



The Environment as Third Teacher: Pre-service Teacher's Aesthetic Transformation of an Art Learning Environment for Young Children in a Museum Setting

Katherina Danko-McGhee
University of Toledo

ABSTRACT

This paper discusses how a family center in an art museum was transformed into a provocative environment that set the stage for dynamic learning experiences for both pre-service teachers and young children.

It was speculated that if pre-service teachers were immersed in an environment that was designed as a 'third teacher', then they would become inspired to design their own classrooms in the same spirit. This paper presents such an experience.

Introduction

This is a paper about a learning environment that accommodates both young children and pre-service teachers. The learning environment is in the Toledo Museum of Art Family Center where children and the university course, Art for the Pre and Primary Child, are taught. The course provides training for early childhood education majors about how to provide visual art experiences for young children. It was speculated that if these pre-service teachers were immersed in an aesthetic learning environment that was designed to provoke thought about various art works, it would empower the students to design future classroom environments in the same spirit.

This project has two components. The first consists of preparing an aesthetic classroom environment, in advance of the semester, to serve as a model for pre-service teachers. How this environment was designed will be discussed in detail.

The second component focuses on training pre-service teachers to design their own aesthetic learning environment and what they learned as a result of this experience.

Young Children's Learning Environments

In 1999, over 60% of U.S. children, ages three to five, spent their time in daycare centers and preschools (U.S. Department of Education, 2003). This situation is mirrored

internationally. For example, with over 800 millions of 0 to 6 year old children in the world, more than two thirds benefit from early childhood programs (Korintus, 2000).

High enrollment figures are due to parents finding it economically necessary to seek employment outside of the home. Some children can spend as much as 35 hours each week in these environments, which in most cases, are not aesthetically nor intellectually stimulating. Tarr (2001) notes that,

Flatly colored, outlined, stereotyped images of posters and bulletin board borders talk down to children and assume that they are not capable of responding to rich, diverse images and artifacts (p.35).

Gandini (1998) contends that early childhood educators are challenged by funding limitations which results in, "...discouraging physical conditions, especially the lack of natural light and of cluttered space" (p.163). Such conditions result in poor learning environments.

We shortchange our children when we provide them with an uninspiring learning environment. This can negatively impact learning. If children are not motivated and inspired, then they will not learn. Brain research suggests that there are "...potentially lasting negative effects on the brain as a result of extremely poor environmental conditions" (Bergen & Coscia, 2001, p.65). Therefore, stimulating learning environments are essential for young children's growth.

The Importance of an Aesthetic Environment that Serves as a Third Teacher

Environment is defined as, "surroundings or associated matters that influence or modify a course of development" (Webster 1989, p.204). The synonyms included in this definition are: "ambience, ambient, atmosphere, climate, medium, milieu, mise-en-scene, and surroundings" (Webster 1989, p.204). The term ambience most closely aligns itself with the type of environment that is described in this paper, which is one that is well designed with pleasing colors and materials that are intellectually stimulating and aesthetically displayed that "...serve to educate children's attention to design and detail, and to contribute to the development of an alert and active response to the world" (New, 1998, p.287).

Kerka (1999) suggests that an environment that nurtures learning provides the necessary resources and time for investigative play and experimentation. It is one in which children are free and motivated to make choices and to explore for answers without feeling intimidated. Opportunities such as these provide the development of critical thinking skills, which is defined for this paper as, "Thinking that requires making decisions and judgments." (Schirmacher, 2006, p.381)

The environment in which the children are expected to grow is so important to the learning process that the Reggio Emilia schools in Italy have stated that it acts as a third teacher (Gandini, 1998). Such an environment is one where physical space nurtures concentration, creativity, and the motivation to independently learn and explore (McKellar, 1957).

The concept of environment as the third teacher is built upon several theories, one of which serves as a foundation for this paper: constructivism. Derived from the theories of Piaget,

Constructivists believe that learning is accomplished through exploring, experimenting, and manipulating objects or materials. ...therefore the classroom should contain a variety of materials that can be explored and combined in many different ways" (Isbell & Raines, 2003, p.15-16).

