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I, Susan Joan Ubbing Griebling, hereby submit this original work as part of the requirements for the degree of:

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Designs for Making a Tree:

An Ethnographic Study of Young Children's Work in the Visual Arts

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Designs for Making a Tree:
An Ethnographic Study of Young Children’s Work in the Visual Arts

A dissertation presented to the
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by

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Abstract

A two month ethnographic study was conducted in a classroom where children were engaged in project work. Project work is an innovative curriculum approach in which small groups of children investigate a topic of interest to them. Children use the visual arts to express themselves and represent their learning during a project. Children in the study ranged in age from 3 to 5 years from diverse socioeconomic and cultural backgrounds. The pattern and components of children’s artwork were analyzed using videotaping, photos and field notes. Three questions guided this study: What types of art do children make? Is there a pattern of progression in children’s art? What is the purpose of children’s work with visual art materials?

Findings suggest the children created within four domains and fifteen subsets of visual arts. While there was a progressive pattern of children’s artwork from simple to complex, experience was found to play an important role in this progression. In addition, children did not leave behind earlier ways of expressing themselves through the visual arts. Instead, they built a repertoire of the domains and subsets of types of visual arts to choose from. Findings also suggest that children create art works to meet developmental needs of mastery, belonging, generosity and independence.
Acknowledgments

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Designs for Making a Tree:
An Ethnographic Study of Young Children’s Work in the Visual Arts

Throughout history philosophers and educators have discussed the importance of the arts as a key component of quality education. Numerous studies suggest a strong connection between the integration of arts into academic curriculum and increasing levels of academic achievement (Burton, Horowitz, & Abeles, 1999; Catterall, 1995; Lufting, 2000; Moore & Caldwell, 1993). However, since the No Child Left Behind Act (NCLB) was passed by the U.S. Congress in 2002, the inclusion of the arts in education has diminished.

Although NCLB supports the significant role the arts play in education on paper (Paige, 2004), funds originally earmarked for the arts in schools have been cut (Chapman, 2004). Nationwide research of school districts suggest waning commitment to areas of study not subjected to mandated testing, including the arts. (Chapman, 2004; Choices, Changes and Challenges, 2007). Chapman (2004) warns that the arts will become an enrichment program for students who master their academic material in a timely fashion or will be cut from schools altogether as a result of NCLB. As early as 2004, 25% of school principals reported having made cuts in art education and 33% anticipated future cuts (as cited in Chapman, 2004, p. 12). Schools with high minority populations will suffer the most. Thirty six percent reported cuts in the arts and 42% anticipate cuts in the arts in the future (as cited in Chapman, 2004, p.12).

Pressures for high scores in NCLB mandated testing is diminishing the role of the arts in education. Even though research suggests the importance of the arts in learning outcomes for academic subjects such as math, science and language arts, the arts have been marginalized in most schools. This marginalization is especially significant in schools that serve minority
populations and could lead to grievous consequences in academic outcomes throughout the United States.

Problem

Many teachers report the desire to do more with the arts in their classrooms; however, competition for curriculum time, budget shortfalls, and long-standing stereotypes of the arts as superfluous, prevent educators from integrating the arts into their curriculum plans (Welch & Greene, 1995). In a survey of 32 teachers in Pennsylvania, Purnell (2004) found that 100% of respondents believed that integrating the arts improves the teacher’s ability to meet their student’s multiple learning styles. Ninety-six percent believed arts integration improves or greatly improves the teacher’s ability to work with students at risk and students with special needs. Ninety-four percent believed that arts integration improves or greatly improved overall academic achievement and 63% believed arts integration improves their ability to meet academic standards. Fifty-three percent reported arts integration improves school attendance and 50% indicated arts integration can improve standardized test scores. Despite these beliefs, the majority of the teachers did not utilize art integration in their classrooms (Purnell, 2004). The National Center for Education Statistics (2002) reported that only 27% of teachers incorporate the visual arts to a great extent in their classrooms. There is clearly a disconnect between teacher’s beliefs about the positive effect of arts integration and actual implementation in the classroom. Although teachers in Purnell’s (2004) survey reported extrinsic barriers such as not having enough planning time, access to art materials or administration support for arts integration, 84% had never taken arts-related professional development. This suggests an intrinsic barrier as well – a lack of understanding of how to integrate the arts into the regular classroom.
Despite the studies reported above there is a trend in early childhood in which educators are studying and implementing a curriculum that integrates the visual arts as a natural language of learning: the project approach. A project is an in depth study of a topic that is of interest to a particular group of children. It includes a process of inquiry that occurs through small group work in the classroom (Katz & Chard, 2000). In this curriculum approach children explore topics of interest to them over an extended period of time with guidance and support from the teacher (Katz & Chard, 2000). The project approach employs children’s natural inclinations to use the visual arts as a language for exploring a topic. Drawing, painting, sculpting and construction are all used to deepen the children’s understanding of the topic and allow them to represent their understandings in a concrete way.

Interaction with the visual arts seem to be a strong language for academic learning, especially with young children (Jensen, 2001). Young children are not always able to express themselves fully through written and verbal language skills. Acceptance of the visual arts as a symbol system and a language for learning can be especially valuable for young children as well as children who struggle in other areas of traditional academic expressive modalities, most notably, written language (Katz & Chard, 2000). The visual arts provide ways for children to explore and express themselves using a graphic rather than verbal or written symbol system. They are a language of communication often simpler and clearer for young children to use (Malaguzzi, 1998a).

The visual arts afford opportunities for teachers to “listen” to children and encourage graphic communication (Hertzog, 2001). Early childhood is a critical time for acknowledging this visual symbol system, engaging it as a valid means of communication and learning and using it to understand children more fully. It is inherent at this developmental level to create. Given the
materials, young children draw, paint, sculpt, construct and collage unabashedly, fluently and without adult prompting (Thompson, 1995). Educators must recognize the value of these symbol systems and explore the visual arts as an important part of the learning experience (Arnheim, 1974; Eisner, 2002).

The visual arts are highly valued in the project approach and they are referred to as some of the *hundred languages of children* (Malaguzzi, 1998a). During project work children use many symbol systems to gain understanding of the topic and demonstrate to teachers and parents what they know. The mediums used in the visual arts allow children to represent their thinking on the topic (Katz & Chard, 2000). In a study of bones, the children made drawings of what they knew about bones early in the project (Kogan, 2003). These drawings helped the teacher understand the children’s personal knowledge of bones and provided information critical to the development of the curriculum around the topic of bones. The visual arts are a language used to advance thinking and present challenges in project work. In the study of bones, children made predictions of what they would find inside chicken bones by drawing the bones and labeling the components such as plastic, rocks and sticks. Once the chicken bones were broken open and placed under a magnifying lens the children made detailed observational drawings and then compared these to their prediction drawings. Clear differences between the children’s prediction drawings and the actual bones provided concrete evidence that advanced the children’s understanding of bones (Kogan, 2003). Educators use the visual arts in project work to encourage children to communicate what they are thinking, feeling, learning, and experiencing in the topic. In the study of bones children created journal entries using drawings to express what had interested them most during a visit to a clinic and radiology department (Kogan, 2003). Teachers listen to what the children are saying about the topic through the visual languages the
children use in project work. Once teachers had reviewed the children’s journal drawings and discussed them with the children and each other they helped the children form work groups to explore each of these interests in more depth. Educators used information gathered from children’s visual artwork to understand their ideas, conceptions and interests and to advance the topic of study (Hertzog, 2001).

Theoretical Framework

The project approach employs a child-centered pedagogy in early childhood education. Child-centered pedagogy places the child’s interests at the center of curriculum and structures the classroom environment and activities based on young children’s developmental needs. The arts are a natural language for learning in this pedagogy. There are several philosophers, theorists and educators who discuss the components of child-centered pedagogy in education (Brosterman, 1997; Dewey, 1938; Freire, 1970; Montessori, 2004). These authors hold many beliefs in common, which together comprise a theoretical framework for child-centered pedagogy. While these beliefs will be discussed individually, in reality they are woven together in ways that supports a democratic system of education. To illustrate this conceptual framework, consider the metaphor of a simple weaving loom (Figure 1).

The Frame Loom as a Metaphor.

The frame loom (Figure 1) is a simple structure used to weave cloth. It is easily constructed of two horizontal and two vertical bars. These are connected to create a rectangular structure which holds the components of the loom and the weaving together. The vertical warp threads are strung between the upper and lower horizontal bars of the frame (Wylly, 2001). These threads are lifted and lowered with the pick-up stick, forming a channel for the horizontal or weft thread to slip through. When cloth is woven from multiple colored weft threads, patterns
are created on the surface of the cloth. This allows for many variations of design in the woven cloth. Beautiful pieces of cloth can be created using this simple weaving technique (Roediger, 1991).

![Diagram of a loom with labels: Warp = Components of the conceptual framework, Frame = Constructivism, Weft = Knowledge, Pick-up stick = Arts.]

Figure 1. Loom metaphor of theoretical framework

Just as beautiful pieces of cloth can be woven using the parts of a simple frame loom, strong and competent children will grow from a child-centered pedagogy in early childhood education. In this metaphor the frame of the loom represents constructivism. Constructivism is the theory of learning that proposes children construct individual knowledge through interactions with others and with materials (Piaget, 1953; Vygotsky, 1978). This is a theoretical frame that informs all other beliefs about children and how they learn.

The vertical warp threads represent the values of child-centered pedagogy which have their grounding in constructivism. These include the concepts of experience, democracy, continuity and community. These beliefs are an essential piece of teaching practices, however, like the warp threads, they are not normally visible or explicitly stated. They lie beneath the cloth, covered, but a foundation the weaving is formed around.
Cloth is created by weaving weft threads through the warp. These weft threads and the surface of the cloth they create represent the knowledge that children construct through interaction with their environment and others. Just as cloth is formed around the warp threads, knowledge is formed around the beliefs and practices of the significant people in a child’s life. Each piece of cloth is distinct from another built on the same weaving frame and, in the same way, each child is a unique and exceptional individual.

The pick-up stick of the loom represents the arts. The pick-up stick is a tool that lifts the warp threads at different intervals, allowing the weft threads to be woven in and create intricate patterns on the face of the cloth. Like the pick-up stick, the arts are a tool which brings knowledge to children in intricate and unique ways. In education, the arts are a language of communication which supports learning (Malaguzzi, 1998b; Vecci, 1998). A plain-weave cloth can be created without a pick-up stick. However, it will lack the beautiful patterns created when the pick-up stick is used. Without the pick-up stick, the cloth is indeed still woven, but at a cost. Without the arts, education also comes at a cost.

**Teacher-Directed Pedagogy.**

With today’s focus on achievement testing there threatens to be a trend towards more teacher-directed methods of education to assure that all children are learning the material required for those tests (Welch & Greene, 1995). In traditional, teacher-directed pedagogy the teacher’s role is to regulate and transfer information to the students. The teacher is the “narrator” and the students are the “listening objects” (Freire, 1970 p.71). The traditional, teacher-directed approach to education has been criticized by some of the foremost educators and philosophers of the last century including Freire (1970), Dewey (1938), and Piaget (1953) and Malaguzzi (1998). The teacher using a teacher-directed pedagogy is in a position of power, and controls what and
when the students learn. In essence, he or she is “depositing” the information into the students
(Freire, 1970 p.71). Freire (1970) calls this method of teaching the “banking concept of
education” (p. 72) and Dewey (1938), Malaguzzi (1998) and Piaget (1953) agree with Freire
(1970) that banking is an ineffective and disrespectful practice.

Banking is not based on, nor does it meet, children’s developmental needs. This
traditional method of teaching basic skills is dominated by drilling, memorization and teaching to
the test (Katz & Chard, 2000). This detachment from a child’s real experiences turns learning in
the classroom into drudgery and leads to boredom. The students become the “docile, receptive,
obedient” (Dewey, 1938 p.18).

The content of these exercises is often unrelated to the world in which they
live and learn. Largely mindless, these activities usually mean little to the
children, though at the outset most are quite willing to do them (Katz &
Chard, 2000).

The banking method of teaching prevents children from thinking critically about ideas
and their world. It shows distrust in children and the resources which with they come to school.
The “image of the child” (Malaguzzi, 1998b p.3) is that of a passive, incompetent person.
Banking discourages independent thought and action in children. This approach to education
dehumanizes children, detracting from their natural inclinations to explore and study their world
(Freire, 1970). Juxtaposed to this, child-centered pedagogy focuses clearly on practice based on
the theory and research of how children learn and engages children in the learning process.

Constructivism.

Unlike teacher-directed pedagogy, constructivism forms the frame or foundation of the
metaphoric loom for understanding how children learn in the child-centered pedagogy (King,
Piaget (1953) and Vygotsky (1978) both discuss the construction of knowledge. Piaget’s theory emphasizes the construction of knowledge by the individual through the physical environment, but still acknowledges the role of social interaction in learning (L. Berk & A. Winsler, 1995; Piaget, 1953). Vygotsky discussed the child’s construction of knowledge primarily through social interaction and emphasized that social interaction leads to development (Berk & Winsler, 1995; Vygotsky, 1978). While some might find a division between the work of Piaget and Vygotsky in the discussion of constructivism, these two theories can be viewed as complementary of one another (Aldridge, Sexton, Goldman, Booker, & Werner, 1997; L. Berk & A. Winsler, 1995; Piaget, 1953; Smith, Dockrell, & Tomlinson, 1997; Vygotsky, 1978). Piaget and Vygotsky use different frameworks to describe the learning process but agree on the basic component of development -- that children construct knowledge. Efland (2002) describes this as an integrated theory wherein it is recognized that knowledge is constructed through metacognitive strategies but this does not occur in isolation. “The learner works within a cultural context with cultural tools” (Efland, 2002, p.81). Construction of knowledge through experience with objects and interaction with others forms the framework that supports the components of child-centered pedagogy (Jacob, 1984). The next section will look at specific components of child-centered pedagogy, which are grounded in this framework of constructivism.

Components of Best Practice in Child-Centered Education.

Teachers have ideas and beliefs about how children learn. While not always stated explicitly these beliefs are present in their teaching practices and interactions with students each day. These values influence how and what children learn in their classroom. These are the warp threads that often lay hidden but provide the essential foundation for a piece of cloth. Educators using a child-centered pedagogy in their classroom have a shared philosophical outlook that
informs their teaching practices (Curits & Carter, 2008). In this section the main components of this shared philosophy will be discussed. They include:

- Experience
- Democracy
- Continuity
- Community

These four components combine to meet children’s developmental needs. Children’s developmental needs have been analyzed and discussed by theorists and authors, including Erikson (1950), Maslow (1943), Coopersmith (1967) and Bendtro and Brokenleg (2001). They have contributed analogous perspectives on children’s development needs. In addition to biological needs such as food and shelter children have developmental needs for self-worth and self-esteem. Bendtro and Brokenleg (2001) have identified these in the Native American culture and summarized them as the need for mastery, the need for independence, the need for generosity and the need to belong.

Children strive to master an understanding of their world. Motivation for learning is increased when children feel competent. Children need to feel a sense of autonomy and independence over their lives. They need to have a say in what they learn and how they learn it. Children need to make a contribution to their community. The act of generosity allows children to feel they have a vital role to play in society. The need to belong to a community that accepts and values them is crucial to development. Child-centered pedagogy works to meet these four developmental needs (Bendtro & Brokenleg, 1990, 2001).

**Experience.** While Piaget and Vygotsky propose theories based on the understanding that children actively participate in the construction of individual knowledge, Dewey (1939) elucidates the practical importance of experience -- confronting real-world situations and
learning though them (Berube, 2000). This emphasis on the importance of experience is a belief that is represented by one of the vertical warp threads of the loom. Children have experiences in all types of classrooms, but the quality of experience will differ. Traditional teaching methods rely on the development of abstract, representational knowledge gained through indirect experiences (Katz & Chard, 2000). Child-centered learning focuses on behavioral knowledge, which is gained through direct experiences in the classroom (Katz & Chard, 2000). Young children need to build a strong foundation of behavioral knowledge, based in direct experiences, in order to later develop more abstract representational knowledge (Katz and Chard, 2000). In contrast to the teacher-directed classroom where children are passive observers, children in child-centered classrooms actively engage in the learning experience through hands-on and minds-on work with materials and interactions with others. Children do not learn to their optimal potential without active participation and experience. Active learning through experience is not just a good idea--it is in harmony with the way children learn (Cooney, Cross, & Trunk, 1993; Freire, 1970; Thomas, 1999)

The importance of experience is supported by current research on brain development (Boettcher, 2007; Shonkoff & Phillips, 2000). A child is born with millions of brain cells. As a child interacts with the world, neural connections are made. These neural connections multiply and grow as a child has experiences, creating large assemblies of cell networks (Gunn, Richburg, & Smilkstein, 2007; Jensen, 2005). At the same time young children are creating new and numerous neural connections, the brain is also eliminating, or “pruning”, neural connections that are not used regularly (Jensen, 2005 p. 12). Low quality or lack of experience can cause an actual loss of neural connections and have a devastating effect on a child’s development, while quality
experiences increase the type and amount of neural connections that are produced in childhood (Altmann, 2002).

Quality experiences have been shown to be beneficial to children’s learning (Blachman et al., 2004). Experiences in the classroom help to meet children’s developmental need for mastery. When children are allowed to learn through experience, they begin to master their environment. They develop competency in their work which leads to satisfaction and a sense of efficacy (Bendtro & Brokenleg, 1990, 2001). These experiences engage children and heighten their involvement in the learning activity at hand. Children who have exciting learning experiences feel competent and develop a desire to engage in the learning process in the future (Dewey, 1938). Once children begin to see themselves as competent explorers of their world, they discover the pleasure of inquiry, and their motivation and interest in learning accelerates (Malaguzzi, 1998a). This produces a continuous, upward spiraling affect in their lives, leading them to be life-long learners.

Democracy. Children’s active engagement with their environment liberates education and “fulfills its function as a practice of freedom” (Freire, 1970 p.79). Students wrestle with the material, engage in hands-on and minds-on experiences and are actively involved in the learning process. In the child-centered classroom the curriculum is developed to meet children’s needs, particularly the need for independence and autonomy (Bendtro & Brokenleg, 1990, 2001). Children are allowed self-determination as they actively contribute and co-construct the curriculum with their teachers. Their interests, needs and development are essential considerations in the child-centered pedagogy. A democratic classroom, where children and teachers both experience the freedom to learn, where the right of the child to be a protagonist is recognized, is key to this child-centered pedagogy in education (Malaguzzi, 1998a). In a
democratic classroom, children develop the disposition and desire to gain in-depth understandings of complex issues and concepts because they are valued as independent constructors of knowledge. (Katz & Chard, 2000).

The support of independence in the learning environment does not exonerate the classroom teacher from responsibilities. In a democratic classroom the teacher becomes a leader rather than a dictator (Dewey, 1938). In reality, this is a more difficult role to fulfill and necessitates the ability to think creatively, to trust children, and to understand the needs of the children in the classroom. The teacher’s responsibility is to arrange for active learning experiences for the children. This includes the selection and presentation of equipment, books, games and materials. The teacher must be aware of the individual needs of the children as well as the understandings and needs of the group. The teacher interacts with the children, asking appropriate questions and engaging children in dialogue that will support them in their construction of knowledge. This is a more heuristic teaching style in which the teacher provides guidance but allows children to think for themselves, and discover solutions to problems (Bresler, 1994). While the teacher-directed role puts the teacher at the head of the class, the child-centered, leader role puts them at the center of the class. It is a “cooperative enterprise, not a dictation” (Dewey, 1938 p.67).

Continuity. Continuity allows children to actively make connections to new knowledge from previous experiences. The concept of continuity forms another of the vertical threads that add structure to the cloth. Dewey (1938) notes four criteria for continuity. First, the topic or problem should grow out of the immediate experiences of the children. Second, it should be explored within the developmental range of the children. Third, it should engage children and arouse in them an excitement to learn more. Fourth, it should be a “continuous spiral” (Dewey,
1938 p.44). One topic of exploration should lead to another, and another, creating a continuum of cumulative knowledge.

