Light and Shadow Lab: Interest, Experimentation, Collaboration, & Wonder

Mollie Peoples

Follow this and additional works at: https://scholarworks.uark.edu/ghesuht

Part of the Early Childhood Education Commons, Educational Methods Commons, Elementary Education Commons, and the Other Education Commons

Recommended Citation

https://scholarworks.uark.edu/ghesuht/15

This Thesis is brought to you for free and open access by the General Human Environmental Sciences at ScholarWorks@UARK. It has been accepted for inclusion in General Human Environmental Sciences Undergraduate Honors Theses by an authorized administrator of ScholarWorks@UARK. For more information, please contact ccmiddle@uark.edu.
The Light and Shadow Lab:
Interest, Experimentation, Collaboration, & Wonder

Mollie M. Peoples
University of Arkansas
April, 2019
# Table of Contents

Abstract  
Introduction  
Literature Review  
- Theoretical and Conceptual Framework  
Development Plan  
Design Process  
Discussion  
Conclusions/Recommendations  
References  
Tables, figures, sketches, photos, journals, etc.
Abstract

This creative project focuses on the experimentation and exploration of light and shadows with the children at the Jean Tyson Child Development Study Center (JTCDSC). The creation, development, and implementation of the light studio was influenced by many approaches and concepts that surround early childhood development. It incorporated inspiration from my travels to Italy, where I studied the Reggio Emilia approach in context. In Reggio Emilia, I had the opportunity to visit the Loris Malaguzzi International Centre, local schools that implement distinct approaches to early childhood education, and The Creative Recycling Centre Remida. The light studio at the JTCDSC incorporates both these experiences and the education I have gained in my college career. It outlines the importance of play in children’s development, as well as the importance of the experiences and environments we provide them. In this paper I will discuss and emphasize the opportunities the light studio has created for children and what this means for their future. This paper will also highlight the role that recycled materials and loose parts played in the production of the light studio as well as their ability to transcend their initial purpose and be used in a multitude of ways.
Introduction

Children’s development and growth during the first few years of their life is a crucial time. As children grow they test new physical, emotional, and social abilities. A large contributor to that ongoing development is the environment in which children are submersed. The Reggio Emilia approach considers the environment the “third teacher” (Hall, 2013, p. 29). This emphasizes the important role adults play in building a setting that will provide rich and meaningful experiences for children. The environment includes things like furniture, materials, aesthetic appeal, and organization. An educator’s beliefs and values are represented in the environment they arrange. Ultimately, the space reflects a teacher’s idea of the child and what they believe children are capable of. When considering children of different age groups, the environment must be developmentally appropriate and suite each child in different forms.

The space described in this paper, the light studio, has the capability to meet those demands with distinct areas for all ages. However, the material can just as easily be spread across ages and used as the teachers feel necessary to further a child’s development. The light studio was created in order to further development and early learning and provide children with a variety of provocations that they otherwise may not have had. It is another pathway, in addition to their home and classroom environment, that children at the JTCDSC have to build upon their existing knowledge and grasp new concepts and ideas. Within the light studio is an array of complex materials and loose parts. The most distinguishable are expensive light tables, projectors, flashlights, etc. The ones that lie beneath the radar and may go overlooked to the untrained eye, is an
abundance of recycled, reclaimed, and natural objects. According to Ontario’s early years pedagogy (2014, p.20), in order to support children in investigation, imagination, and deep thinking, the environment should encompass “complex, open-ended materials that children can use in many ways”. So often, early childhood classrooms are filled with store bought toys and flashy objects that serve a particular purpose. This in itself inhibits children from creative thinking and alternative representation of materials. Inside the light studio, one can find objects like: colored straws, paper, and plastic bottles, thread, foil, wooden objects, seashells and plenty more. All of these items have a known purpose, but can also transform to become something else. They offer children the chance to experiment with objects and explore with open-ended learning.

**Literature Review**

In order to understand the pedagogical decisions of the space that is the topic of this paper, it is important to understand the theories of Vygotsky and Piaget, and to understand the key concepts of the Reggio Emilia approach.

