrooms to be challenging enough for the age group they work with, with one of their lowest scores (M=3.20), while infant and toddler teachers found the element of *challenging* to be their second highest rated item. Examples of challenging environments in the younger age group included having push toys, puzzles, and climbing structures.

**Lowest-scored Items.** For the lowest scored items, results revealed differences and similarities amongst both age groups. Preschool teachers’ two lowest scored items included *home-like* (M=2.75) and *challenging* and *private* both receiving the same mean score of 3.20. Infant and toddler teachers rated *open-ended* (M=3.12) and *private* (M=3.54) as their lowest two items. Based on these findings, it seems that both age groups found their classroom environments to be lacking spaces for privacy, such as a
cozy space for individual or small group play that is consistently available throughout the day for children’s use. As mentioned previously, preschool teachers did not find their classroom environments to be challenging enough for children in their age group. Moreover, preschool teachers found their classrooms to also be lacking a home-like atmosphere by not having enough plants, soft pillows, or rugs. Infant and toddler teachers’ scores were higher for this element (home-like), having a mean score of 3.60 as compared to 2.75 for the preschool group. However, when analyzing teachers’ answers under the element of home-like, preschool teachers provided more of a variety of examples than teachers in the younger age group.

Infant and toddler teachers had open-ended as their lowest overall scored item (M=3.12) while preschool teachers’ results for the same element revealed a slightly higher mean score of 3.24. This means that most items found in classrooms for children under the age of two, are not as multifunctional and can not be used in more than one or two centers due to their lack of open-endedness.

**Additional Findings**

Additional results for this section revealed that both groups of teachers found their environments to be reflective of children’s needs and interests. One of the main ways teachers from both age groups reflect children’s interests is by rotating materials as new topics and skills emerge. The element of personalized was the third highest rated item for the preschool group, as stated previously. This element was the fourth highest rated item among teachers from the younger age group. Mean scores for both groups included, 3.41 for preschool and 3.90 for the younger age group. These scores revealed that both age groups found that their environments displayed children’s work and also provided
children with spaces where they can put their personal items, such as cubbies. For the most part, based on teachers’ answers under this element, it seems that children’s artwork was a prevalent example of personalization.

**Evaluation of Workshop**

The third part of the environmental checklist included an evaluation of the workshop and suggestions for future improvement. Participants were asked to rate the workshop as excellent, good, average, fair, and poor, based on three criterion: 1) Quality of the information, 2) Style of the presenter, and 3) Overall rating. Out of the 62 teachers who completed the handouts, 35 teachers rated the quality of the information as “excellent,” 26 teachers gave it a rating of “good,” and 1 teacher found it to be “fair.” The style of the presenter received ratings of “excellent” by 32 teachers, “good” by 27 teachers, and 3 teachers rated it as “average.” For the overall rating of the session, a total of 34 teachers rated the presentation as “excellent,” 26 gave it a rating of good, and 2 teachers found it to be “fair.” Table 4.1 shows the ratings of the workshop based on participants’ responses.

**Table 4.1**

**Overall Rating of the Workshop**

<table>
<thead>
<tr>
<th></th>
<th>Excellent</th>
<th>Good</th>
<th>Average</th>
<th>Fair</th>
<th>Poor</th>
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<td>26</td>
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</tr>
<tr>
<td>Overall Rating</td>
<td>34</td>
<td>26</td>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Suggestions for Improvement

Preschool teachers suggestions for improvement of workshop, included:

- “None”

- “Bring Brenda into the two’s rooms to make them the environment more aesthetically pleasing and appropriate for the age.”

- “Your [sic] welcome to come add to our environment! PBD”

- “An addition to the workshop might be a tour of classroom or center in a room with a beautiful set up…and then also one to help teachers know where to order, budget and how to plan!”

- “Great presentation!”

- “More time to complete checklist”

- “Very good information! But would have liked to se you move around a little more instead of standing in one area.”

- “This is a great workshop, with great ideas but our room has been started but hasn’t moved forward with more home-like environments.”

- “Solutions to do all these improvements on a budget.”

- “Nicely organized + researched + lovely pics [sic]! More animation verbally/vocally would be helpful.”

- “Our classroom needs work – As a TK we need to have more in our Art center and more of a cozy corner. Under construction.”

- “Display how we can access these materials – we are too restricted by our catalogs! Maybe set an amount from class budget to use for found items elsewhere by teachers?”
- "Reality [sic] of re-doing a classroom to look home-like takes money. Ideas are Great!"