In early childhood education today, the principle of continuity is met through emergent curriculum. Emergent curriculum rises from the interests of the children and builds on previous experiences and knowledge (Jones & Nimmo, 1994). Instead of scripted plans, emergent curriculum provides opportunities for children to be active contributors to their education. Rinaldi (1998) likens it to being on a journey where a compass is used to find the way rather than the use of a predetermined train route and schedule. The children and teacher together hold the compass that guides the curriculum. Emergent curriculum meets children’s developmental need for generosity as they actively contribute to the classroom learning experience. Children feel they can make a contribution to that community through their ideas and through their actions (Bendtro & Brokenleg, 1990, 2001).

In order for teachers to be comfortable with the tentativeness of emergent curriculum they must be able put their trust in children and see them as “rich in resources, strong and competent” (Rinaldi, 1998 p.114). Children have a vital role to play as contributors to the learning process. Each child is viewed as strong and resourceful, who’s interests, ideas and understandings contribute to the classroom community. Teachers must be attentive listeners and observers as they develop curriculum in cooperation with the children and guide them in making discoveries about their world. Negotiating emergent curriculum is an ongoing process (Dewey, 1938; Jones & Nimmo, 1994). Children are given time to ask good questions and to discover the answers to these questions through exploration with materials, graphic representations, and discussions with peers. Teachers facilitate and support children’s learning, while giving the children decision-making power in what and how to investigate.
Community. As teachers allow curriculum to emerge from children’s interests and give children decision-making power over their education a community of learners is formed. This view of the school as a community is another length of warp thread on the educational loom. Social interaction and dialogue are needed to develop curriculum and learn together. Formation of a community of learners leads to a sense of belonging (Bendtro and Brokenleg, 2001; Dewey, 1938). Children need to feel they belong to a community in order to develop self-worth, (Bendtro and Brokenleg, 2001).

In the classroom, teachers, and even the youngest children, bring their cultural beliefs and past experiences to school and the interaction of these beliefs and experiences has the potential to make the classroom a vigorous, social learning environment (Vygotsky, 1978). Individual differences are valued--including the differences of children with special needs. This community is formed through participation in common activities. The teachers are an integral part of this social community and together, with the children, become co-investigators of their world (Freire, 1970; Malaguzzi, 1998a).

Dialogue is an important contributor to curriculum and to the warp of the metaphoric loom (Bakhtin, 1984). The dialogue between teachers and children, children and children, children and the materials and environment, and dialogue with parents and the community promotes an exchange of ideas to support indepth understandings in an open and democratic style. There is a “spirit of cooperation” and a context of “individual and collective” learning (Malaguzzi, 1998a p.66). Relationships and learning from one another create an active learning environment in which children can develop to their fullest potential (Malaguzzi, 1998a).

Bronfenbrenner (1979) emphasized the role of social interaction within the contexts the children live. The child’s immediate environment, the Microsystems in which children are
directly involved such as school, and the people in that Microsystem, directly affect
development. Vygotsky’s (1978) concept of the zone of proximal development also points to the
importance of social interaction in learning. The zone of proximal development is the difference
between a child’s actual level of development and the level of learning that occurs when problem
solving is supported by adult interaction or collaboration with more knowledgeable peers.
Vygotsky notes that the developmental process lags behind the learning process. Interactions
with teachers, parent, community members and more capable peers stimulates the internal
developmental process and allows learning to occur (Vygotsky, 1978). Social interaction within
the child’s immediate environment gives meaning to the learning process and supports
development in children.

The teacher’s role in this dialogue is paramount—listening to the children’s interests,
hypotheses and intellectual expressions and allowing those to guide the teacher in supporting
learning and developing curriculum with the children. This reflective approach creates a
negotiated and emergent curriculum in which teachers gain understanding of the children’s
interests and knowledge. It is supported when teachers take the time to observe and understand
the communication that transpires in the classroom (Forman & Fyfe, 1998). The teacher forms a
community of learners with the children and seeks to understand the children’s shared interest in
a topic, and what their current knowledge and the level of articulation is (Forman & Fyfe, 1998).
The teacher becomes a researcher along with the children, and this ongoing dialogue with the
children informs teaching practice. There is an exchange of personal narratives and information
between children, parents, teachers and the community. Knowledge emerges through the creation
and reinvention of curriculum and the co-investigation of their world. Teachers and children
together take responsibility for the process of education (Freire, 1970).
These components of child-centered pedagogy form the philosophical foundation for learning in a progressive classroom. They are the underpinnings of a strong education pedagogy that focuses the developmental needs of typically developing children and children with special needs. Integration of the arts is also an integral part of this philosophy as it serves as a language for learning, just as the pick-up stick serves as a tool for weaving. Integrating the arts as a language for learning is essential for child-centered pedagogy.

The Arts as a Language in the Child-Centered Classroom.

Art is the pick-up stick that lifts the warp threads to make the beautiful and intricate patterns in cloth. For children, the arts add multiple dimensions to their thinking and learning (Jensen, 2001). Dewey (1934) states that the process involved in art-making requires more intelligence than most academic tasks. While many teachers today fear taking time from academics to integrate the arts, Dewey (1934) and Freire (1970) insist that “the teacher’s efforts must be imbued with a profound trust in people and their creative power” (Freire, 1970 p.83). If the arts remain on the fringe of educational practice, like a decorative fringe that may enhance the weaving but is not essential to its function, we miss out on the many opportunities to develop a child’s intellectual talents (Thompson, 2006).

Work in the arts contributes to “complex and subtle forms of thinking” (Eisner, 2002, p. 35). The arts provide opportunities for children to decode meaning from their environment, to process those meanings through thought, and to encode their thoughts through the creation of visual art works through aural, visual and kinetic symbols (Read, 1945). Most young children cannot easily represent their thoughts and ideas through writing, the most common form of aural expression used in American schools (Gardner, 1985). They use other symbol systems to communicate, such as drawing, sculpting, drama and music. Gardner (1985) has identified these
and others as the multiple intelligences children use to learn. Malaguzzi called these “the hundred languages” of children and speaks about them extensively in his work (Malaguzzi, 1998b). If children are not given access to these intelligences/languages, then an essential aspect of their way of understanding the world and expressing what they know is ignored. This capacity for learning through the arts is inherent in each child and if neglected, will be detrimental to the child and society at large (Arnheim, 1997).

Review of the Literature

The Project Approach

Projects are indepth investigations of a topic that are drawn from the interests of the children. The teacher guides the children through projects, but the children are actively involved in the planning and development of the investigation. The teacher closely observes, documents, and studies the children’s responses and interactions to the investigation and bases guidance on the children’s questions, theories and predictions. Project work emphasizes the teacher’s responsiveness to individual children as well as to the group (Katz & Chard, 2000). The project approach is grounded in the understanding that children construct their understandings through physical, social and active engagement with their world (Katz & Chard, 2000).

The project approach makes contributions to children’s learning that align with the significant concepts of child-centered pedagogy. In project work direct, hands-on/minds-on experiences, a warp thread of the metaphoric loom, are provided with the materials of the project. In project work children weigh, measure, draw, construct, etc. to gain understanding of concepts in science, math, literacy and social studies. Experience with the constructs of visual literacy is provided through project work as children study artifacts and work to represent their
understandings through visual images. Children involved in project work discover the excitement of inquiry and investigation (Dewey, 1938).

The teacher and the children share accountability for the learning, the progress, and the achievements in project work (Dewey, 1938; Katz & Chard, 2000). They share the power and control of the curriculum as well as the success of the work. In this democratic method of teaching, supported by an active and engaged teacher, children have the freedom to guide their own learning in profound ways that meet their developmental needs. Children are given the time and the power to make significant decisions about their learning. The curriculum in the project approach emerges from the interests of the children and develops based on what the children already know about the topic and what they want to know more about. The children ask the questions and actively engage together to discover the answers. They struggle with misconceptions and assist each other in understanding concepts.

There is a spirit of community and support that permeates project work (Dewey, 1938; Katz & Chard, 2000). The social interaction and dialogues that occur are essential to the learning process, another important warp thread of the conceptual loom. Teachers engage the children to find personal relationships to the topic they are studying. Small group communities are formed to study topics in depth through investigation of books, community experts and the visual arts. The children are encouraged to help each other develop understandings of the topic and often challenge each other’s current levels of thinking. Dialogue and discussion within the small group leads to the construction of new knowledge and decisions about how the investigation will proceed.

The arts are highly valued in the project approach and are referred to as the hundred languages of children (Malaguzzi, 1998a). Children use many symbols systems to gain
understanding and demonstrate to teachers and parents what they know. Teachers listen to what the children are saying about the topic through the visual languages they use in project work (Hertzog, 2001). The visual arts are a medium often chosen to allow children to represent their thinking on the topic (Katz & Chard, 2000). They are a language used to advance thinking and present challenges. The visual arts are a medium educators use to encourage children to communicate what they are thinking, feeling, learning, and experiencing on the topic. Detailed drawings and constructions often come out of project work that go far beyond what has been considered typical for children at this developmental level. By studying the contributions of the visual arts in project work early childhood educators will gain a deeper understanding of the importance of the role of the visual arts in learning.

The project approach integrates all of the components of child-centered pedagogy. It fulfills the vision of the metaphorical loom. The following review of research will explore one component of this pedagogy-- the integration of the arts, specifically the visual arts in classrooms using the project approach. The next section will begin by looking broadly at the research in arts and what it brings to education and then narrow the focus to research in project work and the use of the visual arts as a language for learning in project work. This will serve as a focus for understanding the gaps in research in this area of study.

Children with Special Needs during Project Work

Discussion of young children in early childhood assumes the inclusion of children with special needs, especially when speaking of the preschool setting. Early childhood classrooms are generally inclusive of children at all ability levels. Children with special needs are not separated from typically developing children. When working with preschoolers, children with special needs have often not been identified or received special services. The preschool classroom
environment is designed as a least restrictive environment that supports different levels of learning with free exploration and child-centered pedagogy as the focus; this is also true when using the project approach (Helm & Beneke, 2003). All children are included and work at their individual developmental level. Scaffolding children’s learning is especially prevalent in project work. The social interaction that occurs as children struggle to build an understanding of the topic meets them at their zone of proximal development and supports all children in making the connection between what they understand or can do alone and what they understand or can do with support from an adult or more capable peer.

One primary example of a study that focused on children’s social development while engaged in project work is Elgas and Peltier’s (1998) study of Jimmy. Jimmy was a preschool child with language delays and physical aggression who had difficulty interacting in socially acceptable ways with other children in the classroom. During the course of a small-group project Jimmy’s creativity came to the forefront. He was able to contribute new ways of thinking to the small group through support of the teachers. The other children began to see his strength and leadership abilities. Jimmy’s engagement in the project improved his perception of himself as well as other’s perception of him and provided a context for expressing himself through an alternative language.

Scranton’s narrative of the Bird Project provide another study of a child with special needs involvement in the visual arts during a project (Helm & Beneke, 2003). Billy, a child with cerebral palsy, often avoided fine motor activities. However, during the investigation of birds, he became very engrossed in creating a mural, successfully drawing and labeling for the first time. Brandon, a child who met evaluation criteria for a behavioral disorder discovered an interest of working with tools such as hammers and screwdrivers during the project. This interest provided
motivation to collaborate with classmates in sharing the tools and working cooperatively to create a birdhouse. The project approach in the preschool classroom can successfully encourage children with special needs to become involved in the classroom community and can address IEP goals in a naturalistic, investigative environment.

Arts Research

Students benefit when the arts are integrated into academic areas of learning. Research repeatedly shows that integration of the arts increases standardized scores in academic subjects (Burton et al., 1999; Burton, Horowitz, & Abeles, 2000; Lufting, 1994; Moore & Caldwell, 1993; Welch & Greene, 1995). The Schools, Parents, Educators, Children, Teachers Rediscover the Arts (SPECTRA+) program evaluation showed gains in total reading, vocabulary and comprehension skills in math and literacy (Lufting, 1994). The Different Ways of Knowing study showed a 16 percentile point gain on the standardized language arts test for children who participated in the arts program for two years, while students who did not participate showed no gains in language arts scores (Catterall, 1995). Researchers found significant positive differences in the quality of writing when students who used drawing in conjunction with a writing program (Frisch, 2006; Moore & Caldwell, 1993; Norris, Mokhtari, & Reichard, 1998). The Arts Infusion program used in Augusta, Georgia found that children who were taught using arts integration in academic areas by artists and art specialists showed increasing improvements in academic performance on standardized testing over time (Welch & Greene, 1995). Clearly the arts have important contributions to make to academics in education.

Studies that look at the arts as a language for learning commonly involve primary, middle and secondary school students and look at a wide range of arts integration that may include music and drama as well as the visual arts (Berk & Walsh-Piper, 1994; Burton et al., 2000;
Moore & Caldwell, 1993). In addition, most of the research looks at either art programs brought into the school from outside providers or programs provided by art specialists. One study that included younger children was from Harvard’s Project Zero (Torff, 1994). Torff evaluated the Wolf Trap Institute’s performing arts program in a preschool classroom. Artists from the Institute worked with teachers to integrate performing arts activities into the curriculum. Torff (1994) found that children who participated in the performing arts program had significantly higher levels of student engagement and social participation than children who did not participate. Burton, Horowitz and Abeles (2000), who studied children in grades 4-8, looked at the transference of learning in art programs to learning across the curriculum. They found that learning in the arts had significant effects on performance in other subjects. Using a mixed method design, they found that qualitative data collection through interviews allowed researchers to gain a better understanding of what the arts bring to learning than looking at test scores alone. While these studies point to the importance of arts programs, they fail to look at the use of the arts as a natural language of the learning process such as it is used in the project approach. Also, these studies look broadly at the arts, rather than focusing exclusively on the visual arts.

*Children's Drawings*

There has been a great amount of research interest in one aspect of the visual arts with young children--their drawings. Theories and research on young children’s drawings have been numerous over the past two hundred years and as in many aspects of education, these views have swung pendulum-like since the discussion and interest in young children’s drawings began. Those who have discussed children’s drawing have sided either with the natural unfolding or the social construction viewpoint. These various perspectives have come and gone throughout the
years, but a brief discussion of them will help in understanding the significance of the perspective of drawing in project work.

As early as the 1800s educators, philosophers and theorists were discussing the significance of drawing in a child’s education. Friedrich Froebel, the “Father of Kindergarten” (Kelly, 2004, p. 27), was one of the first educators to emphasize the importance of drawing in curriculum for young children. Froebel’s drawing lessons were rigidly defined. They began with a study of the horizontal line, which was followed by the vertical line, both of which led to drawing squares, oblongs and triangles (Brosterman, 1997; Kelly, 2004; Peltzman, 1998; Williams, 1992). Drawing was highly valued and so serious sequential instruction was given at an early age. Froebel’s pedagogy of teaching the cultural tool of drawing was a significant influence in the United States well into the early 1900s.

At the same time others took a different perspective on children’s drawings. Ebenezer Cooke began looking closely at children’s drawings and described four developmental stages, from scribbling to imaginative drawing, through which children pass (Kelly, 2004). Cooke focused on young children’s natural artistic tendencies and recognized the importance of art as a child’s first language. He felt technical training should begin much later in life, after the child has passed through the natural sequence of creativity.

At about the same time Franz Cizmek was studying primitive art, and child art was seen as a division of that genre. Children’s drawings were beginning to be viewed as aesthetically valid and Cizmek exhibited the drawings of the children he taught. He advocated that children be allowed to teach themselves drawing, so as not to interfere with their innate creativity. He viewed children’s work as valuable of its own accord and not for its progression toward realistic representation (Kelly, 2004; Malvern, 1995).
This evolution-based theory of the development of drawing continued into the mid 20th century. Lowenfeld’s (1957) work at this time focused on establishing nine stages of drawing development beginning with scribbling in the toddler years to the pseudorealistic stage in early adolescence. Rhoda Kellogg spent 35 years studying the evolution of children’s drawings (Kellogg, 1969; Kellogg & O’Dell, 1967). She analyzed children’s first scribbles in intricate detail and studied the commonalities in children’s drawings across cultures. Kellogg believed that children’s drawing abilities were developed from visual feedback from their own work, not learned from others (Kellogg, 1973). The prevailing thought at this time was to let children’s drawing abilities unfold naturally, with little to no intervention from teachers. However, after the 1970s the focus on the spontaneous development of drawing gave way to studies on social and cultural influences in children’s drawing work (Thompson, 2006). This is most likely an influence of Vygotsky’s research which was translated into English about this time, Bronfenbrenner’s (1979) ecological theory and Eisner’s (1972) suggestion that the drawing process is affected by experiences (Berk & Winsler, 1995). Researchers began to focus on the influences of other children, media, and adults on children’s drawings (Anning, 1999; Anning & Ring, 2004; Cox & Rowlands, 2000; Ring, 2001; Wilson & Ligtvoet, 1992). The result of this research identified the social influences on children’s drawings. For example, Anning and Ring (2004) studied seven, 3-5 year old children for three years using qualitative methods such as interviewing, observation and analyzing the children’s drawings. They found parents have a great influence on emerging gender identities depicted in drawings and that children’s aesthetics in drawing are partially acquired through their exposure to popular culture.

In addition to social influences there are several other current perspectives in studying children’s drawings. Some researchers have focused on understanding children’s expression of
emotions through therapeutic drawing (Bornholt & Ingram, 2001; Burkitt, Barrett, & Davis, 2006; Pianta, Longmaid, & Ferguson, 1999). Other researchers still study the developmental aspects of children’s drawings (Bouza Kister, 2001; Bouza Koster, 2001; Braswell & Rosengren, 2000; Watson & Schwartz, 2000; Wolf & Perry, 1989). Interest in literacy has led researchers to examine the contribution drawing makes to the development of writing skills (Bonoti, Vlachos, & Metallidou, 2005; Brenneman, Massey, Machado, & Gelman, 1996; M. Chapman, 1994; Levin, 2003). Norris, Mokhtari and Reichard (1998) compared the writing of third grade students who drew before writing to those who wrote without drawing. They found that students who drew before writing produced more words, sentences and ideas and were more enthusiastic about the writing process.

More recently, a cognitive perspective describes drawing as a symbolic language for learning (Gardner, 1985). Katz and Chard (2000) noted that drawing during project work enables children to retrieve memories and recall details of past experiences. Drawing allows children to look closely and represent complex ideas. Drawing expands learning by supporting the problem-solving process and deepens the learning experience. Drawing during project work also allows for individual expression, persistence and focus. The process of drawing in project work develops confidence in children and leads to motivation in learning. It is valued as another language with which to express ideas (Gardner, 1985; Katz & Chard, 2000; Malaguzzi, 1998a). Those ideas can then be shared, debated and discussed with others. For children who struggle in other areas of traditional academic expressive modalities--most notably, written language -- having drawing as a language for learning and expression can be especially valuable (Katz & Chard, 2000). While Katz and Chard (2000) describe the many ways drawing contributes to learning during project work, research is needed to confirm these contributions and explain how
the process of drawing acts as a language for learning. Given the detailed drawings often composed during project work, it is an important area of the visual arts for continued study, especially within the realm of project work.

Drawing is often a significant component of visual art used in the project approach; however, it is not the only type of visual art that might emerge during a project. Sculpture and constructions, such as building a car out of recyclable materials, are examples of other visual art activities that often take place during project work. As with drawing, the sculptures and constructions created in project work are far more detailed than most creative work of young children. While there are many descriptions of the use and products of visual arts in projects with preschoolers there is a paucity of formal, systematic research that looks at the role of the visual arts as a language for learning in project work (Floerchinger, 2005; Gallick, 2000; Kogan, 2003).

Research Questions

Recognition of the visual arts as a language was critical for understanding how children learn and the potential that young children have for learning through the arts. Study of project work has led many to marvel at the way visual arts were used by young children. The purpose of this study was to expand knowledge of how children use the visual arts as a language during a project to answer three questions:

1. What types of art do children make?

2. Is there a pattern of progression in children’s art?

3. What is the purpose of children’s work in the visual arts?

*Types of art children make*

While there has been some systematic study of project work with older students (DeJong, 1999; Dresdon & Lee, 2007; McCleery, Lopez, Harveson, Silvy, & Douglas, 2005), there has
been little formal research of project work with young children (S. Chard personal communication 10/4/2007). Publications about project work with young children throughout the U.S. are primarily documentary descriptions of events that took place during the project. (For examples see Bellous, 2004; Floerchinger, 2005; Norris et al., 1998; Sanchez, 2007). These educators describe the visual art work the children engage in during project work in broad domains, such as drawing, painting and constructions with the primary focus on children’s observational drawings. While these broad domains are important, educators need to understand the language of the visual arts in more detail to better appreciate their educational value. A review of the literature suggests that little of this kind of study has been done.