**Vygotsky**

Lev S. Vygotsky was an accredited Russian psychologist, well known for his theories surrounding child development. An often quoted passage from Vygotsky states: “In play a child is always above his average age, above his daily behavior; in play it is as though the were a head taller than himself. As in the focus of a magnifying glass, play contains all developmental tendencies in a condensed form; in play it is as though the child were trying to jump above the level of his normal behavior” (Bodrova & Leong, 2017, p. 371). Vygotsky’s theories support the idea that children must be actively
engaged with their environment. He argued that in order for a child to master an object and its potential, play must be present. Children must be playing and manipulating an object in order to understand its diverse abilities and properties. In conjunction with play, symbolic and abstract thinking lead into a child’s ability of higher mental functions. Vygotsky defined higher mental functions as “behaviors that are sign-mediated, intentional, and internalized” (Bodrova & Leong, 2017, p. 373).

As children progress through childhood, Vygotsky argues, they obtain knowledge and skills that are dependent upon their zone of proximal development (ZPD). The zone of proximal development is defined as “the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers” (Nilsson & Ferholt, 2014, p. 924). He believed that play prompts children to think intrinsically and enhances their desires. Vygotsky states that children’s greatest achievements are possible in play, and those achievements will become basic level of real action and morality (Nilsson & Ferholt, 2014). This concept infers that as children are playing, their imagination is growing and ever-changing. It also means that children’s thoughts are constantly evolving to greater heights and depths. Eventually, as their play continues over time, it will organically surpass its previous position. Thus producing play that flourishes and becomes more complex over time.

Piaget

Cognitive Development.
In addition to Vygotsky, the theories of Jean Piaget are also critical to this creative project. Piaget was a Swiss psychologist whose life work was devoted to developing theories involving the cognitive development of children. Piaget is most known for his theory of constructivism. The concept of constructivism is best described as “Knowledge is actively constructed by the learner, not passively received from the outside. Learning is something done by the learner, not something that is imposed on the learner” (Sjøberg, 2010, p. 3). Piaget argued that “children’s intelligence is rooted in two biological attributes found in each living creature: organization and adaptation” (Simatwa, 2010, p. 366). Children organize the information they obtain and process into systems and those systems are integrated into higher order processes that link children’s learning.

Piaget’s research on children’s development evolved into four phases of advancement: sensorimotor (0-2 years), preoperational (2-7 years), concrete operational (7-11) years, and formal operational (11-15 years). The sensorimotor stage involves the development of an infant’s mental and cognitive attributes from birth until the appearance of language. This stage is also characterized by the child’s ability to develop the sense of object permanence. Object permanence is when the child develops the skill to find an object after it has been displaced or taken out of their range of sight (Wood, Smith, & Grossniklaus, 2001). Following the sensorimotor stage is the preoperational stage. This stage is characterized by increased language ability, symbolic thought, and limited logic. Often, in the preoperational stage, children engage in problem solving tasks involving a wide range of material (blocks, books, and cars). The next stage is concrete operational
stage. During this stage, children experience tremendous cognitive growth. Their language and basic skills accelerate at an incredible pace. The final stage is formal operational stage. During this stage, children become increasingly “able to construct hypotheses to account for particular phenomena, deduce from these hypotheses that certain events should occur, and test the hypotheses by finding out if the events do occur” (Day, 1981, p. 45). Additionally, children are developing the ability to think in abstract patterns and strategies that they may not have been able to before. Each of these phases provides a foundation for the next, progressively becoming more complex. The stages are sequential and a learner must have sufficient experience in each phase before moving to the next.

**Reggio Emilia Approach**

Piaget’s emphasis on ever-complex constructivist learning, along with Vygotsky’s ideas about the ways in which children learn through play, underlie the creation of the light studio. However, the project is also deeply rooted in the traditions of the REggio Emilia approach.

Reggio Emilia is a small city in Italy. It birthed a revolutionary childhood education approach that is “deeply rooted in the town’s long history of resistance to social injustice and its alliance with Italy’s socialist and communist parties” (New, 2007, p. 6). Shortly after World War II, parents began claiming abandoned buildings and strived to have them turned into new schools for children. Loris Malaguzzi, an early childhood educator, was inspired by the parent’s initiative and joined their efforts to secure the children’s future regarding childcare. Their life’s work has created one of the
most influential childhood education approaches. The Reggio Emilia (RE) approach has a positive belief in the image of the child. It is built on the idea that each child “has the desire to connect with others, to engage in learning, and to enter into a relationship with their environment” (Dodd-Nufrio, 2001, p.236). This approach is deeply rooted in the idea that children are able and willing individuals. Similar to Piaget’s perspective, the RE approach is centered on the children being responsible for their own learning.