Infant and toddler teachers suggestions for improvement of workshop, included:

- "I feel that there is no need to improve. I feel the presentation was well done."
- "I love it I’m starting my BA and feel more motivated.”
- "Try doing smaller groups then come back together as a big group to get ore [sic] ideas.”
- "Thank you! We have got a lot of great ideas for our classroom!”
- "Participation in setting up centers”
- "A lot of information and talking. Maybe shorten it or add some video clips of the kids playing”
- "I liked the pictures”
- "Make suggestions for infant/toddler rooms if those teachers are in the audience”
- "More ideas for infant rooms.”
- Great job Brenda Great pictures!”
- "Add more to infant/toddler”
- "Not reading from essay as much, more engagement with listeners more enthusiasm when presenting”
- "Making it applicable for infants all the way thru pre-k.”
- "More suggestions on how to implament [sic] these ideas in the younger age groups.”
- “Assistance or examples/idea in toddler classroom. How to make our classroom home inviting.”
- “When people give examples, stop saying “that’s a pretty good idea. It down plays their idea/example.”

In the following chapter, Chapter 5, the findings in light of teachers’ reflection of their classroom environments will be discussed as well as conclusions and recommendations.
CHAPTER 5
DISCUSSION AND CONCLUSION

Summary

The purpose of the current thesis project was to develop a training workshop for preschool teachers on the importance of the classrooms’ physical environment. The project centers around using a tool containing elements that highlight eight specific features of a high-quality environment, APPROACH. Participants attended the 60 minute workshop and were asked to reflect on their current classrooms’ ability to meet each of the components of APPROACH providing examples of their highest-rated items. In other words, participants were encouraged to immediately consider how well their classrooms were matched to the model and then to cite examples of their strengths. Although the current thesis project was originally targeted for preschool teachers working with children between the ages of 2 – 5 years old, infant and toddler teachers (working with children under the age of 2) were also present during the workshop based on their education coordinators’ requests and the program director’s suggestion. In order to keep the focus on the initial target audience, findings from both age groups were divided in two groups, preschool teachers and infant/toddler teachers. Results from each group revealed differences and similarities across the eight components of APPROACH. In this chapter, findings from both age groups, possible workshop adaptations, and suggestions for future research will be analyzed and discussed beginning with a break down of each of the components of APPROACH that were rated from highest to lowest.
Discussion

Age-appropriate

The first component of APPROACH participants were asked to rate was age-appropriate; which refers to the materials and furniture available in classrooms. Findings from both groups revealed that this element was the highest rated item by preschool teachers and second highest-rated item for infant and toddler teachers. Based on teachers’ answers of how their classrooms reflected age-appropriateness, it seems that both groups are mindful of the materials and furniture that are brought into their environments by making sure they are safe and developmentally appropriate for children to use. Some examples of age-appropriate materials teachers gave included child-friendly furniture (chairs, tables, shelves) and non-choking hazardous materials for the age group they work with. This was an important finding because according to the California Preschool Curriculum Framework (California Department of Education, 2010), in order for the environment to support children’s social-emotional learning, it must include challenging and developmentally appropriate materials that encourage both creative and flexible use.

Autonomy

Autonomy in a classroom (especially in a classroom designed for preschool children) refers to having an environment that supports children’s independence by allowing them to select materials easily and move around the space freely. This also refers to having clearly defined centers for children to choose from. This item received high ratings from both age groups – it was the top rated item for the infant/toddler group and the second highest for preschool teachers. Examples of how teachers from both age groups help children develop autonomy skills is by providing a classroom with different
centers to choose from, toys that are easily accessible at all times, and plenty of space for children to move around the room.

These findings support the literature, such as Inan (2009), because when classrooms have different interest areas, it allows “children to feel secure, and not overwhelmed with the complexity of a big room” (p. 61). Such areas also allow teachers to set up diverse activities that children can choose from. Moreover, “a legible environment contributes to children’s development of competency by helping them to better understand how to use the space” (Maxwell, 2007, p. 232). Not only that but “a physical order in spaces may lead to the room more predictable and familiar, and may foster children’s skill of competence and independence” (Inan, 2009, p. 61). It seems that both age groups consistently provide their children with environments that promote autonomy by having clearly defined learning centers, baskets at children’s eye-level, and spaces that are free of clutter.