Two studies focusing on collage and clay were conducted in the 1990s. Stevenson & Duncum (1998), who studied young children’s collage work found that there was a flexible progression (children often repeated earlier stages) toward the inclusion of symbolic elements in children’s collage and identified categories signifying the emergence of those symbols. These authors identified five categories of collage work by preschool and kindergarten aged children, which fell under two broader categories of “presentations” and “symbolizations”. Presentations were collage art works which were not identified as symbolic representations of objects or actions. Symbolizations were identified by the children as symbolic representations of an object, such as a car or landscape, or an action, such as a party or event at school. Golomb and McCormick’s (1995) study of preschool children and their use of clay offers some information on children’s understanding of three-dimensionality. They found that children do not move from one dimensional to two dimensional to three dimensional understanding in a linear fashion. Even at a very young age children displayed an understanding of three -dimensionality and used that understanding to form three dimensional clay figures.
More recently, Swann (2008) looked at how preschool aged children respond when given a variety of papers. The three-year-olds exhibited more exploratory responses to the variety of papers and the four-year-olds moved more quickly to creating symbolic representations using the papers. Swann (2008) organized the children’s variety of responses into three broad categories based on Piaget’s theory of cognitive development – physical knowledge, mental relationships and symbolic representation.

Although these three studies began to develop an understanding of children’s art work, there was still a gap in understanding the type of art work children create. This study sought to answer the broader question: What types of visual art do young children make during project work? A detailed analysis of the visual art domains was conducted in order to gain a better understanding of how young children used the visual arts to learn about their world and express what they knew.

*Pattern of progression in children’s art*

The second purpose of this study was to determine whether young children’s visual artwork shows a pattern of progression from simple to more complex or from one type of representation to another. In the 1900’s researchers such as Luquet, Eng, (Kelly, 2004) Lowenfeld (Lowenfeld & Brittain, 1987) and Kellogg (Kellogg, 1969) analyzed and discussed patterns found in children’s drawings. Luquet, Eng and Lowenfeld identified stages that children progress through in their drawings (Kelly, 2004; Lowenfeld & Brittain, 1987). Kellogg showed patterns of development in drawings across cultures (Kellogg, 1969). Narratives that discussed project work also focus on children’s progression from simple to more complex drawings in what is termed “time one, time two, time three,” etc. drawings (Katz & Chard 2000). However, Arnheim questioned these assumption of stages and patterns of development (Arnheim, 1974).
While Arnheim agreed that children’s art work moves from simpler to more complex levels, he suggested that “early methods of representation remain in use when later ones have already been reached” (Arnheim, 1974 p. 182). Wolf and Perry (1988) agreed that children have a repertoire of visual languages. They suggested that children develop a repertoire of drawing systems and selected what was most appropriate for what they are drawing from among those systems. These drawing systems included object-based representations, gestural representations and point-plot representations. These three systems continue to be used in drawing throughout early childhood and into adulthood. Wolf and Perry (1988) also identified the emergence of a repertoire of genre skills – an understanding of what type of graphic representation to use as well as an understanding of how to represent objects in these different graphic systems. A six year old may represent a house differently using the genres of maps, drawings and graphs. The understanding of genres develops throughout childhood. Children also vary how they render an object. Different styles might be chosen depending on what the child wants to communicate (Wolf & Perry, 1988). Adolescents are aware of how materials can be used to communicate emotions, ideas and messages in their drawings. Kindler and Darras’s (1998) model of pictorial repertoires supports the idea that children use a repertoire of graphic approaches in their drawings. These begin in infancy with kinesthetic gestures and increase with experience during childhood. The model of pictorial repertoires is a significantly different way to look at the development of children’s drawings, however, more research is needed in early childhood to understand the emergence of other forms of visual arts, such as constructions, and to explore the emergence of genre and renditions in early childhood. The idea that children use a range of methods at their disposal to represent their thoughts, feelings and ideas needs to be examined more closely. This
The study seeks to look at this concept and asks: Is there a progressive pattern to children’s art work during a project?

*Purpose of children’s art*

The third intention of this study was to understand why children create what they do. What is the purpose of children’s work in the visual arts? Bronfenbrenner’s (1979) ecological theory suggests the importance of looking at behavior as a function of the interaction between the child and his or her environment. Research must reach beyond looking at the individual child to looking at the Microsystem of the classroom (Bronfenbrenner, 1979). Lowenfeld (1987) echoes this when he discusses the dynamic process of art and suggests the importance of the relationship between the artist and the environment. More recently Pearson (2001) and others (Anning, 1999; Anning & Ring, 2004; Cox & Rowlands, 2000; Ring, 2001; Wilson & Ligtvooet, 1992) implore researchers to view children’s artwork as social practice. Pearson (2001) suggests that researchers should distinguish between the products children make and the reason for making art, looking closely at the process rather than the product. In order to understand what prompts children to engage in an art activity and what they do with the piece of artwork that is created, researchers must not only focus on the piece of artwork, but also on the social and ecological factors that surround the process. Wolf and Perry (1988) and Kindler and Darras (1998) suggest that children’s image making will vary depending on the purpose of the child.

Systematic studies of what actually happens during the process of art making are needed. Many authors have discussed in narrative form what occurs in the process of arts integration to cause positive outcomes (Burton et al., 2000; Dewey, 1934; Eisner, 2002; Jensen, 2005; Katz & Chard, 2000; Malaguzzi, 1998a; Thompson, 2006). These purposes are numerous and can be classified into six categories (Figure: 2) which included cognitive, encoding, decoding, social
and emotional purposes. While some research has been conducted to look at these purposes (Berk & Walsh-Piper, 1994; Burton et al., 2000; Ivashkevich, 2006; Pearson, 1993; Robertson, 1987; Torff, 1994; Wilson, 1974) these studies leave gaps and an incomplete picture (Hamblen, 1993). Studies are needed to confirm the more informal and intuitive discussions of the purposes of arts integration and to fill gaps that have been left by more formal research.

Most research on social influences and purposes of children’s art work focuses on drawings. Pearson (2001) himself focused on children’s drawing in explaining his theory of social practice. Thompson (1995) studied children’s drawing and found that children borrow images from each other. Children talk together as they work and become audiences for each other’s work. The discussions are sometimes critical, but more often supportive, showing a genuine interest and enthusiasm for each other’s art works. This suggests a social influence when children work along side each other in a classroom. Wright’s (2007) study of drawing focused on the narrative purpose of much of children’s artwork and Bhroin (2007) looked at the relationship between play and art and found that there were individual differences in the manner in which children engaged in art activities. Play influenced art and there were recurring themes in both children’s art and play. These themes were highly influenced by what is going on in children’s real lives (Bhroin, 2007). While Bhroin (2007) looked beyond children’s drawings more research is needed in the early childhood classroom to understand children’s purposes for making a variety of artwork, not just their drawings. An analysis of the process children used in creating their visual artworks was conducted from the data collected to explore the purposes of the children’s artwork, thus expanding the understanding beyond not just what the children made but why they created what they did. It was important to view this from a social and ecological
viewpoint to see how factors of the classroom affected why children made what they did and what they did with these artifacts.

Table 1

*Summary of Implications of Learning through the Arts*

<table>
<thead>
<tr>
<th>Category</th>
<th>Implication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive</td>
<td>Problem solving</td>
</tr>
<tr>
<td></td>
<td>Critical thinking</td>
</tr>
<tr>
<td></td>
<td>Discover patterns</td>
</tr>
<tr>
<td></td>
<td>Investigate a theory, idea, problem</td>
</tr>
<tr>
<td></td>
<td>Clarify understanding</td>
</tr>
<tr>
<td></td>
<td>Grasp relationships are hard to grasp</td>
</tr>
<tr>
<td></td>
<td>Elaborate on ideas</td>
</tr>
<tr>
<td></td>
<td>Integrate divergent points of view</td>
</tr>
<tr>
<td></td>
<td>Discovery of new knowledge and ways of thinking</td>
</tr>
<tr>
<td></td>
<td>Reconstruct previous understandings</td>
</tr>
<tr>
<td></td>
<td>Supports memory retrieval and reflection</td>
</tr>
<tr>
<td>Encoding</td>
<td>Symbolic language with which to communicate</td>
</tr>
<tr>
<td></td>
<td>Narrating – telling a story</td>
</tr>
<tr>
<td></td>
<td>Make what is internal, external; record thoughts and ideas</td>
</tr>
<tr>
<td></td>
<td>Perceive things, not just recognize them</td>
</tr>
<tr>
<td></td>
<td>Co-construct understandings of the topics investigated</td>
</tr>
<tr>
<td>Decoding</td>
<td>See closely and more detailed</td>
</tr>
<tr>
<td></td>
<td>See others perspectives</td>
</tr>
<tr>
<td></td>
<td>Refine the senses</td>
</tr>
<tr>
<td></td>
<td>Unpack, defamiliarize everyday objects and events</td>
</tr>
<tr>
<td></td>
<td>Perceive things, not just recognize them</td>
</tr>
<tr>
<td>Emotional</td>
<td>Retreat from boredom</td>
</tr>
<tr>
<td></td>
<td>Retreat from isolation</td>
</tr>
<tr>
<td></td>
<td>Retreat from violent situations</td>
</tr>
<tr>
<td></td>
<td>Joy in creating; aesthetic pleasure</td>
</tr>
<tr>
<td></td>
<td>To calm</td>
</tr>
<tr>
<td></td>
<td>Explore internal landscape</td>
</tr>
<tr>
<td></td>
<td>Express emotions</td>
</tr>
</tbody>
</table>
Ethics

Reflexivity

Ethnographic methods assume a constructivist and ecological perspective (Graue & Walsh, 1998). Each of us creates interpretations of the world and those interpretations are constructed individually and with others we interact with. Ecological structures such as the classroom environment and interactions within that environment influences development in children (Bronfenbrenner, 1979). In ethnography, the researcher seeks to gain an understanding of the interpretations of the children being studied within their naturalistic environment or Microsystem of the classroom. In addition, in qualitative research, the perspective and background of the researcher will influence the data collection and analysis both consciously and unconsciously. During ethnographic fieldwork in a preschool classroom the researcher is surrounded by a multitude of activities and conversations all occurring at the same time. The researcher must choose what to videotape, photograph and record. These choices will be influenced by the researchers’ ideas and perspectives of what the world is or should be like (Agar, 1980; Graue & Walsh, 1998). In this section I will discuss my training, preparation and personal perspectives so that the reader is better able to judge the analysis of this study (Patton, 2002).

My primary training and preparation in the field of early childhood began in the 1970s as an undergraduate in Child Development. Since the writings of Vygotsky had not yet been translated into English, my theoretical studies were grounded in Piaget’s theory of constructivism. Piaget’s theory informed my teaching practices for many years. In the early 1990s I began to study an approach to early childhood education that came from Italian schools in the town of Reggio Emilia. Malaguzzi, the director of these programs, was influenced by
many theorists and educators including Freire, Piaget, Vygotsky, and Dewey. He combined these ideas to form a unique and challenging method of educating young children. This approach has come to be known as the Reggio Approach. A key component of the Reggio Approach is the knowledge that children use many languages to learn. Malaguzzi (1998) called these the “hundred languages” (p.3) and placed equal emphasis on the importance of the visual arts as a language for learning. In the Reggio schools, the young children conduct projects—indepth studies of topics that are of interest to them. In project work the arts are used as a natural language with which children learn. Children represent what they know through the arts and make discoveries about the topic through drawings and constructions. The arts are viewed as an important “tool of the mind” (Vygotsky, 1978, p. 7). Malaguzzi supported this belief of the hundred languages by installing “ateliers”, or studios, in each of his schools. Having had an interest in the arts for many years, my primary focus in studying the Reggio Approach was in the use of the visual arts as a language for learning. My many years of experience with young children led me to understand the importance of recognizing this language and the potential that young children have for learning through the arts. With the advent of No Child Left Behind in 2002, the role of the arts in education is being diminished while the role of formal academics is being emphasized. Even though research shows the importance of the arts in learning outcomes for academic subjects such as math, science and language arts, it has been marginalized in most schools. I find this alarming. I come to this research study with the belief that the visual arts have a crucial role to play in learning. In this study I hope to gain information on what that role is in early childhood development. I have chosen to look at the visual arts through the project approach because it provides a natural method for learning that places an emphasis on the visual arts.
Methods

Field site

The field site chosen for the study is a research-focused early childhood center on the campus of a large, metropolitan university in the Midwestern United States. The university early childhood center was selected because it served a diverse population of children, making it more reflective of a typical case sampling. Enrollment included children from lower socioeconomic levels who qualified for Head Start funding, children funded through tuition and children of students and faculty at the university. A significant number of the children enrolled at the center are second language learners.

This early childhood center uses a constructivist approach to teaching young children (Piaget, 1953; Vygotsky, 1978). The center’s philosophy is that children construct their knowledge through interaction with materials, other children and adults in the classroom. Piaget and Vygotsky are the theorists that informed the teacher’s practice. Educators who use the theory of constructivism acknowledge the importance of the environment of the classroom. Because of this significant contribution, the environment is seen as the “third teacher” (Pairman & Terreni, 2001). Great care is given to the selection of materials to support learning. The teachers also support learning through scaffolding rather than direct instruction. Scaffolding provides external support to children, helping them move to a higher level of thinking by naturalist means such as asking questions and modeling. The children’s interests and developmental levels are taken into account when planning curriculum.

Sampling

The children in the study represent a diverse population, typical of a large metropolitan area in the Midwest. There were 16 children who participated in the study, 5 five-year olds, 7
four-year olds and 4 three-year olds. Five were of African-American descent, two were of Hispanic decent, one from India, and eight were European descent. One of the four-year olds and two of the three-year olds were second language learners. Four children were on Child Service Plans and receiving services for speech delays at the school. One child had an Individualized Education Plan. Eight of the children received tuition funding from Head Start and eight were tuition paying. See Figure 2 for an overview of this sample of children.

Table 2

Sample population diversity

<table>
<thead>
<tr>
<th></th>
<th>3-year olds</th>
<th>4-year olds</th>
<th>5-year olds</th>
</tr>
</thead>
<tbody>
<tr>
<td>African-American</td>
<td>1</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Caucasian</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Hispanic</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Indian</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Second language learners</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Diagnosed with a cognitive disability</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Head Start funding</td>
<td>2</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Child Service Plan for speech concerns</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Methodology

The design of this study was ethnographic in nature. Spradley (1980) describes a continuum of ethnographic scopes of research, ranging from macro-ethnography to micro-ethnography. This study falls closer to the micro-ethnographic scope and follows the single social situation of the preschool classroom (Spradley, 198, p. 30). The sustained nature of ethnography was appropriate for this study of children as extended periods of time were needed to gain an awareness of the children’s world from their understanding and perspective.
(Buchbinder, et.al, 2006). Ethnography fits with the center’s constructivist philosophy (Graue & Walsh, 1998). That is, each of us creates interpretations of the world and those interpretations are constructed individually and with others. In this ethnographic study, the researcher seeks to gain an understanding of the interpretations of the children being studied.

Theoretical Framework

Ethnography is a methodology that gives children a voice and allows children to be their own informants (James, 1996). Children are strong and competent meaning-makers. Ethnographic studies allow an emic perspective of the child’s world in which the children’s language and organization of categories are used to report data (Patton, 2002). The researcher observes the ongoing activities of the children during an ethnographic study and the interpretations they make of those activities. Reconstruction of children’s reality is grounded in their verbal and nonverbal behavior within the contexts they live (Spradley, 1980). Ethnography supports the theoretical framework of constructivism. Children construct knowledge through interaction with objects, other children and adults. An ethnographic study in the preschool classroom allows the researcher to record data that gives evidence of how children are constructing knowledge through the art materials made available and through the social interactions that occur between the children and between the adults and children.

Ethnography is the study of people in context. Bronfenbrenner’s (1979) ecological theory emphasized the critical importance of studying children in the Microsystems they are a part of, in particular, home and school. Studying children in the context of their classroom was a naturalistic approach that allowed the exploration of phenomena in an unaffected state; in this case the phenomena of the role of the visual arts in project work (Buchbinder, et.al., 2006).
Studying children in the context of their environment was essential for understanding the importance of what art children make and why they make it.

*Participant Observer*

In ethnographic studies the researcher’s role and level of participation will affect the type of data that are gathered and the trustworthiness of the data (Graue & Walsh, 1998). Mandel (1988) described three potential roles the researcher might take when using ethnographic methods for studying young children. The first is that of the detached observer. This perspective supposes that the gap between the cognitive and social development of children and adults is so large that the only stance the researcher can take is that of an objective observer. This perspective negates the voice of children as competent interpreters of their world and all data is collected through the researcher’s eyes. The second role is that of a semi-participant. This perspective emphasizes the similarities between adult and children’s roles. The researcher acts as a friend rather than a teacher, however, there is still a dimension of authority separating the children from the adult. The third role Mandel discusses is that of the involved-participant. This role emerges from the belief that adults must fully engage in joint participation with the children in order to gain a complete understanding of their knowledge, understandings and beliefs. The involved-participant acts in the least adult manner as possible, joining in the child’s play in the role of an equal. The children’s interpretations are highly valued and the researcher allows the children to teach him or her about their world.

These three roles and their suitability for this study were considered. The role of detached observer was not appropriate for this study. Theoretically it did not fit the view, critical to this study, of children as competent meaning-makers who can inform data interpretation. The role of involved-participant also did not seem appropriate. The researcher’s participation at this level
might actually have affected the children’s work, a primary source of data in this study. If an adult were drawing and creating alongside children, the contrast of skills could significantly influence children’s confidence in their own level of proficiency. For this study the role of semi-participant was chosen, specifically, the role of a participant as observer. This permitted an emic approach of data analysis in which the children’s perspectives and language could be used to describe and interpret data (Patton, 2002). The role of semi-participant also provided opportunities to develop strong relationships with the children, yet still maintain the role of observer, gaining a balance that would produce more valid and reliable data. This researcher role was discussed with the teachers and approved as a role they would be comfortable with for the study. Interestingly though, as the study progressed over time, the teachers expressed a desire for the researchers to be more involved in managing the classroom. This was primarily due to struggles of supervising this particular group of children, many of whom had difficulties regulating their emotions. Several discussions about the appropriate level of involvement occurred during weekly meetings with the teachers and an agreement was made that the researcher would intervene when behaviors escalated and the teachers were not close by. Thus the role of participant observer at times became more participant oriented as the study progressed.

With all ethnographic studies one of the first steps is to build rapport with the participants (Graue & Walsh, 1998). Building trust is especially important when studying children as when they are young and away from home. They come to trust their teachers and new adults can offset the balance set in an established classroom. Young children are more easily distracted by new people in their environment and time is needed for the researcher to become viewed as an enduring member of the classroom. In order to build trust with the children and teacher, the
researcher spent time in the classroom two weeks prior to collection of data for this study. During that time the researcher observed the children’s interactions and became familiar with the classroom routine. Video and digital cameras were carried during that time so that the children could become desensitized to the equipment that was to be used to collect data.

The sustained nature of ethnography was appropriate for this study of children as it took time to understand their world from the removed perspective of an adult (Buchbinder, et.al, 2006). Relationships had to be fostered between the researcher and the children in order to gain trust and become a natural part of the classroom life. In addition, an extended period of observation was needed to look in depth at the interactions of children during the project and uncover the role the visual arts played in cognitive development. The scope of this research was not meant to be broad and shallow, but narrow and in-depth, focused on the units of analysis of children and their activities with the visual arts during project work (Patton, 2002).