The curriculum designed with the context of the children’s interactions in mind. According to Arseven (2014, p. 168), “the curriculum is decided with dialogues between children, teachers, and the environment”. It does not have a set outcome or standardized results children must meet. Instead it takes into account their previous experiences and knowledge, builds on it, and furthers their development according to the needs they have. It is heavily dependent upon documenting the children’s learning with running records, anecdotes, pictures, dialogue, and projects. This is the main way the children’s learning is displayed and translated for others to view.

The RE approach recognizes the teachers as learners alongside the children. It emphasizes the idea that teachers are “compasses and set on the adventure of learning with children” (Arseven, 2014, p. 169). However, the teachers are responsible for providing and environment and material that broaden the range of possibilities children have to further their learning and exploration. This idea is at the core of the light studio project.

**Development Plan**
Initially, this space was a research wing in the Jean Tyson Child Development Study Center (JTCDSC). It was used primarily for storage and miscellaneous materials rather than research. Dr. Shelley McNally, the director of JTCDSC, and my academic advisor Dr. Laura Herold, approached me with the idea of building a light studio in order to better utilize the space. In order to build the light studio and obtain all the materials that would fill it, they applied for a technology grant for $5,000 through the University of Arkansas. Grants such as this are normally awarded to science or architecture departments and for large items related to those fields. However, the grant was awarded to us and was used to supply the entire room. Additionally, the Human Development and Family Sciences department at the University of Arkansas matched $500 in funds. Dr. McNally, Dr. Herold, and I compiled a list of materials and ordered them. It includes items of all sizes and caliber. However, it must be noted that list does not include the vast number of materials that did not need to be purchased. Perhaps the most abundant materials that stock the light studio were, in fact, the easiest to find. Recycled objects and loose parts play a large role in the purpose of the light studio. The idea of providing such materials only came after my trip abroad.

The production of the light studio initiated in the spring of 2018. In the summer of 2018, I studied abroad with Dr. Herold and Dr. McNally in Rome, Italy. From Rome we traveled to
Reggio Emilia where we had the opportunity to study the Reggio Emilia approach in context. A majority of our time was spent at the Loris Malaguzzi International Centre (LMIC). The LMIC labeled itself as, “a dedicated meeting place where professional development and research intersect for people in Reggio Emilia, Italy and the world who wish to innovate education and culture” (Loris Malaguzzi International Centre, n.d.). The center is filled with ateliers, or studios, and exhibitions that highlight different educational content and fields of knowledge.

It was at the LMIC that we explored the Ray of Light atelier. From first glance, inspiration struck and our outlook on the light studio shifted. This can be seen in the figures 2 and 3. It was here that the relevance of loose parts and recycled material in children’s learning became visible. The atelier was filled with items that can be found around a school or home and able to be used in diverse ways. The items ranged from colored plastic bottles and old CD’s to tissue paper and mirrors. The nature of the Ray of Light atelier had the power to take full-grown adults and turn them back into children. I found myself experimenting and tinkering with the materials in ways I have not done in years. There were individual spaces to explore color, saturation, reflection, shadows, refraction, photography, black light and so on. There was no shortage of opportunity to acquire information through play. The atelier had the advantage of being built by a team of professionals whose expertise ranged from architecture, science,
LIGHT AND SHADOW LAB

photography, and education. However, the team that built this space expressed great emphasis that provocations such as these can be provided by anyone and from the simplest materials. This is one reason loose parts play a dominant role in the Reggio Emilia schools and their teaching.

The materials that fill local Reggio Emilia schools come from The Creative Recycling Centre Remida. On our trip we were able to visit Remida and view all of the incredible supplies it houses, seen in figures 4 and 5.

For 15 years, Remida has collected discard materials from companies that would have otherwise thrown them away. School representatives and teachers can obtain materials from Remida by simply paying an annual $50 fee. This fee clears an entire school for gathering supplies at Remida and has no limit on the amount. The purpose of Remida is to give new life and identity to objects that at face value seem to have no purpose, while simultaneously reducing waste in their community.

Remida was inspiring and enlightening, just as the Ray of Light atelier was. It solidified the impact that a simple object can have on children’s learning and paved the way for a new outlook on the light studio’s evolution.