**Personalized**

The component of *personalized* - defined as having children’s work visibly displayed around the classroom in meaningful ways was the third highest rated item for the preschool group and the fourth highest rated for the infant/toddler group. The majority of examples of how teachers from both age groups personalize the classrooms can be seen mostly in the form of family pictures and children’s artwork being displayed. Despite being rated relatively high, ‘personalized’ was seen in a very narrow way. It seems that both groups would benefit from learning additional ways of how to personalize their environments to reflect its inhabitants. Bringing this element to life in children’s environments is essential because they “need a place that is personalized and
meaningful. Therefore, it is important to incorporate elements of their culture, artwork, and interests to give them a sense of belonging and build a symbolic relationship between themselves and the spaces they occupy” (Deviney, Duncan, Harris, Rody & Rosenberry, 2010, p. 140). Ideas include displaying children’s quotes along with their artwork, creating sculptures, child-crafted manipulatives, photographs and found materials that can permanently adorn the room, or inviting children to personalize their classroom by arranging the furniture to their liking. In her article, *Emergent environments: Involving children in classroom design*, Felstiner (2004) noted that “children feel powerful when they play a real part in designing or changing elements of the classroom” (p. 43) and it is important for children to “see their own ideas and images having an impact on the physical space around them” (Felstiner, 2004, p. 43).

**Reflective**

When discussing how reflective their environments were of children’s interests and skills, this component received similar ratings from both age groups and was neither in the top nor low rated items. Both age groups provided various ways in how this is accomplished. One of the most common answers was changing or rotating materials to challenge children’s different developmental stages and to reflect the current topic being explored. Preschool teachers rated this element slightly higher than the infant/toddler teachers. This could result from older children being able to engage in more complex activities compared to younger children. Typically younger children, such as infants and toddlers, are still working on reaching milestones such as crawling and walking while preschoolers are ready to learn more about other curricular topics like science, math, and writing. In addition, infant-toddler teachers may perceive that changes in the environment
might be related to novelty, which would make some very young children anxious or insecure.

Inan (2009) who looked at the environment of a Reggio Emilia classroom to find out what characteristics made it an amiable literacy setting for children, found that this particular classroom was responsive to the children’s interests and not static. In other words, “teachers were setting up the environment with new materials and tools, changing things/variables at each time” (p. 2,515) in order to be reflective of children’s interest, skills, and needs.

**Open-ended**

One of the most worrisome finds were the low ratings attributed to the element of open-ended, which refers to having a variety of materials that are multifunctional and serve more than one purpose. The literature states that “preparing a variety of learning areas with open-ended materials encourages each child to participate in meaningful play experiences that match their individual temperaments and abilities” (California Department of Education, 2010, p. 43). In addition, “open-ended materials and objects that can be repurposed, used, and formed in a multitude of ways not only sustain children’s interest but are believed to encourage creative and flexible ways of thinking” (Kuh, 2014, p. 21). Despite the consensus regarding the importance of having open-ended materials available for children’s use, both age groups of teachers rated this element rather low. In fact, it received the third lowest rated score from the preschool group and was the overall lowest rated item for the infant/toddler teacher group. Such results are worrisome because they are representative of environments that are lacking stimulation
of children’s cognitive development by not having materials that enhance and promote problem-solving, creativity, and complex play.

**Challenging**

Teachers for both age groups had different results for the element of *challenging*. Infant and toddler teachers rated *challenging* as their second highest item while the preschool group rated it in their bottom three areas as met. Although this finding differs for each group, when looking at the examples provided by teachers, it seems that the main way infant and toddler teachers challenge children is physically, through the use of a climbing structure and cognitively/fine motor wise with puzzles while on the other hand, teachers working with the older age group challenge other areas of development (cognitive, language, and physical), through the use of scales, manipulatives, blocks, rotation of items, and children taking part in decision-making. This could be attributed to teachers working with younger children don’t need many materials to scaffold children’s development, and instead, their focus lies on children reaching their physical milestones, such as rolling over, sitting, crawling, and walking. And that is why the use of a climbing structure might be an important part of the environment. Likewise, children develop from the midline outward, thus they would need the prerequisite skills of larger muscles before the more fine-grained use of manipulatives with simple puzzles suffices about as challenging an activity as the teachers’ perceived infants and toddlers capable of accomplishing.