How does aesthetics fit into this picture? Let us begin with defining the term. According to Isbell and Raines (2003), "Aesthetics is an area of art concerned with feelings and responses to color, form, and design" (p.117). Eisner (1992) suggests that experiencing aesthetic moments, "...is not limited to things in galleries and museums" (p.5). Aesthetic experiences can take place in common everyday places, including classrooms where engaging materials are provided.

The way materials are presented to children will determine how creatively they can use them (Duffy, 2002). McKellar (1957) and Gandini (2005) reinforce this point by noting that the way a space is aesthetically organized can assist in concentration and can increase one's motivation to work in creative ways.

Eyestone-Finnegan (2001) also sees the importance of an aesthetic environment and suggests that images and objects should be displayed that relate to the interest of young children. Gandini (1998, 2002) adds that environments and the way they are set up by teachers should become invitations for children to construct and explore knowledge.

Such an environment may seem very challenging for teachers to create, especially ones that are unfamiliar with the Reggio Emilia approach and its theoretical underpinnings. Many do not know where to begin, as indicated by Wurm's (2005) observation of teachers who have visited the schools in Reggio Emilia, "They were inspired about the possibilities they saw in Reggio, but many of them were confused about the first steps to move their programs in that direction" (p.4). A paradigm shift in pedagogical thinking is required before teachers can begin to alter the learning environment. Training or re-training is often the answer to begin this evolutionary process.

But, one must be cautious about transporting the Reggio Emilia approach to other places around the world. Rinaldi (1995) notes that, "The schools in Reggio Emilia could not be just anywhere and no one of them could serve as an exact model to be copied literally elsewhere" (p.6).

Therefore, it is prudent to bear in mind that the present project, while inspired by Reggio Emilia, is not implanting it in its entirety. Perhaps it might be better to say that the thinking for this project is on a parallel track. Only one small Reggio Emilia component, the environment, was of interest here. Because of the setting, a museum family center, and the way that it operates on a daily basis, incorporating all components of the Reggio Emilia approach was not feasible. Therefore, the environment, as described in the next section of this paper, is merely inspired by the principles of Reggio Emilia.

Phase One: The Transformation of an Environment - Setting the Stage for Learning

One of the challenges of teaching pre-service teachers is demonstrating how to translate theory into practice. Therefore, it was speculated that a learning environment designed as a third teacher would afford students the opportunity to become actively engaged in its transformation throughout the semester, and that they would be empowered to design their own future classroom environments in this same spirit.

The classroom for a university course, Art for the Pre and Primary Child, is located in the Toledo Museum of Art Family Center - a place children visit prior to going into the museum galleries. It is here where children can engage in various art/play experiences, many of which are related to art works in the museum. The Toledo Museum of Art is considered to be one of the finest in America with an eclectic collection of glass, decorative arts, African, American, Ancient, Asian, European, and Modern pieces of sculpture, paintings, and prints.

While the Family Center in this museum is a very popular space, it was in need of a major facelift in 2005. The space was cluttered and disorganized with walls that needed painting and toys that were randomly strewn about. (See Figure 1)



Figure 1: The Family Center Prior to the Transformation

Because this is a museum setting, it was believed that this environment should convey an aesthetic ambience that would be engaging to young children.

This environment was re-designed by the university professor for both the university students and the children that use this space. The professor has a seven-year history of working collaboratively with the museum on early childhood programming in the Family Center.

Unlike what is done in a true Reggio setting, the children did not directly contribute to this re-designing process. This was due to the way the Family Center operates. While children have opportunities to visit this space three times a week, there is no guarantee

that the same children will pay return visits. Therefore, any continuity in learning experiences is almost unattainable, which is a very important aspect of a Reggio setting.

What propelled this project were the artworks housed in the museum and some of the important characteristics of the city. Previous research (Danko-McGhee, 2006) with young children and their aesthetic choices for particular artworks in the museum galleries served as the impetus for creating this newly designed environment. In this respect, children's voices were heard in the designing of this space.