After viewing both settings, the generalized view of the light studio was no longer labeled one thing or limited to a certain concept. The limited thoughts had been lifted and the development of the light studio continued in a more broad approach. As a result, I began incorporating more reusable and inexpensive materials into the light
LIGHT AND SHADOW LAB

This work began in June of 2018, and was completed in December of 2018. Reggio Emilia was an impeccable example of how indirect guidance affects children’s development and behavior. This was another shift that was necessary in the light studio to better guide the children in their exploration. Before visiting Reggio, there was a high level of structure in the light studio that gave it the presence of a classroom. Afterwards, it gained more independent space and an open concept for the children to move around the room and manipulate the materials as they need or feel drawn to.

**Design Process**

The space in which the light studio exists is large and could accommodate a version of almost any intentional space an educator could imagine, big or small. It has high vaulted ceilings, large unobstructed walls, double sided mirrors for observations, and an open floor plan (figure 6).

As the environment is an essential part of children’s learning, it was important that I placed materials a way that set developmentally appropriate boundaries but also gave the children freedom to inquire about their surroundings. As I sketched out many different versions of the light studio, they became more and more spread out. In the beginning, I had two large tables in the room along with the light tables and shelving to hold the loose materials. It was initially crowded and impeding. Then, as I began taking the point of view of the children and really resonating with the purpose of the room, I took out the
classroom tables and opened up the space more. Over the 10 months of development, the room shaped into a space that flowed from each part and was effortless to maneuver.

The threshold or entrance to the light studio is sectioned off from the rest of the room and separated by two large blackout curtains (figure 8). The inspiration to create a threshold into the light studio originated from my experience at the Ray of Light atelier (figure 7). At the atelier, there was a glowing tunnel of all colors that lead you in (Figure 24). The creators of the atelier explained that the threshold prepared and primed you for the experience you were about to have. Even though the entrance to the light and shadow lab at the JTCDSC is a small area, (roughly 4ft by 4ft) it serves a larger purpose. The threshold efficiently transitions the children from their classroom to the light studio. Along the right wall in the threshold is a display of patterned rope lights mounted to the wall. Along the left wall, four small squares are mounted on the wall, just high enough for toddlers to reach. These squares are thermal energy capturing, meaning that when heat is applied to them, they display the color of gradual warmth that is emitted. These allow children to experience the concept of thermal energy.
and what it means for energy to be transferred from source to source. The color change of
the squares is only visible in light, which causes the children to problem solve and find
ways to more clearly see the impact of the heat exchange. This is
visible in figure 9. In sum, the threshold provides a taste of the
light studio, if you will. It gives glimpses of what is to come when
children finally move past the curtains and enter the main space.

In the back right corner of the room is a wall covered by
mirrors. This space was initially constructed to accommodate infants
and toddlers as they journeyed into the light studio. The mirrors on the wall would allow
them to see the entire room even if they weren’t mobile. Many of the materials in the
room are also hazardous for children under the age of three. It is because of this that I
needed to make the infant/toddler area intriguing and stimulating enough that they were
not missing opportunities to learn through exploration. A kaleidoscope light on the right
corner of the mirrors is directed towards the floor of the infant/toddler area and reflects
off the mirrors, completely covering the space in
glimmering light. Also in the infant/toddler corner is
a tabletop light box. The light box sits on the floor
and is close to 6 inches tall. It’s height is tall enough
to challenge the infants to enhance their climbing,
sitting, and reaching abilities, and short enough that
the toddlers that aren’t tall enough to reach the large
light tables have a light table available to them and appropriate for their size.

In the middle of the room is an overhead projector. That projector faces the west wall and illuminates a white projection screen. The overhead projector is on a rolling table. This allows it to be easily moved and used in other areas of the room. Also, the projection screen can be used as a blank canvas. The versatility of the screen’s purpose allows it to be multifunctional in creating provocations for children. Along the south wall, which is also the double-sided mirror, sits one of the large Whitney Bros light tables (figures 10 and 11). The other light table is directly across the room on the north wall.

The intent in my choice to place the light tables in different areas was to generate room and utilize the large furniture to its fullest potential. If the tables were in the same vicinity, they would have occupied too a large portion of the room. An advantageous feature of the Whitney Bros light table is that it has the ability to be lit up on one side or both. There are two switches to control the lights on the table and they are easily manageable by both children and teachers.