**Private**

Interestingly enough, the component of *private*, which refers to having private areas or nooks where children can engage in solitary or small group play, was rated at the
bottom two for both age groups. Results revealed that infant, toddler, and preschool teachers found their environments to be lacking private spaces or small nooks. This finding is troublesome because according to the literature, high quality “child care spaces should have some dedicated private spaces” (Maxwell, 2007, p. 231) that provide children with some sort of stimulus shelter where they can be alone. Moreover, the element of privacy is an environmental characteristic said to be related to competence in children (Maxwell, 2007). In addition, one of the items that ECERS-R (1998) rates is space for privacy because having such spaces gives children relief from the pressures of the large group setting. Furthermore, the quality of children’s play behavior is affected when they play in small spaces as they tend to focus more on the activity at hand and go from exploratory play to complex play more quickly (Tegano, Moran, DeLong, Brickey & Ramassini, 1996). When looking at teachers’ answers from both age groups, the examples under this element included having pillows, couches, and a library/reading area; which are all adequate examples of private spaces, however, children can benefit from having additional private spaces or small nooks where they can consistently engage in solitary or small group play.

**Home-like**

The last component of APPROACH teachers rated was home-like; which includes the overall aesthetics of the classroom and home-like materials, including but not limited to curtains, rugs, pillows, live plants, and natural light as well as choice of colors. According to the literature, “home-like furnishing and furniture contribute to comfortable dimensions in childcare settings, and children feel like being at home” (Inan, 2009, p. 59). In the book, *Inspiring spaces for young children*, home-like materials are referred to
as being authentic. The reasoning behind this is so “that the children’s play experiences mirror real life. The term “authentic” refers to an object that is commonly seen or used in an adult space but is placed in a child’s environment for aesthetic or functional purposes” (Deviney, Duncan, Harris, Rody & Rosenberry, 2010, p. 92). For example, this might be a functional floor lamp or rug on the floor.

Regarding colors in a classroom, Deviney et al. noted that colors can have a negative and positive effect in the environment, colors “can evoke feelings and emotions, give importance to areas or objects, define spaces, and reflect children’s homes or communities” (Deviney, Duncan, Harris, Rody & Rosenberry, 2010, p. 66). Therefore when designing spaces for children, attention should also be paid to the intensity of colors in the classroom – bright, primary colors can overwhelm children’s emotional well-being; such colors should be used conservatively, perhaps as accent colors in order to avoid visual clutter. In spite of information and suggestions related to how to create more home-like environments for children, findings from both age groups revealed significant low scores.

Preschool teachers rated this component as their overall lowest one while infant and toddler teachers had it as their third lowest item. In fact, some infant and toddler teachers stated that this is an area of their classroom that “needs improvement,” another one indicated, “need more homey materials,” and one shared, “I don’t have 6 examples in my classroom & wish I had more.” Preschool teachers were able to provide various examples of home-like elements in their classrooms but there were still a few teachers who said that this was something they were currently addressing. Although the younger age group had a slightly higher rating for this element, results from their APPROACH
environmental checklist as well as teachers’ examples under this item still indicate that this is an area of need for educators working with both age groups.

**Conclusion**

Greenman (2007) stated, “for younger children, the importance of the perceptual environment, particularly the visual environment, cannot be overestimated” (p. 86). In addition, “environments that are dull and sterile, or random and chaotic, or that contain busy murals that appeal to adults or complex (to a baby) images that appeal to older children are negative learning settings” (Greenman, 2007, p. 86). Given the importance of the effects that classroom environments can have on children’s learning and development, the purpose of the current thesis project was to develop a training workshop for early childhood educators on the importance of the physical environment and to encourage participants to learn about aesthetically pleasing and purposeful environments for young children. Based on results and answers from participants, it was found that some critical elements in teachers’ classrooms that are related to high quality environments could indeed benefit from additional assistance and training. Two of those elements include *home-like* and *private*; both having being rated in the bottom three amongst the preschool and infant/toddler age groups.

**Future Workshop Adaptations**

Initially, this workshop was going to be presented during the second half of a faculty meeting but only to teachers working with children ages 2 – 5 years old. Based on requests from education coordinators and the program director, the workshop ended up being part of a center-wide faculty meeting/training that also included infant teachers, toddler teachers, and administrators. Due to the last minute change of audience, no
alterations were made to the context of the workshop although once the training began; it was stated that the information and pictures in the presentation were geared towards the older age group. In looking at the answers from the infant/toddler teachers based on their evaluation of the workshop, not surprisingly, many of them asked for inclusion of pictures and ideas for the younger classrooms as well as information as to how aesthetically-pleasing environment affect infants. Preschool teachers’ comments included having the presenter go to their classrooms and help out with the design of the room; while others wanted to know more about how to create home-like environments on a budget and feeling like they were restricted to buying materials from school catalogs. Additional overall suggestions included showing a video, facilitating small group discussions, and taking a tour of a classroom.