Because the city is a port that is located just off of the shores of Lake Erie, colors were chosen to reflect the local environment. Pastel blue, green, aqua, and white gauze fabric was suspended from the ceiling in a ribbon-like fashion to conceal fluorescent lights. The way the fabric was suspended looked like billowing waves of water. This first change to the environment created a more tranquil setting. These marine colors were echoed in the curtains made from the same fabric. They were hung in a billowy fashion to soften the rigid black-framed windows. (See Figure 2).



Figure 2: Draped Ceilings and New Curtains

The sterile windows beckoned for more intriguing materials to complement the curtains. The solution was glass building blocks used to construct glass walls in architectural structures. Seven to nine blocks were strategically placed on each windowsill in a sculpture-like fashion. They were stacked, one on top of the other, leaving some empty spaces in between to break up the composition. In these empty niches were placed clear plexi-glass boxes with lids. Each box was filled with colored water that complemented the colors in the ceiling fabric and curtains. (See figure 3).

A different glass block arrangement was installed on each windowsill. What visually tied them all together was the color scheme of greens, purples, and blues. As light reflected through the glass blocks and plexiglass containers, it provided an aesthetic appeal to the room and has become the focal point of interest to visitors. Both university students and children enjoy how the colors change during different times of the day.



Figure 3: Glass Blocks on Windowsill

Adjacent to the windows, a light table was installed. A variety of plexi-glass containers and colored water were provided. Children may fill the containers with water and experiment with color mixing. Their new creations may be added to the windowsill.

Another section in the Family Center is the Home/Dress-Up Area. The small wooden chairs were upholstered in the fashion of a chair on display in the museum. The fabric was a blue and gold tapestry, which complemented the color scheme of the the family center. The table and chairs were painted an antique gold, giving them a regal appearance. The table, with a golden fruit bowl, was placed on a blue tapestry carpet (See Figure 4). Care was taken in selecting the items for this area because children had indicated a strong preference for tapestry chairs and ornate dinnerware in the museum (Danko-McGhee, 2006).



Figure 4: Tables and Chairs

Another area in the family center has a puppet theater. This was upholstered in the same tapestry fabric that was used on the chairs in the Home Center. A large painting reproduction from the museum, "Architect's Dream" by Thomas Cole serves as the

background scenery (See Figure 5). Postcards of characters from other paintings were made into puppets which ranged from prehistoric goddess figures to knights on horseback. They were attached to the end of wooden sticks. To operate the puppet theater, children stand on a small bench. From above, their rod-puppets can be placed on the stage in front of the art reproduction. They are free to create their own story using any characters they wish.



Figure 5: Puppet Theater

The building block area was transformed into another learning space. A large table was covered with a beige fabric where a variety of natural stones were placed. Some beginning stone patterns were made to provoke children into continuing the pattern or to create their own. On the wall were placed reproductions of Andy Goldsworthy's art that served to inspire the children as they created their own designs. (See Figure 6).



Figure 6: Natural Stone Designs

A literacy area is surrounded by bookshelves that hold a variety of children's books. A tapestry rug was placed on the floor for children to sit as they read. A small corner cabinet for children was installed to act as a place to practice their writing skills. On the wall hangs a reproduction of illuminated manuscripts that are housed in the museum. The history of this art form accompanies the visuals for parents and their children to read together. On top of the cabinet are placed the necessary writing tools for children to make their own illuminated manuscripts: small glass containers of liquid watercolors , parchment paper, and feather quills (See Figure 7). Inside the cabinet, children find alphabet picture books and examples of writing systems from other cultures. They are free to peruse these materials and use them in any way they desire.



Figure 7: Illuminated Manuscripts

This carefully prepared environment helped to usher in our new academic year when the university students arrived.

Phase Two: Training Early Childhood Pre-Service Teachers to be Environmental Designers

Twenty pre-service teachers participated in the course. Eighteen of them were third year students and two were second year students in a four year early childhood teacher preparation program.