What now accompanies the light studio is an 8ft X 8ft black light room (Figures 18-21). The black light room occupies the back left corner of the light studio. The structure was built with wood and enclosed by black out curtains on all exterior sides to block out the light from entering. Before visiting Reggio Emilia, the thought of a black light portion had not occurred to me. However, in my personal opinion, the black light area that was in the Ray of Light atelier was the most enticing and intriguing portion. So
it would strongly enrich the light and shadow lab at the JTCDSC and more than make up for the loss of space. Inside the black light room is an array of materials that glow in ultraviolet (UV) light. Some are located on the ceiling and cause the children to expand their range of sight upwards. Others are on the floor and are available for the children to touch and explore. From the ceiling, hang geometric shapes and miscellaneous material of all shades and dimension. On the floor are blocks, tic-tac-toe, loose parts, and black light flashlights for them to handle themselves. All of the items must be glow in the dark or fluorescent in order to shine vibrantly under the black light. Some of the material is organically fluorescent and didn’t require a transformation, while a majority of the objects needed to be painted to become fluorescent. Additionally, on the wall in the blacklight room, two squares unlike those in the threshold, are mounted on the wall. However, these squares capture phosphorescent energy. This means that when phosphorescent light is applied to the squares, they glow in the dark. With those squares, children have access to small UV flashlights that have the ability to draw or write on the squares and it will glow in the dark.

Overall, the work and rework of the design of the light studio, though tedious and time consuming, produced an environment that children are excited to be in. Every object in the studio has the potential to positively influence a child’s learning path.

Discussion

Children are the owners and initiators of their learning. Every time they engage in play and activity, they are developing conclusions and adapting to their environment. Nowadays, children’s learning opportunities are typically structured and, more often than
not, have a specific learning goal in mind. Children are often socialized to conform to a long-term societal view that education is most efficient with diligent work and little time for play, which research has determined is incorrect. Instead, when children are learning in a meaningful context, with choices, and where they are encouraged to incorporate their interests, learning takes place best (Singer, Golinkoff, & Hirsh-Pasek, 2010). The largest downfall of the current academic system is that we too-often treat children as though they are empty vessels up until the point they reach kindergarten, when in fact they have an entire collection of experiences and knowledge that have shaped who they are and prepared them for challenging and intriguing learning experiences. The light studio’s development is intended to juxtapose the harsh and strict learning environments children are often exposed to. Instead, its purpose is to provide opportunities to enhance a child’s cognitive development in a variety of ways, whether that be through scaffolding instruction from a caregiver or through independent research.

From the time children are born, they are acquiring the skills to develop speech and language abilities. The first six years of a child’s life are incredibly sensitive; lack of stimulation during this time can result in delayed development or poor communication skills (Myers, 2011). While children are in the light studio, there are endless opportunities for educators to introduce new vocabulary and enhance their understanding of the material around them. For the young children exploring the light studio, these developing skills may look like small utterances, non-verbal gestures, increased eye contact or movement, and even mimicking words. As for the older children who have more developed language skills, it will provide challenges for them to expand their vocabulary.
This may be extending sentences and learning interactive words that are congruent with the material they are manipulating. For example, words like reflection, refraction, fluorescent, prism, projection, and many more will be elicited by the environment.

The vocabulary is not only geared towards light and shadows, but can expand and generalize to numerous areas in a child’s learning process. As children explore the studio and the objects it holds, their innate curiosity will cause them to pose questions and provide educators with the opportunity to scaffold learning, specifically in language acquisition and comprehension. While some of this content may not be in a child’s zone of proximal development, it creates opportunities for educators and caregivers to provide more knowledge to the children, allowing them to come to a conclusion. As children explore the light studio, they are acquiring knowledge of the physicality of the materials, even when their knowledge of the materials capacities and potentials may not be as apparent or evident at first glance.

This is the time that educators make the decision to allow the children to collaboratively teach one another, or to step in and facilitate higher learning. Each of these options happen consistently in early childhood education, however there are times one is more optimal than the other. Regardless, each of those approaches require that children be working in collaboration with someone. It is a means to an end to encourage collective learning. The main goal of the Vygotskian perspective is to maintain learners in their ZPD’s for as long as possible by providing them “interesting and meaningful learning and problem-solving tasks that are slightly more difficult than what they do alone, such that they will need to work together either with another, more competent peer.
or with a teacher or adult” (Shabani, 2010, p. 238). Since much of the material that fills
the light studio is open-ended and multifunctional, it’s expected that children will ask
questions about concepts or objects they don’t understand. It is also expected that
children will explore those materials and their properties without intense facilitated
instruction. There is an equilibrium that the light studio provides, in that it is intriguing
enough for children to want to explore at their own pace, but also are inquisitive about
certain parts. Both educators and children play a large role in the effectiveness of the light
studio’s purpose. The knowledge that is attainable will be present and available if
educators and children are taking advantage of the experiences it provides.