With these suggestions in mind, plans for creating a workshop solely for infant and toddler teachers on the topic of purposeful and aesthetically-pleasing environments is already being planned. It would be interesting to see how a workshop targeted specifically to infant/toddler teachers might compare with their results from the current study. Perhaps some of their answers might shift in rating, scoring lower or higher, depending on the information and pictures that will be presented in the new workshop.

Taking a tour of a classroom that clearly showcases all of the elements of APPROACH would be a helpful idea. Now that teachers have some basic information regarding each of the elements, seeing them in a real-live setting could be beneficial for many. Small group discussions could also be facilitated during this time to hear how teachers might begin implementing newly found ideas into their own classrooms.
A couple of teachers wondered how to design such environments on a budget and also, where can they obtain home-like items because they feel limited by materials found in catalogs (bright colors, plastic and non-durable toys, busy looking posters and carpets, etc). Perhaps one way to help teachers out with budget is by creating a workshop with resources on how to obtain some materials: child-made artifacts, parent and store donations, swapping things with other classrooms, etc.

An important point that was not stressed during the presentation, due to limited time, was the fact that change and design are processes that take time. Many teachers commented how excited they were to start remodeling their classrooms; however, achieving such meaningful and beautiful environments takes practice, patience, and the ability to be resourceful and adaptable to change. Ideas for upcoming trainings could include focusing on one element of APPROACH at a time. The first workshop could address the age-appropriateness of materials, the second one would look into ways of personalizing classrooms, the third one could provide ideas on creating private spaces, and so on. Facilitating such trainings could motivate teachers to reflect on their classrooms by seeing tangible results that meet their needs in a timelier manner as opposed as to feeling overwhelmed with so many ideas to tackle all at once.

**Future Research**

With regard to the topic of creating and designing meaningful and aesthetically-pleasing environments for children, future research could focus on the effects that a classroom’s physical environment can have on children under the age of two. Do the colors of a classroom, availability of age-appropriate materials, or incorporation of small, private spaces make a difference at all in their development? Or is their development
mainly attributed to the relationship with their caregivers? In addition, future research could also focus on whether or not children have a preference for certain environments. Do they prefer the bright colored, busy-walls, and cluttered shelves classroom? Or do they gravitate towards a more natural colored room with accent colors, cozy spaces, and simply organized shelves? In addition, which environment do they spend more time playing in? What about their attention span, is it longer in the busy and cluttered classroom or in the more organized and home-like room?

What are teachers’ observations of children’s behaviors and interactions in each environment? Did children seem more cooperative and autonomous in one environment versus the other? And moreover, how do teachers feel about their evolving programs in environments that engage them as well. For example, what is required not only to set up a warm, functional space, but also to maintain it? Who is eager to change while who resists it among the teaching team?

According to Edwards, Gandini, and Foreman (1995), educators in the United States are well aware of the importance of the environment. However, teachers continue to struggle with funding limitations, which likely forces them to make compromises in their classrooms. Have schools and day care centers suffered the consequences by failing to provide children with acceptable learning environments?

Seeing the effects of a well designed, aesthetically-pleasing classroom can have on children’s learning and development will perhaps encourage teachers to learn more about how to create inspiring and purposeful spaces. Furthermore, studying the environment systematically could demonstrate the worthy resources needed to provide all children with well-planned and high-quality learning environments.
REFERENCES


Creating Purposeful and Aesthetically Pleasing Environments for Young Children

Presenter: Brenda Salguero
Email: brenzsal21@yahoo.com

Goals for Today

At the end of this workshop you will:

- Understand the importance of classroom environments and their effects on children’s development
- Know about the National and State Standards for classroom physical environments (NAEYC and California Preschool Learning Foundations)
- Learn about an APPROACH that will help you remember key components when designing quality environments for young children
- Reflect on your classroom’s ability to meet children’s needs while providing an aesthetically pleasing environment
How is the Classroom’s Physical Environment Related to Children’s Development?

NAEYC and the Physical Environment

- One of the nine Standards for Accreditation
- Sets the stage and creates context for everything that happens indoors & outdoors
- Welcomes children and engages them in a variety of activities
- Supports the program’s philosophy and goals
California Preschool Curriculum Framework and the Physical Environment

When educators are mindful of the aesthetics, organization, and function of each area in the space, challenging behavior is likely to decrease while constructive, cooperative behavior increases.