A pre-test survey instrument that allowed for open-ended responses was given to

the students at the beginning of the semester. Data collected using this instrument is displayed in Table I and indicates that 100% of students felt that the learning environment was important for young children. However, their responses were very

ambiguous as to how an environment can support quality learning experiences. For example, 10% indicated that the environment should be “inviting”, but were not specific about what that meant. A bright and colorful environment was suggested by 70% of the students. Five percent felt that displaying children’s artwork along with other artworks was important. Another five percent felt that the learning environment should be creative, and 10% believed that it should provide multi-sensory experiences, but gave no explanation about the nature of these experiences.

When asked about their knowledge of the environment serving as the third teacher (See Table II), 85% did not know what this meant, while 15% had some awareness of the term. Knowledge of the Reggio Emilia approach was mixed, with 65% unfamiliar with it; 1% had some knowledge about it; and 34% were familiar with it as a result of previous classes.

TABLE I

Student Responses to Pre-Test Survey Regarding the Learning Environment for Young Children
n=20

Criteria for a Quality Learning Environment	Student Responses in Percentages
Learning environment is important for young children	100% (20)*
Environment should be inviting	10% (2)
Environment should be bright and colorful	70% (14)
Children’s artwork and other art work should be displayed	5% (1)
Environment should be creative	5% (1)
Environment should provide multi-sensory experiences	10% (2)

*indicates the number of students

TABLE II

Student Awareness of the Environment as Third Teacher
n=20

Student Awareness of:	Unfamiliar	Somewhat Familiar	Familiar
The Environment as Third Teacher	85% (17)*	15% (3)	0%
Reggio Emilia Approach	65% (13)*	1% (1)	34% (6)

*indicates the number of students

TABLE III
Student Self Conceptions
n=20

Students felt they had:	Yes	Some	Very Little	None
Artistic Ability	0%	5% (1)*	95% (19)	0%
Creative Skills	0%	5%(1)	95% (19)	0%
The ability to create a Reggio inspired environment	0%	0%	10% (2)	90%(18)

*indicates the number of students

Often, early childhood educators do not feel that they have the ability to create an aesthetic environment. This was the case with these pre-service teachers. Table III reveals that ninety-five percent indicated that they had little artistic ability and were not creative. Ninety percent of them felt at a loss when asked about creating an environment in the spirit of Reggio Emilia. As a result of the data, it was determined that these students needed to be provided with appropriate learning experiences in order to be more competent in designing an aesthetic learning environment. These experiences were provided for them in the course.

At the beginning of the semester, students were introduced to the learning environment. They were free to explore the room and to engage in the experiences provided in order to better understand the learning opportunities afforded to children.

Students were asked to explain how the environment challenged them to think and to conjecture about how young children might react to this space. There were discussions about Reggio Emilia and the environment that serves as the third teacher. Students were required to read, *In the Spirit of the Studio* by Lella Gandini, Lynn Hill, Louise Cadwell, and Charles Schwall. They watched a DVD from the North American Reggio Emilia Alliance entitled, *Environments*, which showcases good examples of aesthetic environments that serve as the third teacher.

After being provided with the theoretical underpinnings, students were challenged to make some additions to the family center. Using the environment designed by the professor as a launch pad, they were required to develop their own ideas. Groups of students decided on which area of the classroom that they wanted to enhance. They designed a plan that included their ideas and the means by which they would implement them. Continuous feedback was offered by the professor.

Students also had to make sure that their designed environment met the following criteria: a) it had to be aesthetically appealing, b) with experiences that were open-ended and provoked critical thinking, c) while focusing on artworks, housed in the museum that were chosen by children as their favorites

Once plans were finalized, students were ready to become environmental designers.

Two student-designed environments are presented in the following section:

Student Environmental Designs

Project One: Light Table- Stained Glass Windows

The window area offered an arena for children to explore the making of stained glass windows. This was an invitation to learn more about glass and serves as a link to the new Glass Pavilion that recently opened at the museum. During the opening event, Tiffany stained glass windows were on display as a special exhibit.