The light studio’s purpose was not intended to be confined or matter of fact. The
value of this room is seen from observing the children but more so interacting personally
with the space. There is no final conclusion or information set out for the children to
learn. There isn’t a curriculum based lesson each day or restrictive boundaries. The
intention of the room was to fuel children’s desires to explore. A space such as this takes
away the pressure for teachers and students to learn in a uniform way. Every aspect,
every corner of this room has countless different things to teach individuals. It is
malleable and fluid. The information can be spread across concepts for children and can
generalize to other areas of their learning. The light studio is equally inviting and
educating for children. The parts that can be seen in the light studio are simple, yet they
spark ideas and foster curiosity in children. There has been and will be countless
instances that provoke questions in children. These questions, as illustrated in the
example above, will turn into investigations and experimentation with the materials. With
scaffolding and guidance from their caregivers, those investigations and experimentations lead children to an answer to their question formed while they were playing in this unique setting. The National Association of the Education of Young Children (NAEYC) reflects that play is a child’s context for learning (Bongiorno, n.d.). It is in a space that they feel comfortable, absorbed, and fascinated that children learn. This play is not fruitless or ineffective; it serves a purpose in the lives of children. There is power in the unknown of this room, not in reference to its unknown ability, but to its unknown purpose.

The value of this room cannot be contained or confined. The evidence of its power is palpable in observing children engage and interact within the space. However, the success of the room is contingent upon its users. Educators play a key role in the room’s teaching capability, as they are equally a medium and direct source of knowledge that flows from the material to the children.

**Conclusions/Recommendations**

The ultimate recommendation I can give within a space such as this is to do research. Take the time and energy to research from all corners of literature. Look to members of your community and experts of similar fields for experience and advice. This was one downfall I experienced in my time developing the light studio. Being a part of a large university and not utilizing all departments for input and collaboration was a mistake. This was an opportunity for diverse departments to join force and compile knowledge on a variety of subjects. Architecture, photography, education, mathematics, psychology, sociology, and astrology are few among many different university departments that I now believe could improve the spaces outcome. This is something that
LIGHT AND SHADOW LAB

is still possible for the light studio and I hope to incorporate throughout the rest of my
time in college.

Another conclusion I have come to while creating the light studio is to not
overthink. The amount of preparation and time it took to create the light studio caused me
to contemplate every aspect and rework the design multiple times. It is important for this
space to be prepared for children in an intentional way. However, the way the space is
used and the degree to which it can be effective is strongly influenced by the
restrictiveness children feel. There will be times when they are idle and are unsure of
what to do; don’t over think. It took me a few instances to realize that they will explore
the material, ask questions, and find their answers without hovering help from me.
Instead, I’m a facilitator. I am there when they need me, and I introduce new things to
them so they can use the skills and resources they have to learn about their environment.

One of the greatest lessons I’ve learned from this room is to not be overbearing.
When I put together the light studio, I wanted every piece of equipment and every object
to stay neat and tidy. I had anxiety that this space wouldn’t look presentable to appealing
to the children if things were strung all over the place. Of course, I later found that the
children do not need every inch of the room to be perfect. Rather, they need it to be
exciting. If I were to advise individuals on building an atelier of any sort, I would offer
them the idea to first think of the child. I would tell them to think diligently about how a
child might perceive the room, what they will be drawn to, and how those urges can
further their learning. It has become a automatic response of adults to underestimate
children and their abilities.
It is time to stop cheating children out of the possible and enlightening opportunities they deserve. Loris Malaguzzi said it best (1998, p.3):

*The child is made of one hundred.*

*The child has*

*a hundred languages*

*a hundred hands*

*a hundred thoughts*

*a hundred ways of thinking*

*of playing, of speaking.*

*A hundred always a hundred*

*ways of listening*

*of marveling of loving*

*a hundred joys*

*for singing and understanding*

*a hundred worlds*

*to discover*

*a hundred worlds*

*to invent a*

*hundred worlds*

*to dream.*
References


Figures

Figure 12 - Phosphorescent squares inside the black light room

Figure 13 - Phosphorescent tic tac toe rocks in the black light room

Figure 14 - Hanging phosphorescent geometric shapes in the black light room

Figure 15 - High point view of objects hanging on the wall in the black light room
Figure 16 - View of the east wall with the infant/toddler area and double sided mirrors that lead into an observation room.