High quality learning environments set the stage for social-emotional exploration and growth.
When children are presented with a warm, inviting and culturally familiar environment, they feel comfortable and secure.

A high quality environment that supports learning has 14 characteristics, amongst them: developmentally appropriate materials, private and public spaces, is aesthetically pleasing, organized learning areas, displays of children's work, and is reflective of diversity.
Classroom Effects on Early Academics: Reading and Writing

An Environment Worth Investigating… Science
The Physical Environment and its Effects on Early Academics: Math

Components of a Purposeful Environment for Young Children - APPROACH

A: Age-appropriate
P: Personalized
P: Private
R: Reflective
O: Open-ended
A: Autonomy
C: Challenging
H: Home-like
Age-appropriate

Personalized
Private

Reflective of Children’s Interests
What About Inclusion?

How Can a Purposeful Environment Cater to Parents?
APPROACHing Your Classroom

How well does your classroom APPROACH one that is purposeful and aesthetically pleasing?

Please complete the checklist
Take an extra one to share with your colleagues…

Discussion

- In what areas was your classroom strongest? In what areas was your classroom in greatest need?
- What are the implications for safety and clean-up?
- What challenges does APPROACH offer, what opportunities?
Any Questions?
APPENDIX B: APPROACH Environmental Checklist

Creating Purposeful and Aesthetically Pleasing Environments for Young Children
Presented by Brenda Salguero

APPROACH Environmental Checklist

Please complete the following checklist based on your classroom’s current physical environment. The information collected from this form will become an important part of my thesis project.

Keeping in mind the components of a quality environment, to what degree is your classroom?

5 = HIGHLY  4 = VERY  3 = SOMEWHAT  2 = A LITTLE  1 = BARELY

1. Age-appropriate ______
Materials, furniture, and overall physical content of your classroom are developmentally appropriate for the ages and stages of development. This includes safety concerns.

2. Personalized ______
Children’s own work is displayed in meaningful and thoughtful ways and is visible in most learning centers. This might also include neatly arranged cubbies where personal items may be kept, particularly for new children who may need transition objects.

3. Private ______
Classroom has clearly defined private areas/nooks meant for small group or solitary play – a space that was designed purely for this purpose such as a library area with soft furniture or a small loft or recessed area if available.

4. Reflective ______
Materials should represent children’s current needs/interests. Materials in baskets, posters, books, etc. are aligned with the topic children are currently researching or needing to work on. This often represents projects that can last weeks at a time.

5. Open-ended ______
Materials are best when they are multifunctional and can be used in more than 3 learning centers. Open-ended materials can include sticks, rocks, wooden cubes, containers, buttons, corks, seashells, etc. Creative use of materials in a variety of ways – including in the dramatic play areas, is important for children’s abstract thinking.

6. Autonomy _____
The arrangement of your classroom allows children to move around the space freely; materials are predominantly children-initiated vs. teacher-guided; and learning centers display materials for children’s use instead of being used as storage. Autonomy also implies choices for children to decide which areas of the classroom are most engaging to them and fosters their own decision-making skills.

7. Challenging _____
Materials that allow for both practice and challenge-level play and engagement help children set new goals for themselves and promote their sense of accomplishment (pride in learning and achieving).

8. Home-like _____
(Your classroom has at least 6 home-like elements: lamps, soft pillows, live plants, real wall décor, table cloths, table runners, rugs, picture frames, live animal)

ONLY if you rated the following areas as “highly” or “very,” please provide examples of:

1. Age-appropriate (provide 2 examples of how your environment meets this need)

2. Personalized (provide 2 examples – do not include documentation boards)

3. Private (provide 2 examples)

4. Reflective (provide 2 current examples)

5. Open-ended (provide 2 examples/names of open-ended materials)
6. Autonomy (provide 2 examples of how your environment meets this need)

7. Challenging (provide 2 examples of how your environment meets this need)

8. Home-like (provide 6 examples/name 6 home-like elements in your classroom)

Tell me a little bit about you. Circle the item that best answers the questions below.


Number of years teaching preschool?  < 1  2-3  4-5  6-8  9 or >

What is your highest level of formal education?
High School  GED  some college  AA  BA  MA  Other (please specify):

How would you rate this session?

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Suggestions for improving this workshop?

Thank you for your participation!