Materials for making stained glass windows were placed on the light table. They included assorted shapes of clear colored acetate that were framed by heavy black cardboard (See Figure 8). Children explore color mixing by overlapping the colors as they construct a stained glass composition directly on the light table. Reproductions of Tiffany's stained glass windows served as a backdrop to this area.



Figure 8: Stained Glass Window – Acetate Pieces on Light Table

Project Two: Dramatic Play:

The Country Gallants by John George Brown, served as the focal point for this area. This is a painting of three children in an autumn forest scene. There are warm tones of yellow and orange as the sun streams through the trees. In the foreground is a brook. There is a log that is strewn across the water. One boy has already crossed the log. He is waiting on the shore for the other children to cross.

The students hung a reproduction of this painting on the wall. Framing it, they placed silk autumn leaves and old tree branches. On the floor, they placed light blue cellophane to simulate water. As in the painting, students found a log to place over the water (See Figure 9). This served as an invitation for children to balance themselves by walking across it.



Figure 9: Country Gallants – Dramatic Play

Clothing, similar to what the children were wearing in the painting, was placed in a basket on the floor by the painting. These items included overalls, hats, and jackets. This was another invitation for children to explore dramatic play.

These are two examples of how students began to think in terms of setting up an environment as the third teacher by providing materials that would provoke thought and exploration for young children.

Results of the Project - Voices of the Children:

Children's responses to the environment were recorded by the students, who sat in an obscure corner of the Family Center and observed. Their observations were recorded in a written format, using an observation form provided by the professor.

Children enjoyed the change in the environment and felt that it was a wonderful place for contemplation. One little child liked to come in, lay down on the floor, and look up at the fabric that was billowing from the ceiling. "It is a calming place", said the mother. "I love the billowy material. It looks like clouds."

Some of the students were able to observe the children as they responded to the environment. They found that the children enjoyed playing on the log that crossed the simulated water in the dramatic play area. Using creative license, the children added

their own props, as well. For example, nearby there was a large wooden toy that served as a 'see-saw'. It was a half-moon shape so that it could rock back and forth. There were seats inside for children to sit. The children moved this 'see-saw' into the simulated water and used it as a 'boat'. They dressed up in the clothing that was provided in the basket, got into the boat, and pretended to sail down the stream.

When students returned the following week, they found this 'boat' and little paper fish (created by the children) in the water. As a response, the students made fishing poles out of twigs.

The next week, children used the poles to go fishing. But also, one child found a bucket. He placed wooden blocks inside, climbed in the 'boat' and said, "Got to feed the fish", as he gently dumped the blocks into the 'water'.

This is a good example of how the environment was an open invitation for children to respond in creative ways. When props that they wanted were not available, children made their own. This displays their use of critical thinking skills. Students responded to the needs of the children by providing them with the necessary materials to facilitate the learning process.

In the Home Area, the children were observed working very hard on setting the 'dinner table' and preparing a 'meal', while others selected and coordinated outfits to wear.

One child took on a British accent and obsessively modeled several mismatched outfits for the adults around her. "Isn't this stunning? I have one in pink and blue", as she twirled about in her princess inspired ensemble. Two other children 'eating dinner' engaged in conversation. One of them said, "You must eat your apple and chicken before I give you pie."

Here again, children have responded in creative ways. They elaborated on the use of materials provided, such as using small wooden blocks to serve as 'food'. The tapestry chairs and golden bowl of fruit set the stage for children to respond in a more sophisticated way – they pretended they were attending a 'dinner party' as opposed to a regular daily supper. The ambience of this area set the tone for this kind of response.

The children enjoyed the 'dinner party' theme and were upset when they had to leave this area. Trying on the clothes seemed to fuel their imaginations – transforming them into different roles. The pretend food allowed them to be 'adult like' and to make decisions about what to 'eat' and how to set the table. The use of critical thinking skills is evident in the way children creatively responded to this area.