Data Collection

Extensive time was spent in the classroom to collect multiple sources of data. Data collection for this study occurred from April 1 to June 4, 2008. Three hours a day were spent in the classroom, 4 days each week, for a total of 120 hours. Data sources consisted of observation and field notes, videotaping, photography, and interviews with teachers that included informal discussions and weekly meetings. Weekly summaries were written throughout the study. These summaries allowed a review and preliminary analysis of the observations, photos and filed notes. Target questions for research were reviewed and refined through the weekly summaries. Data for this study resulted in a rich collection of video transcriptions, photographs and field notes.

Observations were conducted and field notes were taken of child to child interactions, child to teacher interactions, and child to materials interactions. Video taping of the children’s
work occurred daily as a method of recording observations. Observation and video taping focused on activities that involved work around the project, including work at the art center, outdoors, in dramatic play and at group time. Each video tape was digitized and transcribed. Shorter clips of significant action in the visual arts were reviewed in order to analyze content in more depth.

Photography was used to supplement the video taping. Often times a closer view was needed of the children’s activities and work. Photos were then taken to provide accurate records of children’s work. Photos were developed and paired with a written description of the activity, along with any field notes or transcription from video of the same work.

The photos were also used during the study as a catalyst for interviews with the children. At these times the children looked at photographs and answered open-ended questions such as “Remember when you made this? What can you tell me about it?” or “Tell me how you got this idea” were asked in order to obtain a clearer understanding of the children’s perspectives. Graue and Walsh (1998) recommend interviewing the children in dyads or triads so they will be at ease and help each other with the questions. So, when possible, these interviews were conducted with small groups of children. Interviews with children were videotaped and transcribed.

Informal discussions with the teachers and parents occurred throughout the study. Often, at the end of the day, teachers, parents or researchers had questions or reflections about the project work that had occurred. Discussions with teachers and parents were recalled in written field notes later that day. These discussions performed an important role in the research, as the parents and teacher’s insights and assessment of the children were invaluable and offered a different perspective of the children’s work. Weekly meetings were also conducted with the
teachers to discuss the unfolding of the project and the plans for the next week. Researchers often helped gather materials that were needed or provided photos for the teacher’s reflection.

**Trustworthiness and Credibility**

Trustworthiness and credibility in qualitative research is based on the rigor with which the study is conducted. In qualitative research, triangulation strengthens a study (Patton, 2002). In this study data were checked for consistency through the triangulation of sources and with multiple data collectors.

Video, photos, field notes, children’s work, and interviews were collected as triangulated sources of data. Video and photography were the primary methods of data collection and were chosen because of their ability to record objects and interactions that occurred during research in an objective way. An observer taking notes could not possibly record everything that happened in an active preschool classroom and would most likely choose what to observe and what to record based on his or her biases. While the use of video and photography does not completely negate the interference of bias (researchers still pick and choose what to video and photograph) it does provide some protection and greatly expands the amount and accuracy of data collected (Asch & Asch, 2003; Collier, 2003; Schaeffer, 2003). Video and photography also supports scientific rigor in qualitative research because the camera lens has the capacity to focus on all aspects of an activity at the same time and record it for reviewing later. Video and photography allowed the researcher to access important data that could not be acquired through observation and field notes alone (Asch & Asch, 2003; Collier, 2003; Schaeffer, 2003). Although there was some concern that the presence of a camera could affect the behavior of the participants in the study, Schaeffer (2003) concluded that children’s awareness of the camera diminishes fairly quickly and, therefore, should not be considered detrimental to the trustworthiness of data. This
was found to be the case in this study also. Taking each of these aspects into consideration, video was deemed a crucial component of forming valid and reliable results for this study.

Additional methods of triangulation were employed. Three observers were to collect data in an attempt to reduce bias and provide reliability of results (Patton, 2002). The observers discussed data collection throughout the study. Weekly meetings were held between the team of researchers and the teachers. During these meetings a beginning analysis of what was occurring in the classroom was formed. The contributions of three data collectors and meetings and discussions with the teachers and parents all proved valuable in offering different perspectives on the children’s activities. One observer might overhear or see something another observer had not. Sharing this information was crucial to gaining a complete understanding of the dynamics of the classroom and individual children’s responses.

Analysis

The ethnographic records comprised of video, photos, field notes and (video taped) interviews which were collected for approximately forty days, three hours each day (Spradley, 1980). The video was digitized daily and photos were downloaded and reviewed. Photos that were most salient, based on clarity, representativeness of the activities of the day and those photos of the children’s art works were printed. Daily summaries were written throughout the study. These data summations reviewed the main observations, themes or issues that appeared from that week. Each week the observations were discussed in the following areas:

1. Summary of the information for the target questions
2. Other observations that were salient, interesting, illuminating or important
3. New or remaining target questions to consider for the next contact
4. Reading Related to Research
These weekly summaries provided time for reflection of the observations which in turn led to more focused observations (for an example, see Appendix C). Five days of video were transcribed during the study, and the remainder was transcribed once the study was completed. The video transcription was written to include descriptions of the setting, the actions of the children and verbatim transcription of the children’s conversations and discussions (for an example, see Appendix D). The data collection resulted in a rich compilation of video transcripts, photos and field notes.

An inductive analysis of these records was conducted to search for patterns in the data related to the research questions posed by this study (Hatch 2002, Spradley, 1980). Several layers of analysis were conducted. Photos, video transcription and field notes were analyzed using domain, content, taxonomy and componential analysis (Spradley, 1980).

Photos taken of the children art works were first analyzed to identify the strict inclusion, the semantic relationship of ____ is a kind of art (Spradley, 1980); for example, an attached collage is a type of art. Videos and transcripts were also used to look at the types of art the children made, this time using the different data source. The video provided a completely different view than the photos alone. The video showed in more detail how children interacted with the materials, the other children, and adults in the classroom. Many of the conclusions that had initially been made through looking at the photographs and field notes alone were revised after viewing the video. Domain analysis was used to identify, organize, and represent commonalities and differences between the types of art identified (Hatch 2002, Spradley, 1980). This process was iterative. The photos and video were reviewed many times until a clear picture of the types of art children made emerged.
The photos were also analyzed using a quantitative content analysis (Berg, 1995). Tally sheets were used to take this large volume of photos and identify patterns and quantitative data (Patton, 2002). This analysis was used to identify the numbers of the different types of art the children made and to analyze the progressive pattern of the children’s work. Once initial categories of the types of art were identified, each type was counted and placed on a spreadsheet column for that day. These were then tabulated to acquire percentages of each type of artwork (see Appendix E for a screenshot of these spreadsheets). In addition, a chart was hand tabulated for each day of the study which identified who made each type of art. Analysis from this chart was used to determine who made a certain type of art and when they made it, provided information on the progressive nature of the children’s work.

The videos were analyzed in order to discover the purpose of the children’s work with the visual art materials. The video transcriptions were loaded into the software program, NVivo (QSR International, 2009). The video for each day of the study was viewed and the transcript for that day was coded using open coding (Strauss and Corbin, 1998). In open coding, portions of the transcripts were highlighted and then given a descriptive name. Once the transcripts were coded they were analyzed again, using domain analysis. Coded transcripts were grouped into domains. The domain analysis searched for the semantic, rational relationship of _____ is a reason for working with art materials in order to identify the children’s purposes for working with the art materials (Spradley, 1980). For example, engaging others in play is a reason for working with visual art materials. These coded domain groups were printed out and stored in binders to review for taxonomic analysis.

After domain analysis, taxonomic analysis was used to discover relationships within the types and purposes of visual art work the children made during the project. Taxonomic analysis
revealed the relationships between the domains and subsets (Spradley, 1980). For example, items that were coded as “play” were analyzed using domain analysis to differentiate between subsets of how the arts were used in play – as props, to engage others and to enter play. Componential analysis was used for a systematic search for the attributes of the domains of children’s work so that clear delineation of the types of visual artwork could be made (Spradley, 1980) (for an example, see Appendix F). This was an iterative process that occurred multiple times until the final taxonomies, which are presented in the tables in the findings section of this document, were realized. This constant, comparative analysis was used to ensure that all of the children’s work was completely explored for information and relationships and to insure the domains were genuine and no other explanations or categories could be construed from the data.

Once domain and taxonomic analysis was established, a sample of five transcripts and twenty photos were examined and coded by two other professional early childhood educators in order to establish inter-rater reliability. Using the domains and domain descriptions established by the researcher, the educators coded the transcripts and photos. Trustworthiness of the results of the study was established at 85% by these two outside reviewers.
Findings

The project for this group of children began with their interest and questions about a large tree log that was in the classroom. Their questions ranged from “How long do trees live?” to “Is there anything inside of trees?” The study of trees extended into a study of things that live in trees when the children’s observations led to the discovery that ants, caterpillars and birds all make homes out of trees. A visit to the local Civic Garden Center and a naturalist’s visit to the classroom helped children to understand trees and animals that live in them. The children’s learning was supported by books and observations of trees, caterpillars, butterflies and birds over a 10 week period. The children spent time at the art center each day which was supplied with a variety of material. They created a classroom garden center in the dramatic play area. The project culminated in a party for the birds and butterflies on the last day of school.

Typically in project work the teacher provides feedback and suggestions to children’s use of the visual arts in order to enhance learning around the topic. This type of facilitation rarely occurred during this study. The teachers resisted becoming too involved with the children work at the art center. The assistant teacher said “If they are busy over there, I usually just leave them alone”. At times children were asked to draw the butterflies or trees; however the children were not encouraged to revise their work based on new understandings. While this resulted in less indepth inquiry using the arts, it did provide a unique view of children’s self-initiated art works.

Types of Children’s Art Work

Analysis of children’s work revealed two domains of visual artwork. The first was two dimensional works and included subsets of observational drawings and cut paper. The second was three dimensional works and included subsets of cylinders and collaged items (Figure 2). Taxonomic analysis revealed several types within each of the subsets. In addition to these
domains and subsets, the analysis indicated that children integrate many of these different types of art work. This integration of multiple types of artwork is seen in the center of the mandala, where the individual domains come together.

Figure 2. *Mandala representing the types of art works made by the children*

Two Dimensional

*Observational drawings*. One domain of artwork quite common in project work is observational drawings and the children in this class created many drawings while observing an object either inside or outside of the classroom (Katz and Chard, 2000). The children worked to represent some or all of the parts of the object in realistic ways. These took the form of non-
representational observational drawings, simple observational drawings and detailed observational drawings (Figure 3). This domain was frequently used by the children during this project (32% of all artwork created). Observational drawing occurred primarily during the investigation stage of the project when children were just beginning to learn about the trees and things that live in them. Most drawings occurred spontaneously and some were at the teacher’s prompting.

<table>
<thead>
<tr>
<th>Observational Drawings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-representational</td>
</tr>
<tr>
<td>Simple</td>
</tr>
<tr>
<td>Detailed</td>
</tr>
</tbody>
</table>

Figure 3. Observational drawings

During this study children made non-representational drawings of the objects they were observing (22% of all observational drawings). At first glance these drawings looked like a collection of scribbles across the page. Scribbles have traditionally been described as random markings made by young children that represent movement rather than a thought, idea or feeling (Gardner, 1980; Lowenfeld and Brittian, 1987). What made these drawings different from random scribbles was that they were purposefully meant to represent the object the child was observing. Perhaps the best example of a non-representational observational drawing was created by Patrick when the class visited the Civic Garden Center. The children were given time to sit in an opening, observe the trees and flowers and create drawings of them. Patrick, who had earlier that week created a more detailed drawing of the owl the naturalist brought to the classroom, made a non-representational drawing at the Civic Garden Center that he indicated were the trees.
This drawing was made with a selection of color pastels laid down in swirls and lines. Before Patrick’s drawing of the owl a few days earlier, this five-year-old had only been observed drawing with scribbles in a circular motion and he used a variation of this method to form an abstract drawing of the trees that day. Patrick represented the trees in an emotional, more abstract manner, not unlike a professional artist.

Children also represented objects through simple observational drawings (50% of all observational drawings completed during this study). These were quick drawings that captured the basic parts of the object. Several drawings of the caterpillars were made in this simple observational style. Tianna used the basic shape of a long, narrow line to represent the body of the caterpillar. She placed filled circles at the head and tail of each line. Next, she drew circular pink lines to represent the nest the caterpillars had made on the branch (Figure 5). When using simple observational drawings, children seemed to choose either the most important parts of the object or what was most noticeable to them.
Detailed observational drawings were more complex and contained more components of the object than simple observational drawings. Twenty four percent of the observational drawings comprised this subset. Bridget brought a branch from home with caterpillars on it. This branch was placed in a vase of water. Bridget’s drawing of it shows the stems with leaves and flowers, the web with two caterpillars, the vase and the water (Figure 6). Although it is a straightforward line drawing, it shows many details of the branch that sat on the art table that day. Colleen’s drawing of the same branch shows detail of the body of the caterpillar, the flower on the branch, water and vase. The use of color gives an added dimension to her drawing.
Cut paper. A second domain of two dimensional artwork the children used during the project was cut paper. Paper and scissors were available in the art center of the classroom everyday and children used these in many different ways throughout the project. While cut paper made up a smaller percentage (9%) of all artwork the children made, the consistency of the subsets throughout the study indicated the importance of this type of art work. Analysis of the data revealed three subsets to this domain: snipped, cut: unattached and cut: attached (Figure 7). Only those art works using paper as the primary medium were included in this domain (cutting out a drawing, for example, was not included).

<table>
<thead>
<tr>
<th>Cut Paper</th>
<th>Snipping</th>
<th>Cut: unattached</th>
<th>Cut: attached</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Snipping" /></td>
<td><img src="image" alt="Cut: unattached" /></td>
<td><img src="image" alt="Cut: attached" /></td>
<td></td>
</tr>
</tbody>
</table>

Figure 7. Cut paper

Children used snipping when working with paper (Figure 7) -- the scissors were used to cut small lines across the edge of the paper. Art works created by snipping made up 12% of all cut paper observed during this study. Although not a considerable percentage of the children’s artwork, this subset was more than an exploration or experimentation with the scissors. From an adult perspective snipping may be considered of an action rather than an art type, or at best a method of adding decoration to something made with paper. However, for these children it appeared to have a more significant meaning as a legitimate type of art. Snipping was used alone and in addition to other types of art. Figure 8 shows how Tiana began her piece of art work by snipping one edge of the paper. Later she added collage materials to that same piece of paper.
Throughout the project children also made art works with paper that were cut, but not attached. These were made by cutting paper cross-wise, and then combining the pieces to make something, but not attaching these pieces with any type of adhesive. These artworks were temporary in nature. Figure 9 shows a nest for the toy bird made by Tiana by cutting two papers in half and laying them in a basket. Although these were not very complex constructions, cut but unattached papers represented important information about children’s thoughts and ideas during the project. These pieces of art were quick and easy to make and allowed even the most inexperienced child to participate in adding materials to the garden center the children were creating in the classroom.

Papers were also cut and attached with an adhesive, usually tape or glue, which were readily accessible in the classroom. Figure 10 shows representations of birds created with cut and
attached paper by children during this study. These types of art work showed an uncomplicated way of representing something. All detail has been stripped away leaving the essential form of the object. Once the papers were attached, permanence was added to the form. In the two depictions of birds shown in Figure 10, the bird has been represented by a two pieces of cut paper that were taped and stapled perpendicular to each other. The addition of adhesive assures that the form will not be lost.

![Birds made of cut paper that has been attached using a staple and tape.](image)

Figure 10. *Cut paper: attached*

**Three Dimensional**

*Cylinders.* One subset of three dimensional types of artwork was cylinders. Cylinder constructions comprised 21% of all the types of art the children made during this study. The basic cylinder shape was a tube and this basic tube shape often transformed into wrapped and cone subsets (Figure 11). Tubes and cones and wrapped items were methods the children used to make three dimensional cylinders from two dimensional papers. Cylinders became homes for caterpillars, presents and party hats as the children prepared for the end of the project party.
Tubes, like the one shown in Figure 11 were a shape used often by the children as they experimented with ways to make paper “stand up”. These comprised 41% of all cylinders made by the children during the study. This shape, so easy for most children to make, became many things, like a sleeve on an arm, or a bracelet. Figure 12 shows two of the five year olds making tubes and exploring the affordances of the tubal structure. However, more often the tube shape metamorphosed into one of the other subsets of the cylinder domain.

Tubes easily transformed into a wrapped art item. The children simply flattened the tube, folded the edges over and taped the ends to the center of the structure. This art type was created by many of the children during the project and comprised 45% of all the cylinders that were
made during the study (Figure 13). The wrapped art work most often became presents for other children in the class or siblings. These wrapped items were left empty and created with something inside. Having something inside made them more present-like and so children became very proficient at making this type of artwork as they prepared for the birds and butterflies party. They wrapped up all sorts of objects that had been placed in the art area such as bottle caps, beads and ribbon.

<table>
<thead>
<tr>
<th>Wrapped: empty</th>
<th>Wrapped: empty</th>
<th>Wrapped: item inside</th>
</tr>
</thead>
</table>

Figure 13. Wrapped art works

The tube was also transformed into a cone shape. These comprised 14% of the cylinder shaped art works that were created by the children. Partial cones and complete cones were also two subsets of the tube that were created by children during this study and they proved to be more complicated structures to make for most children. The partial cone was a form that fell between the tube shape and the cone shape (Figure 14). Sometimes these were children’s attempt at making a full cone shape, but other times they were shapes in and of themselves that were named as a boat or hat. Elizabeth became particularly adept at making the full cone shape and her cones represented boats, volcanoes, homes for the caterpillars and party hats (Figure 15).
Collage. A second subset of three dimensional art works the children made during the project was collaged pieces. Collaged items comprised 22% of all pieces of art children made throughout the study. There were always a variety of materials available for the children to work with in the art center: feathers, beads, ribbon, sticks, leaves, flower petals and small shapes of paper. Children used these materials, along with a base, such as paper or pieces of Styrofoam, to create collage pieces that comprised three subsets: unattached materials, attached materials, and organized attached materials (Figure 16). Although collages were made by the children throughout the study, the children created the majority of these art works when they were making decorations for the party for the birds and butterflies.
Collage

<table>
<thead>
<tr>
<th>Unattached materials</th>
<th>Attached materials</th>
<th>Organized attached materials</th>
</tr>
</thead>
</table>

Figure 16. Collage

Brommer (1994) defines collage as the “aesthetic act of pasting objects and papers to a surface” (p. 12). However, an analysis of the children’s work from this study found that children also create pieces of collage art works in which materials were not attached to the base. Nine percent of the children’s collages were those where the material was not attached to the base with an adhesive. Like the unattached cut paper these collage art works were very temporary in nature. Children were diligent about carefully placing the items on the base, but were not concerned with making a permanent product. When it was time to clean up the materials were put back in the collage tray without protest from the child who had made the collage piece. Process, not product was the focus of the work. Joy, a child with a cognitive disability, made many of these types of art works (Figure 17). At first it seemed that Joy was just dumping out the collage materials onto the table, but a closer look at the video showed that she deliberately laid out paper and placed items on it. Joy created these unattached collage art works at the same time as some of the other girls were making collages at the table and was clearly her way of completing a collaged art work. Many of the three year olds also spent time creating collages with unattached materials. Rose spent a particularly long time one day creating her collage piece with careful placement of each bead and flower petal (Figure 17).
Children also created more permanent collages by attaching the materials with tape or glue. Children generally used tape to attach their materials as it provided more immediate adhesion (did not involve a waiting period to dry). When glitter glue was introduced though, it seemed to act as a transitional material for many children. The glitter in the glue was a collage material itself, and the glue was an adhesive. Squeezing glitter glue on to the surface provided an adhesive that other collage material stuck to. Seventy five percent of the collaged artworks were made with the materials attached. Many of these collage art works were very spontaneous and not much attention was given to the aesthetics of the arrangements. The children sometimes named these collages. Tiana created a “princess dress” with feathers (Figure 18) and many other children used this type of art to create decorations and invitations for the party for the birds and butterflies.

Figure 17. Unattached collage

<table>
<thead>
<tr>
<th>Joy’s unattached collage</th>
<th>Rose’s unattached collage</th>
</tr>
</thead>
</table>

Figure 18. Attached collage

<table>
<thead>
<tr>
<th>Tiana’s attached collage princess dress</th>
</tr>
</thead>
</table>
Children also created collage art works that showed a more thoughtful organization of materials. These organized, attached collages took time to create. Some children spent their entire morning working on one of these art works. Audrey was especially interested in this type of art. She would often forgo any other activity, including a trip to the muscle room, in order to work on her collages. Figure 19 shows one of her pieces of art that was carefully put together one morning. She began by cutting and folding the paper and placing the leaf at the top. She carefully added other pieces of bark and cut paper symmetrically to create her collage. Elizabeth also designed her collages by carefully organizing the materials. Figure 19 shows two examples of her work with feathers which were organized carefully to make a design. The children did not usually name collages that were organized and contained attached materials. They seemed to have been created for the aesthetic purpose of putting together materials to make an interesting and pleasing design (Kolbe, 2005).

<table>
<thead>
<tr>
<th>Audrey’s organized attached materials.</th>
<th>Elizabeth’s organized attached materials.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Figure 19. Organized attached collage</td>
</tr>
</tbody>
</table>

Integration of multiple art domains.

The center of the mandala of the types of children’s art (Figure 2) shows that children not only created artworks in the individual domains, but they also integrated the different types of art domains (Figure 20). These young children were able to combine them into very complex pieces
of art. The integration of the art domains demonstrated children’s sophisticated use of the materials and made up approximately 16% of all the artworks made by the children in this study. Tiana created an example of this integration when she combined an empty, wrapped tube with collage materials. She called it her “tree monster” and proudly hung it up on the classroom wall (Figure 20, A). Elizabeth spent a long time creating her boat (Figure 20, B). She began by cutting paper and drawing the figure of a person on it. She added a cone shape and attached pipe cleaners for oars. She filled the boat with many unattached collage materials. Audrey, who was quite adept at cut paper and collage, created this book (Figure 20, C) for the graduate student to take notes in. She cut rectangular pieces of paper and attached them with tape. She added petals as collaged decorations to the cover and line drawings inside. One day Elizabeth was struggling to make an observational drawing of the sunflower that was on the art table. She pulled off some of the petals and arranged them in a circle on her paper, then added a stem, leaves and seeds with a yellow marker (Figure 20, D). Audrey combined collage with drawings and cut paper when she made her log cabin (Figure 20, E.) She spent a great deal of time layering the pipe cleaners just how she had “seen them make a log house on TV.”
Integration of Multiple Domains

A. Wrapped with the addition of collage
B. Cone with the addition collage and cut paper
C. Cut paper with the addition of collage and drawing
D. Drawing with the addition of collage
E. Collage with the addition of cut paper and drawing.

Figure 20. Integration of multiple domains

Pattern of Progression in Children’s Art Works

A content analysis of which children created within each domain and subset was conducted in order to answer the second question of this study -- Is there a progressive pattern to children’s art work during a project? As was suggested by Arnheim (1974) the answer to this question was not a simple yes or no. Three important findings from this study helped to explain the complexity of the progression of children’s art work:

1. Overall, the data suggests there was an age progressive pattern to children’s art work
2. Experience played an important role in a child’s level of art making.
3. Children used a repertoire of these types of art throughout the project.

Age progressive pattern to children’s art work.

Findings from this study did support the theory of the progression from beginning types of art work to more complex types as children develop. Overall, the typically developing, older children’s art works were more complex. The majority (50% – 80 %) of the pieces they made fell towards the center of the mandala illustrating the types of art children made (Figure 2), suggesting that as children mature their art work does become more differentiated. Five-year-
olds, such as Audrey were more able to create sophisticated pieces of art that integrated different types of art. Figure 21 shows a bird nest that she made using sticks, leaves and branches. She included a drawing of a bird with the nest. Figure 21 shows another 5-year-old, Colleen, making a complex observational drawing.

<table>
<thead>
<tr>
<th>Bird nest with drawing of the bird by Audrey</th>
<th>Colleen making a complex, observational drawing</th>
</tr>
</thead>
</table>

Figure 21. *Five-year-olds art work*

Consistently, the art works of children who were on IEP or Child Service Plans fell in the more beginning level. Joy was also 5 years old. She was on an IEP for cognitive delays and had no speech except for one word utterances. A review of her artwork shows it was not as complex as the other 5 year olds. Figure 22 shows one of Joy’s unattached collage pieces which she created frequently throughout the project. Figure 22 shows her non-representational drawing of a butterfly. Although Joy’s art works may be an indication of her cognitive level, it is important to note that the recognition of the types of art she created, even though at a beginning level, allowed her to be an active contributor to the project and an important member of the classroom.

Younger children’s art works were also more often at the beginning levels. Three-year-olds such as Rose and Shaun also created art works that fell in the outer ranges of the mandala diagram (Figure 2). Rose created unattached collages and beginning observational drawings. Shaun made tubes empty wrapped tubes. Figure 23 shows one of Rose’s simple observational drawings of the flowering tree branch and Shaun’s empty wrapped tube.
Joy’s unattached collage of flower petals  
Joy’s non-representational drawing of a butterfly

Figure 22. Art work of child with cognitive delay

Rose’s beginning observational drawing  
Shaun’s empty wrapped tube.

Figure 23. Three-year-olds art work

Experience plays a role in a child’s level of art making.

An additional finding from this study was that the amount of experience children had in a certain type of art played a role in the level of the types of art children made. Children advanced in their ability to make more complex types of art works as they gained experiences during the project. One reason for this was likely due to the nature of project work, as children were given many ways to explore the topic of trees and things that live in them. One day a sunflower had been placed on the table to encourage the children to draw from observation. Elizabeth was drawing with a group of girls and she was becoming frustrated over her flower drawing. An adult stepped in to support her. Elizabeth pulled the sunflower close to her and when asked if she was looking at it, Elizabeth replied that she was “smelling it”. She began to rub the petals and pulled
one off. She laid the petal down on her white paper and then pulled off another petal. She placed one petal after another in a circle on her paper and then taped them down with clear tape “so the sun could shine through”. Next she drew “seeds” in the center of the circle the petals made and added a stem and leaves with a yellow marker (Figure 24). Elizabeth’s experiences with the flowering tree branches that were brought into the classroom and this experience of smelling the flower, touching the petals and looking closely at it allowed her to represent the flower in a more complex way.

Elizabeth documents the sunflower by using the petals from the flower and a marker to draw the stem, leaves and seeds.

Figure 24. Experience leads to more complex art

Another way experience played a role was that prior experience in a certain domain led to more complex art works in that domain. Certain children seemed to show a preference for a certain type of art and spent the majority of their time making those art types. Their experience in one particular type of the art enabled them to be more advanced in that art type. Audrey spent the majority of time in the art center making artworks with layered papers and other art materials. She created complex art works that integrated cut paper, collage and drawings. These pieces showed an advanced level of complexity that was not seen by her in the other domains such as observational drawing (Figure 25).
John was a child who had just turned four. John’s mother reported that he spent a great deal of time at home drawing. As the project progressed he spent time drawing the garden center. One day the teacher was encouraging the children to draw pictures of the butterflies that had hatched in the classroom. John had no experience in drawing butterflies. His first drawing showed the basic shape of a butterfly drawn with simple lines that crossed in the middle, fairly typical of a younger child. A few minutes later he made another picture of the butterfly, this one had two wing shapes containing dots of colors (Figure 26). Most likely he was able shift to more complex observational drawing so quickly because of his previous experiences with drawing. John’s first drawing shows work typical of the three year olds in the classroom, but the second drawing shows work more typical of the older children. So, although age was somewhat of a predictor of the level of art work a child made, experience seemed to play a very important role in the level of art the children created.
Children use a repertoire of the types of art.

The children’s work from this project showed that these young children used a variety of approaches throughout the project and that the type of work the children choose to produce depended on their purpose and motivation at the time, not necessarily the developmental stage they were in. A child who used detailed observational drawings to represent what they knew one day might use non-representational drawing the next day to represent something else. A child, who was capable of complex collage which integrated different types of art, was observed using a more beginning type of artwork such as attached cut papers another day.

Patrick had the ability to create detailed observational drawings as he did when drawing the Venus Flytrap. However, he also chose to represent trees in a very expressive approach when drawing the trees at the Civic Garden Center (Figure 27). Audrey created collages that used the integration of art types, but also made simpler cut paper art works, both attached and unattached (Figure 27). Elizabeth used a complex integration of the types of art but at other times, used the simpler structure of the tube and cone in her work (Figure 27). While it was assumed that children would progress to more detailed levels of the domains, leaving the other, simpler forms behind as the project progressed, this was not found to be the case in this study. Instead the children used the approach they needed at the time according to the purposes they had for their work.
Figure 27. Repertoire of types of art work

Children’s purposes for making art works

An analysis of the video and transcripts were conducted to answer the final question:

What was the purpose of children’s work in the visual arts? The data from this study suggested that the children’s work in the visual arts met three of the developmental purposes as proposed by Bendtro & Brokenleg (1990). These were the need for mastery, belonging and generosity (Table 3).
Mastery is defined as developing competency (Bendtro & Brokenleg, 1990). Children had a developmental need to feel they are competent within their environment. Children met their developmental need for mastery by exploring materials and representing their thoughts, ideas and feelings through the visual arts.

Belonging is the desire to be a part of a community, in this case the classroom community (Bendtro & Brokenleg, 1990). Children had the need to feel they belong to a social group; that they were accepted. The need to belong was met by making items to use in play, using their art works to connect with others and making things they could wear.

Generosity is the need to make a contribution (Bendtro & Brokenleg, 1990). Generosity was the unselfish act of giving to the community. The children provided items needed in the classroom through their visual artworks. This and decorating met the need for generosity.

Table 3

*Purpose for Children’s Work in the Visual Arts*

<table>
<thead>
<tr>
<th>Category</th>
<th>Purpose</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mastery</td>
<td>Explore</td>
<td>Investigate the physical properties of the materials.</td>
</tr>
<tr>
<td></td>
<td>Record</td>
<td>Create a lasting account of a thought, feeling, memory or idea</td>
</tr>
<tr>
<td>Belonging</td>
<td>Play</td>
<td>Enter</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Use something made as a contribution to enter play</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Engage others</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Use something made to entice others to engage in play</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Prop</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Use something made as an object in play</td>
</tr>
<tr>
<td>Connect</td>
<td>Show affection</td>
<td>Create something and give it as a display of affection</td>
</tr>
<tr>
<td></td>
<td>Establish a relationship</td>
<td>Create something and give it to establish or reestablish a relationship</td>
</tr>
<tr>
<td>Wear</td>
<td></td>
<td>Create items for personal enhancement</td>
</tr>
<tr>
<td>Generosity</td>
<td>Provide</td>
<td>Create an item that is needed. It serves a function and is a contribution to the classroom.</td>
</tr>
<tr>
<td></td>
<td>Decorate</td>
<td>Create items for enhancement of the classroom</td>
</tr>
</tbody>
</table>
Mastery

To explore. The exploration of visual art materials served the purpose of meeting the children’s need for mastery. When new art materials were introduced in the classroom, the children spent time exploring them. Art materials were often introduced at the special activity table. The teachers planned a special activity a few times each week. These special activities were centered around items not available in the classroom on a daily basis and or on a new material brought into the class, such as pastel chalks, or watercolors. New materials were introduced one at a time, unlike the art center where many different, and usually familiar materials, were available to the children throughout the year. The children were encouraged and given time to explore new materials for the special activity and almost all the children found time to participate. The special activity was novel and interesting to the children and they learned about many different art materials in this way.

Children also spent time exploring methods of using familiar materials in new ways. Audrey discovered that the liquid from markers did not stick on shiny surfaces. She picked up a marker and told the teacher “watch this”. She made a mark on the clear tape at the top of her construction and rubbed it with her finger. She showed her finger to the adult. “You can see that it comes off”. She transferred this newfound discovery to another piece of art work. She carefully colored on pieces of plastic straw with a purple marker. She pressed her finger into the markings and then tapped her finger on the paper, making finger prints.

Creating art works for the purpose of exploring materials rarely resulted in the representation of an object. Instead these explorations invited the children to experience the sensory qualities of the materials as they explored them through touch, smell, sound, sight and sometimes even taste (Eisner, 2002). These explorations allowed them to develop mastery in
their understanding of how these materials could be used (Bendtro & Brokenleg, 1990). On a day when colored pastel chalks were at the special activity table, Mark picked up several pieces of chalk and dragged them horizontally across the black paper. He did this a number of times, adding more and more lines to his paper. Adding another piece of chalk to the ones in his hand, he dragged them across the paper in vertical lines. He picked up the paper and shook it, watching some of the chalk fall off onto the table. Next Mark chose just one piece of chalk and rubbed it across his paper, holding the chalk in his fist. He chose different piece of chalk and moved it across the paper in scribbled lines. He lifted the paper and shook the chalk dust from it again.

Patrick also shook his paper. “Look, it makes dust, see?” He blew the chalk dust from the tray (Figure 28). This was the children’s first experience with pastel chalks. Mark’s explorations using one piece and then several pieces of caulk at the same time taught him of the affordances of chalk – it leaves a wide line and the colors mix easily with one another. Shaking the paper let him and Patrick know that chalk does not fully absorb into paper like a marker does. When Mark’s fist rubbed across the paper, it smeared the chalk and some of it came off on his hands.

Sometimes explorations of materials ended in a finished product and sometimes they did not. These explorations were considered valuable and enjoyable to the children. This was shown in their actions such as when Mark was finished with his explorations of pastel chalk. He took it over to the teacher and showed it to her and talked to her about his work.

Children clearly enjoyed these explorations of the materials and the art works that resulted from them. One day the teachers had set out bark for the children to do rubbings and printing with, but the children had the idea to explore the bark by painting it (Figure 28). Most of the morning was spent painting the bark:
Mark: This is a fun day, isn’t it?
Colleen: The funnest day we had
Bridget: I don’t want to go outside!

Perhaps one of the reasons these explorations were enjoyable was because they were sensory experiences. Most adults find these types of experiences enjoyable as well. Patrick indicates this when working on his pastel chalk picture: “I don’t want to be loud right now”. The experience of making a piece of art for exploration of the materials alone was an enjoyable and relaxing experience.

<table>
<thead>
<tr>
<th>Patrick’s exploration with pastel chalks</th>
<th>Mark’s exploration with paint on bark.</th>
</tr>
</thead>
</table>

Figure 28. *Exploration as a purpose for making art*

*To record.* Children created art works in order to record their thoughts, feeling, and ideas. The young children in this study had not fully developed the skill of writing, so it was not surprising that they were prolific in using the arts as to document the world around them. The practice of recording their thoughts, feelings and ideas on paper allowed the children to develop competency in using the arts as a language of communication.

During this project the children were sometimes encouraged to use drawing as a way of looking closely at the trees and things that live in them. The children were given research notebooks, and they drew many pictures in these notebooks. Patrick made drawings of the ants and spiders he saw on the tree. Bridget drew the flowering tree branches brought into the classroom. Catherine made drawings of the trees at the Civic Garden Center (Figure 29). When
asked why she made these drawings, Audrey reported “so that I can remember”. The process and the drawing that resulted allow children to look closely. Looking closely, focusing on the object helped them to remember it. It “stabilized what would otherwise be difficult to hold on to” (Eisner, 2002, p. 10).

<table>
<thead>
<tr>
<th>Bridget’s drawing of a flowering tree branch</th>
<th>Catherine’s drawing of a tree</th>
</tr>
</thead>
</table>

Figure 29. Recording as method of remembering

Children’s chose to record what was important and interesting to them. Audrey explained early in the project that she was creating “designs for making a tree” as she recreated the log house she had seen made on television. When Colleen drew the caterpillar on the tree branch, the caterpillar was oversized, signifying the importance of this creature for her (Figure 30). Children drew what they knew (Lowenfeld & Brittian, 1987), and so these representations allowed the teachers to listen to the children and what they understood about the topic of trees and things that live in them.

<table>
<thead>
<tr>
<th>Patrick drawing ants and spiders</th>
<th>Audrey’s drawing of a tree and owl</th>
<th>Colleen’s drawing of the caterpillar on the branch</th>
</tr>
</thead>
</table>

Figure 30. Recording what was important or interesting
Belonging

To play. In this study many of the items the children made were representation of things in the real world and these art works were often used in their sociodramatic play. Children used their art works for entry into play and to engage others in play throughout this study. Children also created art works which were then used as props in play (Table 4). The use of the visual arts in sociodramatic play allowed children to become a member of play scenarios, which met their need to belong to the classroom community.

Table 4

Purposes of Making Art Work For Play

<table>
<thead>
<tr>
<th>Play</th>
<th>To enter</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>To engage others</td>
</tr>
<tr>
<td></td>
<td>Props</td>
</tr>
</tbody>
</table>

This study suggests that one way the children negotiated entering play was though a piece of their artwork. These young children became adept at the negotiation of entering play. Like most preschoolers the children in this class created elaborate sociodramatic play scenarios during the day. On one day Elizabeth was at the art table and a group of five-year-old girls were on the other side of the room discussing a play scenario they were planning. Elizabeth could hear the older girls saying “I’ll be the mom” and “I’ll be the big sister”. Elizabeth continued with her cutting, and said, “I’m the little sister” although most likely the other girls did not hear her. Elizabeth taped two bottle caps together first placing some small pieces of cut paper inside. In the background the older girls were heard acting out the play they had planned. When asked what she was making, Elizabeth replied, “I am making a thing for the little baby and I don’t
know what to do with her and I’m the sister”. She then walked over to the area where the five-year-old girls were and said “Hey guys, I made a special present for you”. They replied, “Thank you!” Elizabeth was able to enter the sociodramatic play by giving one of her works of art that the older children could use in play.

Data from this study suggest that children used their art works as a means of engaging others in play. Engaging others in play becomes an important skill as cooperative play increases during the preschool years (Rogers & Sawyers, 1988; Parten, 1932). In order for sociodramatic play to occur, there must be players. Engaging others to play roles was essential to being able to enact a play scenario. Children used their art works to engage others to play those roles.

One day Bridget, Audrey and Colleen were at the art center, each working on different pieces of art work. They had developed a play scenario in which Bridget was the nurse and Audrey was the mother who was about to give birth. Bridget and Colleen were making props for their play, but Audrey was working on a collage piece and was very involved with her art making. Bridget wanted Audrey to get involved in the play as the pregnant mother, and used something she made to entice her to enter their play. The follow excerpt from the day’s transcript shows how Bridget used her art work as a means of engaging Audrey in sociodramatic play:

Bridget: Audrey, you are all set for your baby to come out.
Audrey uses stamps on the white papers she is working with.
Bridget: Audrey, you have a baby in your belly. Come with me Audrey
Audrey: I’m at work
Bridget: Follow me Audrey, I need you to follow me
Bridget: Audrey, it’s time for your payment. I’m all set Audrey.
Audrey: I’m making a …
Bridget: When I count to 10 it’s time to come with me.
Audrey tapes the small pieces of paper she has cut to her paper.
The girls continue to work on items at the art center.

Bridget: When are you going to be ready to get the baby out of your belly?

Audrey: Right now. Well, not really right now.

Audrey continues layering pieces of green paper onto her white paper.

Bridget pulls at Audrey’s arm: Come on Audrey.

The girls discuss what the name of the baby will be – Jasmin.

Bridget: I’m making a present for her. We’re making a surprise for her.

Bridget to Audrey: It’s a present for you.

Colleen: You and your baby.

Bridget: yea.

Bridget gives the present to Audrey: Open your present. Audrey, here’s a present for your baby.

Bridget asks Audrey several times to open the present, but Audrey ignores her and continues with her collage.

Bridget holds the present in front of Audrey: Open it now.