The light table area was appealing to the children as well. Michael, age 2, started to play with the colored acetate shapes. He picked up a yellow one and noticed that it was the same color as his baseball cap. Then he picked up other colors and overlaid them onto his yellow cap noticing the color changes. He used his critical thinking skills as he explored color mixing, noticing changes as he held each color over his yellow cap.

As indicated by these observations, children responded in creative ways. In a true constructivist style, they learned by exploring, experimenting, and manipulating the objects that were presented to them. It is also important to note that the pre-service

teachers were active partners and co-constructors in the learning process. They fulfilled their role as observers, participators, and as a resource to the children.

Results of the Project - University Student Responses:

At the end of the course, pre-service teachers were evaluated on their environment and given a post-test survey to measure their learning from this experience. They were graded on the successfulness of the environment using the criteria mentioned earlier in this paper. There were five environmental areas designed by the students. Table IV summarizes the results.

TABLE IV
Assessment Results of Student Designed Environments
n=5

Criteria	Excellent	Above Average	Average	Below Average	Poor
1.)Aesthetically Appealing	60% (3)*	40% (2)	0%	0%	0%
2.) Provokes Critical Thinking	60% (3)	20% (1)	0%	0%	20% (1)
3.)Experiences are open-ended	80% (4)	0%	0%	0%	20% (1)
4.)Experiences nurture creativity	60% (3)	20% (1)	0%	0%	20% (1)
5.) Focus is on an artwork from the museum	100% (5)	0%	0%	0%	0%

*indicates the number of student designed environments

As indicated in Table IV, most student groups were successful in meeting the criteria at the 'above average' to 'excellent' level. This suggests that class discussions and a previously prepared environment were helpful in attaining these results.

Post-test survey (See Table V) results are as follows. When asked about how a classroom environment can inspire and sustain innovative thinking and learning for young children, 75% indicated that the experiences provided should be open-ended. Seventy percent thought that the learning environment should be aesthetically pleasing. In providing an engaging learning environment, 65% felt that the 'designing an environment' experience helped them to be more reflective. 100% felt challenged to come up with an environment that would facilitate learning and also be aesthetically pleasing. They also felt challenged in using critical thinking skills to solve problems that they faced.

TABLE V

Students Impressions about Designing an Environment – Post Test Survey

n=20

1.) Criteria for a Learning Environment	Percentage of Responses
A.) Experiences should be open-ended	75% (15)*
B.) Aesthetically Pleasing	70% (14)

2.) Learning from the Experience	Percentage of Responses
Helped them to be more thoughtful	65% (13)*
Felt challenged when designing the environment	100% (20)

*number of students responding

Many of these pre-service teachers felt inspired to design similar environments in their own future classroom as indicated by Danelle in her statement, "My classroom will inspire creative and innovative thinking because it can be filled with so many open-ended experiences." She adds, "When children have multiple languages to work with that are laid out for them to use, they have the freedom to explore which requires the use of critical thinking skills."

Conclusion:

Current educational theory purports that meaningful learning encounters require the learner to become actively engaged with distilling new information (Hanson, 2002; Manery, 2003; Wilkinson, McNutt, & Friedman, 2003). Active engagement in a learning setting affords students an opportunity to elevate to higher levels of cognition in order to make changes. Such an experience was provided to the pre-service teachers who participated in this project.

It is difficult at this point to predict if these students will actually follow through and design inspiring and aesthetic environments in their future classrooms. One can only speculate that they will. The seeds have been planted in this class with hope that they will sprout in other learning spaces.

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About the Author: Kathy Danko-McGhee

Dr. Kathy Danko-McGhee is currently a Full Professor at the University of Toledo and serves as the Early Childhood Art Education Coordinator in the Department of Art. She is also a consultant for the Toledo Museum of Art Early Childhood Programming.

After several visits to the Reggio Emilia schools in Italy, Kathy became very interested in the importance of an aesthetic learning environment for young children. She received grant funding to change the environment of the Toledo Museum of Art Family Center where her university class meets. She continues to have an interest in the environment, but is currently working on research with babies to determine their aesthetic preferences for a variety of images. This line of research has been of interest to Kathy for over 20 years.