Findings from this study suggest that another purpose young child have for making art works was to use them as props in their play. Props were objects children used as symbolic representations in their play (Bodrova & Leong, 2004). The teachers’ provided a wide range of props for sociodramatic play, such as dolls and dress-up clothes, blocks and small plastic animals and the children created their own, self-initiated props for play. The children made many props for the spontaneous play around the theme of parties, such as presents, hats and cakes (Figure 31). These props provided a means of participating in play scenarios.
Children’s art works made props for play

Figure 31. Props for play

One day Elizabeth spent the morning making boats. In the early stages of the project, before the topic of trees and things that live in them had been firmly established, the dramatic play area had been set up with a large rocking boat on top of a blue tablecloth that mimicked water. The rocking boat seemed to inspire Elizabeth in boat making. She spent a full morning at the art center creating boats from paper. It took persistence and several attempts before she finally had a boat structure that she was happy with. While it wasn’t clear at first why Elizabeth was so intent on creating boats it soon became apparent. Once Elizabeth had a boat she was satisfied with, she carried it to the dramatic play area and placed it on the blue tablecloth. She climbed into the boat and rocked back and forth. She looked down at the boat she had made as she rocked. She picked up her boat structure and laid it back down on the “water”, rocking some more. Suddenly, she jumped out of the rocking boat, “I know, I’ll tape it!”, and ran to the art table. She pulled off a piece of clear tape and ran back to the dramatic play area. She taped the top of her boat structure onto the side of the rocking boat, rocked the boat back and forth with her hands, watching her boat structure sway back and forth: “Look, it’s floating! Do you want to come and play with my boat?” She climbed back into the rocking boat and rocked, watching the boat she had made move along with her. Elizabeth wanted a boat that she and others could play with.
To connect. Another purpose for working in the visual arts was to make a personal connection with others. Two subsets for making these connections were found: to show affection and to establish a friendship or relationship, (Table 5). When the children liked someone or wanted someone to like them, giving something they made to that person was means of communicating that message. Their visual art works allowed the children to connect to others and that connection provided a sense of belonging.

Table 5

*Connecting to Others through Art Works.*

<table>
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<tr>
<th>Connect</th>
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<td>Establish a friendship or relationship</td>
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Art works were given as a gesture of affection both spontaneously and for special occasions such as birthdays and mother’s day. As the different animals and insects came into the classroom during the project, children showed their affection for these creatures by making and giving art works to them as well. The children understood that these gestures would, in the words of Elizabeth, “make her happy”. One child in this study who made things from the visual art materials to give away was Dominic. Dominic was a five-year-old who was on a child service plan. He displayed angry and aggressive behavior with his peers throughout the year. However, Dominic clearly understood the social gesture of giving as a means of showing affection. On one occasion a child from another classroom was on the playground outside, standing at the window looking in. Dominic noticed her and ran to the art table and drew a picture. He took it over to show another child in the classroom and said “I’m in love with her”, pointing to the girl.
outside. He continued to diligently work at his drawing and told the teacher it was a picture “of a
girl”. When he finished the drawing he took it out to the child who was still standing by the
window. He handed her the picture and returned to the classroom and stood at the window
looking out at her.

On another occasion Dominic drew a nest for the birds and placed it in the garden center.
This was the first drawing he made related to the project. Before this his drawings were mostly
scribbles or “bad guys”. Another time he created a small painting for the chicks that had hatched
in the classroom. He hand picked the paints he wanted to use – metallic – and when finished with
the painting, he carefully placed it on the top of the chick’s cage, painted side down, so that the
chicks could see it (Figure 32). These gestures showed a different side of Dominic – a sensitive
child who clearly understood and used his art work as a gesture of affection. While his behavior
often made Dominic an outsider from the classroom social groups, Dominic was able to create a
sense of belonging with the girl and the chicks.

Dominic made a painting for the chicks

![Figure 32. Giving visual art works as a gesture of affection](image)

Children also made art works and gave them away when they wanted to establish a
friendship or relationship with another child. Relationships in a classroom could be fickle at
times. Children got angry with each other over things said or done; groups of friendships were
formed, transformed and reformed. During this study art works were made and given to others as
a means of establishing or reestablishing a relationship with another child or a group of children.
One child who demonstrated the use of this purpose was Audrey. Audrey was a child who spent a great amount of her day at the art center, often forgoing other activities to concentrate on her art. However, Audrey seemed to want to establish relationships with the core group who were working on the project. She used her art works to help her do this. One day she spent time while the others were at group wrapping materials at the art center. She took these out to the playground and gathered some of the children under the climber. She handed out these wrapped items to the others (Figure 33).

![Audrey made wrapped items to hand out on the playground](image)

**Figure 33. Making art works for the purpose of establishing a relationship**

On another day, Audrey and Bridget had an argument and Bridget told Audrey “You are not invited to my birthday party”. Audrey picked up a round piece of cardboard, drew on it with chalk, putting lines around the edges.

Audrey handed the drawing to Bridget: “Here, a picture”
Bridget: “A sun. It’s a sun. Put it in my cubby”
A few minutes later…
Audrey: “Bridget, can I go to your party?”
Bridget: “Sure, if you dress up like a princess”

Friendships were easily repaired and established with a gesture of giving a piece of art work and so could help fulfill a need to belong.

*To wear.* Another personal purpose the children had to made art works was to create things for personal embellishment. Throughout the study children used art materials to make
items to wear such as necklaces, headbands, bracelets and hats. Elizabeth made a necklace out of a seashell and a bow for her shirt out of ribbon (Figure 34). Audrey made headbands and bracelets out of pipe cleaners. They could easily be twisted together into a circular shape and several pipe cleaners twisted together could create a large enough circle for a headband. The girls in particular used these items as social markers to show belonging to the group

![Image](image.jpg)

Elizabeth makes a bow for her dress

Figure 34: *Children make art works for personal embellishment*

**Generosity**

The children in this classroom created art materials to contribute to the classroom. These acts of generosity provided items that were needed by the classroom community. Two purposes for making art as contributions to the classroom community were to provide an item that was needed in the classroom and to enhance the room through decoration.

*To provide.* In this preschool classroom, children were given unlimited opportunities to create with art materials. Data from this study suggested that one of the reasons for creating with these art materials was to provide an item that was needed in the classroom. Making these items was serious and important work for the children. Throughout the project the children created art works such as an elaborate home for the inchworm, sticks for killing dangerous caterpillars, papers for the class to draw on and a very special machine that would give the children and teachers energy (Figure 35). Patrick and Mark took great pride in their “energy machine”. They
spent several weeks working on it. The machine grew more powerful as the boys added materials to it. People could get energy from the machine by holding their hand over a certain section of it. An excerpt from the transcripts captures their thoughts around the purpose of the energy machine:

Adult: oh wow tell me about that
Patrick: it’s a power thing
Adult: it’s a power thing?
Patrick: it gives us ---- energy
Patrick goes back to work on it, cutting at the piece of tape
Patrick to adult: we're working on something really hard
Patrick: it just gives us more energy
Adult: it’s going to give us more energy. So what is it?
Patrick: it’s a power thing
Patrick: it gives us power to give us more energy
Adult: what kind of power
Patrick: energy power
Adult: how does it work?
Adult: how are we going to use the energy?
Patrick: it gets energy by rain
Adult: when the rain comes then we will have energy?
Patrick: yes

The energy machine in several phases of completion
Figure 35. *Art works that provide a need in the classroom*
Patrick and Mark showed great enthusiasm for their work on the energy machine. It provided a real purpose for them to make something that would provide for the classroom community. It gave energy to the teachers, children who were sad, and to the chicks that hatched in the classroom. Making things that worked was an important purpose in children’s art making, one that was valued and practiced by these preschool children.

To decorate. Another purpose for making art was to enhance the classroom environment. The children in this classroom spent a great deal of time and effort decorating the garden center with flowers, pictures, and other art works they had made. Dominic took care to create flowers for the garden center by taping craft sticks to the wall. A group of children decorated the toy barn. One morning Patrick and Mark were looking at the tent worms that had formed a nest on a tree branch. The tree branch was in a vase of water (Figure 36). The following excerpt from the transcripts that day shows Patrick and Mark engrossed in decorating the vase, making it “beautiful”:

Adult: Do you want to get your research book?
Patrick: yeah, no I don’t want my research book
Patrick: I want to decorate the glass
Patrick starts wrapping the vase in tape. Mark gets green and yellow feathers to tape on
Mark holds a leaf up next.
Patrick: get another decoration
Mark gets a piece of straw and lays it on the vase
Patrick wraps these items with tape
Mark: now this (hands him a piece of bark)
Patrick: around and around and around
Mark: I will do this. He lays a feather on
Patrick: tape over the hole
Mark: I am
Patrick: that’s not very beautiful.

Mark is taping around and around the vase. Patrick brings over colored tape and begins wrapping it around the vase. Both boys wrap the tapes for a while.

HT: what's the tape for

Mark: decorations,

Patrick: yea we're putting decorations on it.

Mark: we need some more decorations

Patrick: yeah we are putting decoration on it

Mark: be careful Patrick

Patrick: it’s all yellow

<table>
<thead>
<tr>
<th>Audrey’s flowers in the garden center</th>
<th>Dominic’s flowers in the garden center</th>
<th>The toy barn has been carefully decorated.</th>
<th>Patrick and Mark decorate the vase</th>
</tr>
</thead>
</table>

Figure 36. *Decoration as a purpose for art making*

These decorations were aesthetic contributions the children made to the classroom. As the examples given suggest, the children took this work seriously. Aesthetic contributions were important for making their environment a more enjoyable place to spend time in.
Discussion

The purpose of this study was to expand the research of the visual artwork children create by investigating three questions. Table 6 shows each question and the findings related to each from this study. The discussion of this research will review and interpret the findings for each question, discuss the implications of the findings for the classroom and the study’s limitations and implications for further research.

Table 6
*Summary of Findings and Discussion*

<table>
<thead>
<tr>
<th>1. What type of art work do children make?</th>
<th>Two Dimensional</th>
<th>Observational drawings</th>
<th>Integration of art types</th>
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<tbody>
<tr>
<td></td>
<td>Non-</td>
<td>Beginning</td>
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<td></td>
<td>Detailed</td>
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<td>Cut paper</td>
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<td>Unattached</td>
<td>Attached</td>
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<td>Three Dimensional</td>
<td>Cylinder</td>
<td>Tubes</td>
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<td>Cones</td>
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<td>Wrapped</td>
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<td>Collage</td>
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<td>Attached</td>
<td>Organized</td>
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<tr>
<td>2. Is there a pattern of progression in children’s art?</td>
<td>Age progression</td>
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<td></td>
<td>Importance of experience</td>
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<td>Repertoire of art types</td>
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<tr>
<td>3. What was the purpose of children’s work in the visual arts?</td>
<td>Mastery</td>
<td>Explore</td>
<td>Record</td>
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<td>Play</td>
<td>Enter Play</td>
<td>Engage others in play</td>
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<td>Props for play</td>
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<td></td>
<td>Generosity</td>
<td>Provide</td>
<td>Decorate</td>
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**Types of Art**

Findings from this study suggest a new, more detailed way of looking at the types of art young children make (Table 7). Authors have previously written about young children’s art work in terms of how to use art materials in the classroom (for examples see Kolbe, 2001; Epstein & Trimis, 2002). Although a great deal of research has been conducted on children’s drawings, little other research has focused on the other types of art young children create. The types of art found in this study suggest a more in depth view of children’s art work, especially the early ways children work within each of these domains. This more detailed view of children’s artwork offers educators a thoughtful way of viewing and understanding children’s art.

Table 7

*Types of art children create*

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<tr>
<th>What type of art work do children make?</th>
<th>Two Dimensional</th>
<th>Three Dimensional</th>
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<td>Observational drawings</td>
<td>Non-representational</td>
<td>Integration of art types</td>
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...
Three Dimensional Art Works

Observational drawing. Results from this study showed several levels of observational drawing that children used; non-representational, beginning and detailed (Table 6). Traditional literature on children’s drawing focused on stage development from scribbling to more detailed representational drawing. (Gardner, 1980; Kellogg, 1969; Kelly, 2004; Lowenfeld and Brittain, 1987). These detailed representational drawings have been highly valued in western society (Anning & King, 2004). However, a close look at the subsets of observational drawing from this study indicated that the children created beginning observational drawings that were important representations of their feelings and understandings. Joy, who had no language, drew the caterpillars. These drawings, although just two simple lines on a paper, indicated her understanding of the topic of study. For Dominic, the emotional issues he struggled with were manifested in his drawings. Dominic was on a child service plan due to disruptive classroom behaviors. He showed a great interest in the project; however his drawings were seldom related to the project work. He spent several long periods of time with a graduate assistant in the classroom discussing plants and insects, but when the class went to the Civic Garden Center to draw the trees, he drew pictures of people with their faces blackened out—bad people—as he named them. Dominic chose to create more emotional rather than observational drawings. Although the drawings Joy and Dominic made were less complex than those of some of the other children their age, these drawings gave the adults important information of their feelings and understandings.

Children’s drawings have been collected and analyzed quite extensively (Darras and Kindler, 1998; Gardner, 1980; Kellogg, 1969; Kelly, 2004; Lowenfeld and Brittain, 1987; Wolf and Perry, 1988). Lowenfeld and Brittain (1987) stated that scribbled drawings begin around age
two and at this age are not attempts at representations. These authors explain that around the age of three, scribbles may have more symbolic meaning to children and they may name the scribbled drawing, but the scribble comes first and the naming occurs when the scribbled drawing relates to a form in the child’s visual environment (Lowenfeld and Brittain, 1987). The children in this study intentionally represented an object in their environment using scribbled-like marks when they were well past the phase identified as scribbling. Some scribbled drawings the children made were methods of documenting an idea, understanding or feeling.

The data from this study suggest that the children did not leave behind the art of scribbling, but that it became part of a repertoire of types of drawings they continued to use. Patrick and others used scribbled lines as a form of drawing throughout the project. Eisner (2002) identifies the expressive form as one of the three modes of treatment in the visual arts and it seemed that scribbling was an expressive form that older children used. Scribble marks were more than marks representing random movement similar to a two-year-olds arm and hand. It was a form of art used by some of the older children to symbolize their feelings and their world.

Cut Paper. The results from this study suggest three categories of paper cutting used by young children (Table 6). Paper is an item that is typically plentiful and readily available in the preschool classroom. Paper has color, weight, texture, flexibility and absorbency. It can be cut, bent, folded and crumbled (Epstein & Trimis, 2002; Trimis, 1997). Paper allows children to represent their ideas in tangible ways. Learning to cut took practice and the children were diligent about this practice. Kolbe (2001) stated that children enjoy snipping and cutting and that they gradually begin to organize and arrange their cut pieces of paper (p.77). The results from this study support this statement. Snipping and arranging papers were activities the children readily engaged in. Swann’s (2008) study with young children offered some connection to the
findings from this study as well. Swann provided a set of papers for preschool children to explore. Although Swann did not provide other art materials besides paper, the findings from her study showed some similarities to the finding from this study –primarily that children combined paper to create new objects. The findings from this study intersect with Swann’s findings and will be discussed in relation to each of the cut paper categories identified in this study.

The three subsets of cut paper – snipping, cut: unattached and cut: attached, offered a new way of viewing how the children expressed their thoughts, feelings and ideas through the medium of paper. Snipping was not only the act of practicing the skill of cutting but became an integral part of art work. Although Swann (2008) did not provide scissors to the children in her study of paper, snipping with scissors may have been parallel to Swann’s (2008) finding of fragmenting, or tearing or shredding paper into smaller pieces. Altering paper in these ways seemed to be a common activity of the children in this study and Swann’s (2008)

As the children began to organize their cut papers to make representations, it was not always important that the papers be attached. The children in Swann’s (2008) study happily participated in their experience with paper and created objects by combining pieces of paper even though there was no adhesive to attach them. In fact, unattached cut papers seemed to offer a more fluid way of using materials. They could be rearranged at will as ideas change. Cut papers that were used to represent a bird nest could be used over again to create a bird or a flower.

Cut papers that were attached were a less fluid, more decisive representation. Two papers that had been stapled together to represent a bird would remain that way and indicated a commitment to, and understanding of, the permanency of the representation. Swann (2008) did not provide any type of adhesive during the children’s exploration of papers, so there were no art
works made by attaching papers. However, she does suggest that children will make progressively more complex relationships in their art making with paper. The attachment of cut papers in this study may suggest another way children create complex relationships with paper.

*Three Dimensional*

*Cylinders.* Throughout this study children created cylinder shaped objects with paper (Table 6). Trimis (1997) stated that paper invites three dimensional expression and findings from this study seemed to support Trimis’s statement. Children as young as three years of age worked at making three dimensional structures with paper, most often in the form of a tube. With experience this understanding of three dimensional forms transitioned to creating wrapped items and cone structures. In her study with paper, Swann (2008) also found that children made wrapped objects. However, Swan did not make an adhesive available to the children in her study and cones needed tape to maintain their form. The findings from this study expand the understandings of how young children use paper to create three dimensional art works.

Findings from this study suggested that young children have an understanding of three dimensionality and how to create three dimensional objects with the materials available. Golomb and McCormick’s (1995) study of preschool children and their use of clay found that even at a very young age, children displayed an understanding of three-dimensionality and used that understanding to form three dimensional clay figures. The findings from this study support Golomb and McCormick’s (1995) findings and suggest that children’s understanding of three-dimensionality is true for three dimensional paper works also. Young children naturally worked to create three dimensional objects as ways to explore and express their thoughts and ideas. Children’s understanding of three-dimensionality most likely came from experience and interactions with three dimensional objects in their environments. Children expressed themselves
competently through three dimensional representations like those found in their environment, such as Elizabeth’s boat and the party hats (Eisner, 2002).

**Collage.** The preschool classroom art center contained a variety of materials for the young children to arrange and order. These items lent themselves to three dimensional constructions, in the form of collage. Findings from this study suggested that when given opportunities to explore these materials children created collages at three different levels. Collage works that were unattached, attached, and organized formed a foundational understanding of how children used the materials provided for them in the classroom. These three levels gave more detailed information on how children use collage.

Stevenson and Duncan (1998) looked at collage to study the emergence of symbolic representation. They identified two broad categories of children’s collage work: presentations and symbolizations. Two of the subsets found in this study, attached and organized collage are similar to Stevenson and Duncan’s (1998) first two presentation subsets: random presentations and patterned presentations. As in Stevenson and Duncan’s study (1998), attached collages in this study did not show an intentional arrangement of the materials while organized collages showed thoughtful placement of each item on the base. The attached collages in this study were very spontaneous and not much attention was given to the aesthetics of the arrangements, while organized collages showed more monitoring of the arrangement of materials and involved longer periods of concentration. This supports conclusions also from the Stevenson and Duncan (1998) study.

While Stevenson and Duncan (1998) separated random presentations (attached collage) from symbolizations, findings from this study indicated that a child’s attached and organized collage often were a symbol or representation. For example, Tiana identified her attached collage...
as a princess dress (Figure 18). In addition, the children’s work in this study indicated another
category of collage— that of unattached collage. Unattached collage art works made in this study
were not named by the children. However, some were random presentations, such as Joy’s
collages while others were more thoughtful pattern presentations such as Rose’s carefully
constructed art work (Figure 17).

Findings from this study led to two thought-provoking conclusions. First, while
traditionally collage has been identified as the pasting of materials onto paper, (Brommer 1994)
it was not so narrowly applied by these young children. This finding was important in
understanding children’s intentions for their collage. Some children in this study valued the
process of collage, the arrangement of the materials, over having a permanent piece of art work.
Second, as Stevenson and Duncan (1998) point out and this current study also identified, there
was not a clear cut, linear progression from simple to more complex forms of collage. Children
moved between simple and more complex levels, some as symbolizations and some not, adding
to, but not taking away from the categories of collage they made. Discovering how and why the
children use the various levels of types of art offers a deeper understanding of how children use
the visual arts as a language to express themselves.

Integration of Multiple Domains

In addition to the four individual domains of art works, children created pieces that
contained combinations of these domains. This integration of the domains of art work showed an
enormous amount of detail and differentiation. Items created by the children that integrated
multiple domains were complex and were usually a representation of something specific, such as
a book, a boat, a flower or a log home. Golomb and McCormick (1995) found that children
showed more differentiation as they developed. Older children gave their clay structure more
details than younger children. Overall, this was generally found to be true in the children’s art works from this study, although experience played an important role, as will be discussed in the next section. Children who were older and/or more experienced tended to create art works which integrated the types of art. Elizabeth worked to create a boat (Figure 20) which had a drawing of a passenger, oars, a window, and filled the boat with cargo. Children spent long periods of time and concentration to create these artworks. These integrated artworks showed complexity, reflecting a deep understanding of how to use art materials as a language of expression. Supporting children to reach this level of complexity is important for helping them develop this form of communication.

*Pattern of Progression in Children’s Art Works*

In this study, findings showed that while overall there seemed to be a progressive, developmental nature to children’s art, experience played an important role in that development. Findings also showed that children did not drop older, simpler ways of making art works as they progressed in their art making. Arnheim (1974) and others (Darras & Kindler; 1998; Stevenson & Duncan, 1998; Wolf & Perry, 1988) have questioned the assumption that children move exclusively through stages of drawing development and suggested that educators also look at the repertoire of types of drawing children develop. This perspective is more complex. Children develop a variety of ways to approach their art making. The findings from this study suggested children’s development in other types of visual art such as cylinders, cut paper and collage also includes a repertoire of these types of art works. While children’s artwork does become more complex as they develop, this development is also affected by experience and is best viewed as progressively building a repertoire of ways to approach their art.

Table 8
**Progression of children’s art work**

<table>
<thead>
<tr>
<th>Is there a pattern of progression in children’s art?</th>
<th>Age progression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Importance of experience</td>
</tr>
<tr>
<td></td>
<td>Repertoire of art types</td>
</tr>
</tbody>
</table>

**Age Progressive Pattern to Children’s Art Work**

Findings from this study indicated that overall there was a progression from beginning types of art work to more complex types as children developed. As children matured, their art work became more detailed and complex. The oldest children in the classroom generally created more complex pieces of art. Three-year-olds and children on IEP or child service plans created art works more often in the beginning range. It seemed that the stage models such as Lowenfeld & Brittian (1987) reported on drawing and Golomb & McCormick (1995) reported on sculpture, the children in this study progressed and differentiate in all types of art as they grew and develop.

**Experience Plays a Role in a Child’s Level of Art Making**

Findings in this study showed that although development did play a role in the type or level of art a child made, experience with the ideas around the topic and practice with materials was as important, if not more important. These experiences gave the children a better understanding of the topic and therefore they were able to create more complex forms of representations. Practice and exploration, as well as observation of their environment were all factors that contributed to the developmental progression of the children’s artworks (Gardner, 1980).

It has long been understood that an artist must have time to develop the skills and techniques used to make more complex pieces of art (Lowenfeld and Brittian, 1987). Experts in
the visual arts such as Lowenfeld (1987), Gardner (1980) and Eisner (2002, 1972) have discussed the influence of experience in children’s art and the findings from this study supported the importance of experience. The analysis of the children’s art work in this classroom suggested that children who returned over and over again to the same medium and art type, gained experience and advanced their skills in that art type. Like professional artists, the children developed themes and ‘big ideas’ around certain types of art (Barrett, 2003, pg 12). This study suggested that the advanced development of a type of art work was related to the child’s body of experience. Influences such as an enriched environment can have an effect on children’s development in the arts.

During this study children had opportunities to experience the topic of trees and things that live in trees in many different ways. They read about the topics, observed the trees, birds and insects, they felt the flowers and pulled them apart. These experiences helped them to form their ideas and understandings of trees and things that live in them. The children’s art work became more complex, as their understanding of the topics grew. A tree branch was drawn with more detail once the children had time to look at it, touch it and talk about it. The schools in Reggio Emilia have exemplified how experience in project work, when paired with the visual arts, leads to more complex levels of expression (Katz & Chard, 2000). Lowenfeld and Brittain (1982) stressed the importance of experience and using the senses. It is in the process that learning occurs. The findings from this study support the importance of experience and the importance of studying children’s art works to discover their understanding of the topics and then develop methods to scaffold their learning. The visual arts provide ways for teachers to ‘listen’ to children’s understandings (Vecchi, 1998).
Children used a variety of the subsets of visual artworks throughout this study. They were very competent in choosing the visual art method they needed at the time. The children accessed an array of the types and levels of visual art works in the process of working to understand the world around them. These findings indicated a move from the traditional approach of viewing children’s artwork progressing from simple to complex and non-representational to representational, to an understanding of the repertoire of approaches children used. Children acquired a repertoire of types of art and chose between them based on their purpose at the moment. This finding supported Arnheim’s (1972) view that children do not drop earlier methods of representation even though they may have developed more complex ways of creating. This repertoire view of the development of visual languages was not only present in drawings, as found by Wolf and Perry (1988) and Darras and Kindler’s (1998) but in other types of artworks the children created such as constructions with two and three dimensional art works.

This repertoire view is a more comprehensive view of children’s visual artwork. While children generally developed more complex ways of creating art works they were in actuality adding to a collection of artistic responses rather than just becoming more developmentally capable. Children were not simply moving in a lineal progression of development, but rather acquiring new techniques and skills, as well as utilizing previous ways of creating art. New ways of making art were added to, and thus expanded, the repertoire of approaches the children used (Arnheim, 1974; Darras & Kindler; 1998; Stevenson & Duncan, 1998; Wolf & Perry, 1988).

Purpose of Children’s Use of Art Materials

Findings on the purposes of the children’s use of visual art materials suggest that the visual arts supported their developmental needs. Erikson (1950), Maslow (1943), Coopersmith
(1967) and Bendtro and Brokenleg (2001) have all contributed perspectives on children’s
development needs. Together they recognized several areas of developmental need which
Bendtro and Brokenleg (2001) have identified as the need for mastery, the need to belong, the
need for generosity, and the need for independence.

The children’s use of the visual arts allowed them to establish a sense of belonging in
their peer culture (Coopersmith, 1967; Elgas, 2003; Maslow, 1943). The visual arts supported the
development of competence with art materials and in the children’s ability to use those materials
to record their thoughts, feelings and ideas (Coopersmith, 1967). Their expression in the arts led
to generosity as they made contributions to the classroom. The visual arts provided a means to
gain respect from others, and self-respect (Coopersmith, 1967; Maslow, 1943). Children realized
their potential and efficacy through the visual arts.

The need for independence was infused throughout the children’s work in the visual arts
(Table 9). The children’s active participation in meeting the other three developmental needs
provided independence. This independence gave children a voice in their own development. The
visual arts provide children independence in using the arts as a language for learning and
expression. Open access to materials provided independence in using this language and open
ended materials provided a means for children to be independent problem-solvers. The need for
independence was satisfied throughout the visual arts.
Table 9

*Purpose of children’s work in the visual arts*

<table>
<thead>
<tr>
<th>Category</th>
<th>Purpose</th>
</tr>
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<tbody>
<tr>
<td>Mastery</td>
<td>Explore</td>
</tr>
<tr>
<td></td>
<td>Record</td>
</tr>
<tr>
<td>Belonging</td>
<td>Enter play</td>
</tr>
<tr>
<td></td>
<td>Engage others in play</td>
</tr>
<tr>
<td></td>
<td>Prop for play</td>
</tr>
<tr>
<td>Connect</td>
<td>Show affection</td>
</tr>
<tr>
<td></td>
<td>Establish a</td>
</tr>
<tr>
<td>Wear</td>
<td></td>
</tr>
<tr>
<td>Generosity</td>
<td>Provide</td>
</tr>
<tr>
<td></td>
<td>Decorate</td>
</tr>
</tbody>
</table>

The philosophy of child-centered pedagogy in this classroom gave the children an active voice in the educational process. The children’s interests of the trees and things that live in them led curriculum development. The children were encouraged to develop their natural curiosity in inquiries around the topic. Independence in the visual arts allowed them to pursue their inquiries and meet their developmental needs. The visual arts empowered the children to use the materials as a language for learning, not only of concepts, but also how to live in the social world of the classroom.

These young children, who had limited skills in reading and writing, used the visual arts as a language of expression. Their works in the arts were recognized as valuable forms of
expression for their thoughts, feelings and ideas. Teachers showed that they valued children’s voice in the arts when they said, “Tell me about your work” and “Do you want to hang your work up in the classroom?” Comment such as these indicated the importance of the children’s artwork. As a result of this support the children’s voice and independence were expressed strongly in the arts.

The visual arts were an important area of the preschool curriculum where the children were given the independence to express themselves. There were no predetermined art activities in the classroom. Children were provided open access to materials at the art center every day. These visual art materials were open-ended. They could be used in any number of ways. The children decided what to make at the art center, how to make their art and what to do with their artwork. This allowed the children great independence in expression through the arts.

However, there were constraints within this freedom not imposed by the teachers but inherent in the different materials. The affordance of the materials presented different capacities for representing a concept. Each medium presented constraints and provoked the children to problem-solve how to express themselves within those constraints (Forman, 1994). The visual arts were strong supports for developing independent problem-solvers.

Overall, findings on the purposes of children’s artwork showed how important the visual arts were to meeting development needs. Bridget indicated the importance of this when she told the teacher one day that her two-year-old sister “doesn’t really know how to do anything. She doesn’t know how to make things”. With the sense of independence comes confidence and resourcefulness. Learning is exciting and empowering when you are given freedom of choice and self-determination. The arts seemed to provide this for young children who have so little independence in many areas of their lives.
The examination of the purposes for children’s artwork in this study provided insight into why children persistently engage in the visual arts. The findings from this study showed that the arts provided opportunities for the children to meet their developmental needs. While the need for independence was supported in all areas of the arts, the needs for mastery, belonging and generosity were met in more specific ways. These will be discussed individually.

**Mastery**

*To explore.* Children’s purpose for making art works was often to explore the medium that were available. The children had to learn about the affordances of the materials and how to manipulate them before they could use them to bring their ideas to fruition (Forman, 1994; Gardner, 1980; Gibson, 1988 Hutt, et al., 1989). Piaget (1953) designated this as physical knowledge – the feedback a child receives from their actions on an object. Piaget (1953) noted that practice play continues through the preoperational stage, encompassing the preschool years. This was evident in the children’s play with materials as well.

Exploration was particularly noticed when new materials were introduced to the classroom. The children spent time getting to know the materials in a purely expressive and sensory way, without any conscious attempt to represent a physical entity. Touching, manipulating, playing with design, feeling the texture, seeing how the materials responded and even what they sounded like when they were dropped on the paper were a part of this explorative process. When glitter glue, ribbon and beads were introduced at the art area, the children spent extended periods of time over several days pouring the glue over paper, spreading it around and attaching beads and ribbon and tissue paper. Prior research on play discussed that exploration is elicited when a novel item is introduced to children (Hughes, 1978; Hutt, 1989). This was found to be true in this study as well. While the teachers had anticipated the children would use the
materials to make representations for the garden center in the classroom, many times the children were purely interested in exploring the materials. The active nature of this exploration was “growth in itself” (Lowenfeld, 1987, p. 47).

When given time to explore, children were able to gain mastery over the material. They learned how the materials would react and respond. This gave them the knowledge needed to later use the materials in more controlled ways. Research on play indicates that children explore materials and then they play with them (Hutt, 1989). Children explore objects before they begin to build relationships between them and this appeared to be true in the ‘play’ with art materials as well. When exploring with paint on the bark, several of the five-year-old girls then asked for paper to paint on. They first explored mixing the paints to create other colors and then began to make symbols such as hearts and flowers. This also supports Swann’s (2009) findings that the older children explored new materials but also quickly began to create relationships with the materials and work toward establishing a symbolic representation.

To record. Children in this study self-initiated many art works that served to record their thoughts, ideas, feelings and understandings inside and outside the classroom. Observational drawings were a common form of recording whose purpose was to decode what they had seen and understood about the object. These observational drawings occurred most frequently during the investigative phase of the project, when children were working to understand the trees and things that live in them. They drew the caterpillars, the flowers on the tree limbs, the ants on the tree and the butterflies. Arnheim (2006) suggested that art provides children a way to understand a confusing, disorganized world and findings from this study supports that finding. The children spontaneously drew pictures of the new items that were being introduced to the classroom. They seemed to use drawing as a way to master their understanding of what they had seen, to
understand it better, and to record the details they had noticed. Recording supported the children’s developmental need for mastery and competence (Bendtro & Brokenleg, 2001). They were able to see and gain a deeper conceptual understanding through the arts.

During the project work in this study children self-initiated drawings as a way of recording their ideas about an object. Colleen drew a picture of the caterpillar on the tree branch. The caterpillar was oversized, suggesting its importance. A butterfly was drawn on the page next to it recording her understanding that the caterpillar and butterfly were linked in nature. Joy recorded the circular patterns on the butterfly. She drew a butterfly as two large circles opposite each other on the page, and vertical lines in between the circles. Recording allowed the children to stabilize their thoughts, ideas, feelings and understandings in a material. Like writing, the arts provided a means of encoding. It was form of communication that made the children’s thinking public (Eisner, 2002). Data from this study suggests that children used the arts as a way to make their thinking visible. The young children did not have or only had emerging writing skills. However, using the arts for recording gave them the mastery to encode their thoughts and ideas and what they knew.

Belonging

To play. Children used their artwork for play in several ways throughout this study. They used artwork to enter play, to engage others in play and as props for their play. Play was dynamic and pleasurable for these young children. It was the means by which they learned about their social and physical world (Rogers & Sawyers, 1988). In this study children’s artwork was an integral feature of their play, helping to fulfill their need for belonging to the peer group.

Children used items they made to establish membership in the group. When they wanted to enter in a play scenario, one way to do this was through offering an object, which could be of
their own making. Earlier studies indicated that during some instances of socio-dramatic play objects may be used for gate-keeping purposes-- if you possess an object, you will be allowed to enter the play (Elgas, 2003). Findings from this study support and extend this notion of gate-keeping. Children used objects to get ‘through the gate’ and enter play. In this study objects were often items of their own making. This gave the children power over their involvement in social group play and their sense of belonging. They could create an object to contribute to play and use it to enter play. Having the opportunity to create that object made access to the peer group more open and available.

Items the children made with materials from the art center were also used to engage others in play. Drawings or objects created by one child were used to entice another child to join in the play scenario. Previous research on peer culture suggested that preschoolers negotiate roles during play and use objects to aid in social interactions (Elgas, 2003; Rogers & Sawyers, 1988; Ross and Goldman, 1979). Using objects to engage others in play gave the children opportunities to practice their social negotiating skills (Fein, 1986). Findings from this study support this research and extend it as well. Children created objects with art materials and then used them to engage others in social interaction. This offered more flexibility when engaging in social play. If an object needed was not available to engage others to play, it could be created from materials at the art center. Thus, the visual arts provided ways for children to establish a sense of belonging.

Children were prolific in creating props for play during this study, especially when preparing for the party for the birds and butterflies. All of the children in the classroom contributed to these props and this seemed to be the easiest purpose of art making for all children to understand. Even the youngest children got involved in making props in the form of presents, nests, costumes for the birds and decorations. Bhroin’s research (2007) suggested that children’s
art is often related to their real lives. They draw pictures that narrate their lives and these drawing become so real to them that they interact with them through play (Bhroin, 2007). This study suggested that children were also inclined to create objects through the visual arts real enough to them that they interacted with them through play. Copple, Cocking and Matthews (1984) found that younger children show a tendency toward “literalness” (p.121) when choosing an object to represent an item in play. The children’s creation of objects for play with art materials in this study allowed them to closely represent the item they wanted for play. For example, a wrapped object closely resembled an actual present. The opportunity to use the arts in creating props for play ensured that play could continue. If teachers had not made objects available that were needed for a play scenario, they could be created with the open-ended materials provided in the classroom. The children who made these objects met their need to belong.

To connect. Children often chose to connect with others through their artwork during this study. They presented others with art works as a gesture of affection—because they liked someone or something (such as the birds or butterflies). The piece of art represented an extension of the child, it was as if a part of them from inside became a tangible object. In order to share a piece of themselves, they shared the art work. Creating art works to give to others gave children a voice in their emotional lives. These art works became tangible tokens of affection and allowed the children to establish a sense of belonging to and with others (Coopersmith, 1967; Elgas, 2003; Maslow, 1943). While Dominic struggled with many relationships in the classroom, he used artwork to demonstrate affection and establish a sense of belonging when he made the chicks a picture and when he drew a picture for the girl standing outside the window of the classroom. The visual arts provided a means of meeting this need to belong, something he struggled to accomplish with his peers.
Art works were also presented to other children to establish a friendship or relationship. The artwork represented a tangible object to give away. That giving resulted in friendship at best or a temporary relationship at least. The visual arts provided a voice in the complexity of establishing social relationships in the classroom. There was a common understanding of ‘here I will give you this and now we can be friends’. This study suggested that children use their art works as a means of making friends and building a sense of belonging to a social group (Bendtro, Brokenleg & VanBockern, 1990). Audrey, who spent a lot of time at the art center, became adept at using her art to establish new relationships and repair broken ones. Audrey’s art work enhanced her sense of belonging and supported her social/emotional development (Coopersmith, 1967; Elgas, 2003; Maslow, 1943). The visual arts provide a means for Audrey to independently construct her sense of acceptance in the peer group.

To wear. The children in this classroom created items with visual art materials to embellish their personal appearance. These were items that could be worn by themselves and others. There were an abundance of necklaces, bracelets, headbands, etc. made by the girls during this study. These seemed to be similar to the social markers found in Elgas’s (2003) study. While social markers were typically commercially purchased objects in the classroom the children in this study used their independence in the visual arts to create their social markers. These items to wear served to show solidarity with the girl peer group (Elgas, 2003). The opportunities to create items they or others could wear contributed to their sense belonging to this peer group.

Generosity

To provide. Children made visual art works that provided opportunities to make contribution to the entire class. They made homes for the inchworm and caterpillars. They
created an energy machine. The creation of these items allowed the children to make important contributions to the classroom. These were items that were needed and used by all members of the classroom. Becoming active participants in creating items that could be used by others in the classroom gave them a sense of generosity (Bendtro, Brokenleg & VanBockern, 1990). This was most apparent when Patrick and Mark made the energy machine. The energy machine was clearly an important device that could be used to provide energy to the children and adults. Not only did the energy machine give Patrick and Mark a sense of competence in their abilities to make a contribution to the classroom, it also made school interesting and exciting. The independence Patrick discovered in the visual arts seemed to fulfill a need he had for autonomy in his life. The energy machine gave him a kind of ‘strength’ he desired.

There is a dearth of research on how children use the visual arts to make items that are useful and make a practical contribution to the classroom. However, there are many narrative accounts of this type of children’s work. Tarini and White describe how the children in their classroom decide to make an office. Children made a set of wheels for a classroom robot in Piazza’s (2001) description of work initiated by a small group of children. Children in this study were also clearly interested in being contributors to their classroom by providing items that were useful and served a real function for the classroom. The opportunity to provide items needed for the classroom community seemed to meet the children’s desire to make significant contributions to their world.

*To decorate.* Children used art materials to decorate the classroom and items in the classroom. They seemed to have a desire to contribute to the classroom by making things beautiful. Kolbe (2005) suggests that when given choices in art making, children show an interest for order, pattern and design. They like to embellish and decorate things in their world
The data from this research support Kolbe’s (2005) statements. Kolbe (2001) suggests the visual arts are a form of compositional or aesthetic research wherein children work to make the things they see visually pleasing. This seemed to be true in this study. The children were given the independence to change the physical environment of the classroom during this project. As they took over creating the garden center and preparing the party for the birds and butterflies more decorating took place. This gave the children a voice in creating the kind of environment that they wanted and the findings suggest that they wanted to make the space beautiful.

**Implications for the Classroom**

*Time to create and time to observe.* Findings from this study suggest that extended time is needed for children to create in the visual arts and that extended periods are needed by teachers to understand how and why children create visual art works. Children need time and freedom to use the visual arts. The visual arts are a natural symbol system for young children who have not yet fully developed language and literacy. Teachers need to take the time to observe children. Extended periods of observation will help teachers understand the repertoire of art children use and their purposes for creating with visual art materials.

While prior research has shown that the arts contribute to academic success, this study suggests that the visual arts make important contributions to children’s social-emotional development. Therefore it is critical that the visual arts should be an integral part of every curriculum topic. While art centers are available for children in most preschool classrooms, they are not in primary grades. Once children go to elementary school the arts are often relegated to a separate room, the art room, which the children visit once or twice a week. Not only are the visual art materials not readily available to children to support their learning, but art curriculum
in primary grades is usually directed by the teacher. Children are not given the independence in the arts that they are given during the preschool years. Without that independence, children will not have the opportunities to meet the needs for mastery, belonging, and generosity that the visual arts can provide. While constraints to meet appointed curriculum goals fall to art educators, perhaps these goals can be met by more child-centered means. If there are art centers in every classroom, the art educator could be available to work with children in there as well as the art room. A model of this type of studio work has been provided by the schools in Reggio Emilia that some American public schools have begun to emulate.

Teachers are busy and pulled in many directions. They often don’t recognize how and why children create what they do. Children’s visual art work is really quite complex and a good deal of time and observation of each individual child and his or her work is needed to completely understand how and why children create art works. Informed observation of children as they create will help educators understand children and their artwork and respond to it appropriately. Teachers can learn to listen to children through their art work (Rinaldi, 1998). Teachers can look for the purposes of children’s work with visual art materials. If a child is creating a non-representational observational drawing the teacher can recognize the emotion the child is exhibiting in his or her work and the significance of that child’s form of representation of the subject.

Educators are responsible for providing opportunities for growth in all areas of development. Careful observations, especially of children who are struggling in some areas of development, will inform teachers of developmental milestones and developmental needs. This study shows how the visual arts can provide access to understanding children’s individual development and where they might need support or encouragement. An educator can support a
child with a language delay, who spends time creating representational drawings through conversation about those drawings.

Observations of children’s art works can inform teachers on what to plan next or how to adjust the focus of the topic (Vecchi, 1998). The information gathered through observation of children’s work with visual art materials can help educators develop curriculum and scaffold learning. A teacher can sit with children who have made beginning observational drawings of a caterpillar and support them through the experience of looking at the caterpillar, forming a conversation around a description of the caterpillar, and guiding them to look more closely at the colors on the insect and the interesting parts of the body.

Recognition of beginning art works. All children, including the youngest child and children with emotional and cognitive delays use the visual arts for self-expression and communication. As educators it is imperative to understand the visual arts approach children choose use. Focusing too much on the linear progression of children’s work may cause educators to miss the developmental significance of the type of art a child makes at a particular time. It is important to recognize all levels of artwork children use, not just those that are representational.

The art domains enable educators to recognize the significance of early forms of types of arts, such as unattached collage, beginning observational drawings and unattached cut papers. The subsets of types of art allow teachers to see smaller changes which may go unrecognized in a busy classroom. Children who are using attached collage to make representations, such as Tiana’s princess dress, may be at the beginning level of understanding how to document their ideas or objects from their environment. These smaller changes are likely to occur in children with special needs who need longer periods of time to develop skills in art. They indicate that children are engaged in serious art work and are beginning to use the materials to express
themselves. Recognition of beginning domains can ensure teachers access to opportunities to
guide and promote a child’s development.

Recognizing the types of art is especially important for teachers of children with limited
oral language skills as these children must rely more on the visual arts as a language. The
domains of visual arts provide opportunities to listen to these children and encourage
communication via the language of the visual arts (Hertzog, 2001). Although Joy had very
limited verbal skills, she was able to communicate her ideas and interest in the topic of the
project through the arts. Observation of her art works gave teachers an added understanding of
Joy’s development and how to support her learning needs.

Provision of art materials. Since the implementation of No Child Left Behind, there has
been an emphasis on testing children in academic areas. Under threats of loosing funding as well
as standing in the state’s ‘report cards’, schools and teachers are choosing to marginalize the arts
and focus on academics (Chapman, 2004). At the same time experts in the field of arts and
education recognize the arts as an important means of expression and communication for
children in today’s multimedia society (Arnheim, 1974; Eisner, 2002; Gardner, 1985; Hertzog,
2001; Jensen, 2001; Malaguzzi, 1998a). Experience with art materials is a key component to
developing children’s full capability of expressing themselves in a multi-modal literal society
(Eisner, 2002). Educators, artists, parents and advocates for children must lobby for the secure
funding of the arts and art materials. Visual art materials are as crucial a tool in the classroom as
pencil, paper and books.

In child centered classrooms, especially those that do project work, young children are
given a voice in certain aspects of their education. They decide what they are interested in
learning more about and the teacher’s support that interest. As this research shows, the
availability of an abundance of art materials is needed in every classroom to support the children’s developmental needs. The visual arts supported the children’s need for mastery, the need to belong, the need for generosity and the need for independence. With a teacher’s commitment to what the arts have to offer in supporting development, it would be fairly simple to stock an art center with a collection of materials. Parents could help contribute to the art center with recyclables and donations. Teachers can apply for small grants that are often available for classroom projects and supplies. The visual art materials can be used in all areas of curriculum to support learning, and can be available for spontaneous work that serve one of the children’s many purposes for the visual arts.

Limitations and Implications for Research.

Research regarding the types of art works children make will require replication and further systematic study to substantiate the findings of the domains and subsets. The small sample size in this study leaves questions as to whether the appearances of these domains were a result of this particular group of children, the materials that were available in this classroom, or if they are universal domains exhibited by all young children. In this study, painting and clay work were not used extensively and so additional domains and subsets for these and other types of art remain to be discovered. A significant finding of this research was the early forms of art works children create. Future studies of children with special needs such as cognitive disabilities will be needed to substantiate the finding of this study and understand how social influences may affect their art work. Gaining a deeper understanding of the types of art works children create and the subsets within each domain should prove as valuable as the detailed analysis of children’s drawings has provided. Future research in other preschool classrooms will add to these research findings.
A growing body of research, including this study, suggests that the linear, progressive view of children’s development in art is limiting. While this study suggests that children add to, but do not abandon, the different subsets of each domain of art, this concept of repertoire will benefit from replications of this ethnographic study of young children. The role of experience must also be studied to understand its contribution to the progression and use of different domains and subsets of art. Freedman (1997) suggests that when the emergence of language occurs and children begin a social life in their school and community, their art becomes increasingly influenced by culture and society. Future studies will be needed to understand the influence of adults and peers have within children’s experience in the visual arts and the type of art children make. A future, yearlong ethnographic study will give more detailed information on the contribution experience makes and form a more comprehensive understanding of how children develop and use a the repertoire of types of art.

The findings from this study establish a beginning understanding of why children create art works. Future studies on each of these purposes will be necessary to gain a fuller understanding. This ethnographic study took place over two month’s time while the children engaged in project work. Observing children for an entire school year will give different perspectives or find additional purposes for why children create with the visual arts. The capacity of the visual arts to give children independence and allow them to meet developmental needs has been suggested in this study. Future studies will substantiate this and expand understanding of the contributions the visual arts make to the need for mastery, belonging, generosity and independence.
Conclusion

This ten week, ethnographic study was undertaken to answer three questions: What type of visual art works do young children make? Is there a progression in their visual art works? and What are the purposes for children’s use of visual art materials? The findings showed that children made two dimensional and three dimensional art works. These type of art works included observational drawings, cut paper, collage and cylinders. There were three subsets to each of these domains. In addition it was found that children also integrate these domains to make complex pieces of art. The findings also indicated that there was a developmental progression in children’s art work. They moved from simple to more complex work as they grew. However, the findings also suggested that experience plays an important role in the level of visual art work children make. Children with more experience made more complex visual art work. This study also supported the more comprehensive view that children do not abandon earlier methods of art making, but add to a repertoire of types of art they use to express themselves. Finally this study suggests that the children explored, recorded, played, connected, wore, provided and decorated with the visual arts to meet developmental needs. While many early childhood educators have long recognized the connection between the arts and social emotional development, this study suggests that the arts play an important part in meeting specific developmental needs: a sense of mastery, belonging, generosity and independence.
References


considerations. In A. M. Kindler (Ed.), *Child Development in Art* (pp. 95-106). Reston,


and Design*, 25(1), 74-85.


Books.

Books.

Gibson, E. J. (1988). Exploratory behavior in the development of perceiving, acting, and the


McArdle, F. (2007, April 27). Call for papers - The arts in early childhood from CIECwebINFO@symposium-journals.co.uk


Thompson, C. M. (2006). The "ket aesthetic". In J. Fineberg (Ed.), *When we were young*. Los Angeles, CA: University of California Press.


Retrieved September 17, 2007, from

Williams, L. R. (1992). Froebelion kindergarten. In L. R. Williams & D. P. Fromberg (Eds.), *The

Education, 27*(8), 2-7.

Wilson, B., & Ligtvoet, J. (1992). Across time and cultures: Stylistic changes in the drawings of
Dutch children. In D. Thistlewood (Ed.), *Drawing research and development* (pp. 75-88).
Essex, England: Longman.


Wright, S. (2007). Graphic-narrative play: Young children's authoring through drawing and

http://www.faculty.de.gcsu.edu/~dvesf/ids/fap/weav.html
APPENDIX A
PARENT CONSENT

Parent Permission for Child to Participate in a Research Study

University of Cincinnati
College of Education, Criminal Justice and Human Services
Susan Griebling, Annual Adjunct, Doctoral Candidate
513-556-3481, susan.griebling@uc.edu
Peg Elgas, Associate Professor
513-556-3815, peg.elgas@uc.edu

Title of Study: An Investigation of Small Group Project Work and its Relationship to Cognitive and Social Development in 3 to 5 year olds.

Introduction:
We would like permission from you to allow your child to participate in a research study with us. This research will help us understand young children’s interactions and growth when they participate in a small group project.

Purpose:
The purpose of this study is to investigate small group project work with young children and its relationship to cognitive and social development in 3 to 5 year olds in a preschool setting.

Duration:
This study will last from 3 to 6 months.

Number of Participants:
15-25 children and adults will be asked to participate in this research study.

Procedure:
We will be studying the children in your child’s classroom as they engage in small group project work. A project is an in depth study the children take part in over an extended period of time. The project is a normal part of the class activities. Your child’s teacher will be guiding the interaction with the children. Your child may choose to participate or not on any given day. Other age-appropriate activities will be provided if your child does not want to participate.

During the 3 to 6 months of the study, we will be observing the children and the teachers as they participate in the small group project work. We will be in the classroom for 1.5 hours each day. We will take notes and photographs, videotape and audio tape to assure accuracy of the observation. We will collect or copy the children’s work to study.

Risks/Discomforts:
We do not expect any risks with this study. Regular classroom health and safety guidelines will be followed.

Benefits:
Children will benefit from having the support of extra adults in the classroom and the children...
will enjoy learning through small group work.

Alternatives:
If you do not want your child to participate in this study there will be other activities for him/her in the classroom.

Confidentiality:
All our notes about from the study will stay in a locked file drawer in our offices. Computer files will be password protected. This study may be written up in a doctoral dissertation, journal articles, presented at conferences or discussed in college classrooms. When data is presented to others, names will have been changed to protect identities. If the video or photographs are used to present data, children and teachers will not be identified by name. Efforts will be made to obscure identities via technical means (i.e. faces will be blurred or faces will be cropped from photos).

Questions about the research study:
If you have any questions about this research study, you may contact Sue Griebling at (513) 556-3481 or Dr. Peg Elgas, faculty advisor at (513) 556-3815.

If you have any questions about your rights as a research participant, you may call the Chair of the Institutional Review Board – Social and Behavioral Sciences at (513) 558-5784.

The University of Cincinnati Institutional Review Board-Social and Behavioral Sciences reviews all non-medical research projects that involve human participants to be sure the rights and welfare of participants are protected.

If you have concerns about the study you may call the University of Cincinnati Research Compliance Hotline at (800) 889-1547.

Legal rights:
You or your child will not lose any legal rights by participating in this research study.

Agreement:
I have read this paper and asked any questions I had. I understand that I can withdraw permission at any time during the study.

I give permission for my child to be in this study. I will receive a copy of this signed and dated consent form for my records.

My child’s name __________________________

Parent/Legal Guardian Signature __________________________ Date __________________________
APPENDIX B
TEACHER CONSENT

Title of Study: An Investigation of Small Group Project Work and its Relationship to Cognitive and Social Development in 3 to 5 year olds

Introduction:
We would like obtain your permission to participate in a research study with us. This research will help us understand young children’s interactions and growth when they participate in a small group project.

Purpose: The purpose of this study is to investigate small group project work with young children and its relationship to cognitive and social development in 3 to 5 year olds in a preschool setting.

Duration:
This study will last from 3 to 6 months.

Number of Participants:
Approximately 16 children and four teachers are expected to participate in this research study.

Procedures:
We would like to conduct a study of the use of small group project work in your classroom. This study will take be conducted over 3 to 6 months. During the weeks of this study, we will be observing the children and the teachers as they participate in project work four days each for 1.5 hours each day. The time of day will be determined by the teacher. During this time we will be taking field notes and photographs. This work will also be videotaped to assure accuracy of the observation. We will collect or copy work samples to study. We would also like to interview you and conduct informal discussions about the project work as it unfolds.

Risks/Discomforts:
We do not expect anyone to be exposed to any risk or discomfort from participating in this study. Regular classroom health and safety guidelines will be followed.

Benefits:
Children may benefit from having the support of extra adults in the classroom.
Teachers may gain a better understanding of the project approach and the work of the children in their classroom.
Alternatives:
There are no other activities planned if you do not want to participate.

Confidentiality:
All our notes about from the study will stay in a locked file drawer in our offices. Computer files will be password protected. This study may be written up in a doctoral dissertation, journal articles, presented at conferences or discussed in college classrooms. When data is presented to others, names will have been changed to protect identities. If the video or photographs are used to present data, children and teachers will not be identified by name and efforts will be made to obscure identities via technical means (i.e. faces will be blurred or faces will be cropped from photos).

Questions about the research study:
If you have any questions about this research study, you may contact Sue Griebling at (513) 556-3481 or Dr. Peg Elgas, faculty advisor at (513) 556-3815.

If you have any questions about your rights as a research participant, you may call the Chair of the Institutional Review Board – Social and Behavioral Sciences at (513) 558-5784.

The University of Cincinnati Institutional Review Board-Social and Behavioral Sciences reviews all non-medical research projects that involve human participants to be sure the rights and welfare of participants are protected.

If you have concerns about the study you may call the University of Cincinnati Research Compliance Hotline at (800) 889-1547.

Legal rights:
You will not lose any legal rights by participating in this research study.

Voluntary Participation:
You may choose not to participate or you may quit participating at any time during the study.

Agreement:
I have read this consent document. I voluntarily agree to participate in this study. I will receive a copy of this signed and dated consent form for my records.

Signature of Participant ___________________________ Date __________

Signature of Person Obtaining Consent ___________________________ Date __________


Page 2 of 2
APPENDIX C
SAMPLE WEEKLY SUMMARY FORM

Week: 6
Contact dates: May 5 – 7, 2008

1. What were the main observations, themes or issues that appeared from this week?

Monday, May 05, 2008:

Today the children were very active. The classroom had been changed and now the art center is close to the garden center. The children were also painting pots for their mothers for mother’s day. Dominic spent time at the art table making flowers for the garden center. It is the first time I have seen him make anything. He also noticed that the flowers had fallen off the branches of the magnolia and discussed this with the Teacher.

Audrey made 3 flowers and with some convincing hung them up, but then took them home because she was worried that someone would break them, even though we put them up high. Her art seems very important to her. Her mother says she takes her projects home, takes them apart and then puts them together again.

John also did some work at the art table – the first time I have seen him there. When I asked him what he was making he said something I could not understand and pointed to the garden center. He also made a flower and we hung it up in the garden center for him.

Patrick also made a flower out of the Styrofoam and figured out how to get several of them to stay together by poking a stick to attach two together.

Joy was drawing on the note pad in the garden center too.

Maria also taped flowers to the wall. These were actually the same Popsicle sticks that Dominic used also.

Some girls from another class found 2 caterpillars and brought them in to show us. Elizabeth and started making a home for them out of the cut of the log, but the girls took them back outside and so that ended the home building.

After lunch Colleen was looking at the birds Audrey made last week and went to the art table to make something too, but she ended up throwing it away…didn’t say why. While looking at the caterpillars in the jar, Bridget took a Popsicle stick and colored it red, then black and said it was the caterpillar. Then she did an observational drawing of the butterfly on the top of the container.
Tuesday, May 6, 2008:

Tiana spent time in the early morning playing with the owls in the garden. She placed them on the overhead so they were sitting in the tree there. The children were also very busy with the art materials again. Elizabeth made a series of things to hang in the garden…an airplane and a lady bug. Joy placed almost all of the sticks on a book, the second day she has done this “dumping”. I think she wants to join in with making things there, but doesn’t know how to go about it. Audrey made an A with the Popsicle sticks. The children are interested mostly in poking the Styrofoam with these sticks to create things like birds and flowers. Tiana also made a butterfly and we hung it in the garden. Her butterfly was just a collage, but she is working to be like the other girls, though she doesn’t seem to have all of the skills they do yet. She also drew a flower. Bridget made a Popsicle stick into a caterpillar. She also drew the butterfly that was on the lid of the container the caterpillars were in. She hung both of these in the garden.

The children are definitely fascinated with the caterpillars they are finding on the playground.

Wednesday, May 07, 2008:

John brought in a tree that he had made at home. He jumped up and picked some leaves and pasted them on a piece of paper. His mother helped him make the trunk of the tree. She says he spends most of his time at home with art supplies, which is surprising because I hardly ever see him create at school. Patrick and Ashton spent a long time building their “energy machine” and talking with Eileen about it. Dominic also spent time talking to her about the insects. Elizabeth made a “package” and a “gift” today. She also helped Bridget remake her caterpillar since it was missing from yesterday. Bridget also took her picture of the mountain she made last week and placed it on the overhead again. She said she wanted it to be a scene for the garden area.
The children found three caterpillars on the playground. We also found an inchworm in the classroom. They are clearly interested in these creatures. Patrick also brought in a bug from home to share. Everyone showed interest in the caterpillars that are growing in the container and talking with us about them. Bridget spent time looking at one of the nature magazines and talking about the pictures. Audrey brought in a caterpillar from outside and made a lid for the container it was in, wrapped a leaf as a gift for it (but then thought that might not be good for the caterpillar (can’t eat through the paper) so she unwrapped it again. She had to cut a hole in the lid and repair it several times.

Tiana made a gift for Elizabeth—something to do with princess. She is clearly trying to fit in with the theme of the girls play.

2. **Summary of the information for the target questions**
How do the teacher’s interactions with the children affect the children’s work?

The teacher has been helping the children plant flowers for their mothers this week and has not interacted with the children around the project or the art materials. While the children are clearly interested in the insects, they are not doing any indepth investigations of them. But I do believe that the presence of Eileen and myself may be having some influence on their participation. They know we are interested in their work and in the topic, so they talk to us about it.

How will the change in the classroom environment affect the children’s work?

There has been a great deal of activity in the art area since we added the new materials. I have seen children there, creating, that have not been there since I began. Joy has created two “piles” that seem to be her first attempt. Dominic also got involved in making flowers for the garden area. This was exciting to see. Moving the art area closer to the garden also seems to be inspiring the children to place the things they make there.

3. **Other observations that were salient, interesting, illuminating or important in this contact?**

Although there is not a deep focus on the topic for the project in the classroom, the children still are drawn to the garden area and are making some things for it. Also, drawings and constructions continue. The “energy machine” was quite a serious construction this week and again Patrick and Ashton are working on a construction together, with Patrick as the leader and Ashton as the follower. There are still many conventions within the girl’s drawings and I don’t think they will go away from that if the project does not get more reflective and indepth.

4. **What new or remaining target questions are there to consider for the next contact?**

None this week
5. Reading Related to Research


In her book, *It’s Not a Bird Yet*, Kolbe focuses just on the drawings young children make. It is a very visually aesthetic book, with wonderful examples of the children’s drawings. She breaks children’s drawings into seven categories:

**Early markings**: these are the scribbles and lines very young children and children with little experience use when they begin drawing. I have seen an interesting phenomenon in my research around this. Patrick began the project only drawing scribbles in a circular shape. On the day that the naturalist came in and the children were given their research notebooks, he drew a set of continuous circles on the page and then continued to place scribbled markings all over the clipboard. His mother said that is all he did at home too. But the next week, when I suggested he take home the picture of the owl and draw it for us, he came back the next day with two beautifully detailed drawings of the owl. So, I am wondering what this means for him. Because he has not spent a lot of time drawing his work never contains conventions as some of the girl’s work does (who draw all the time).

**Action drawings**: these are drawings that include imaginative play. They depict motion and action and often go along with a story the child in saying aloud. In my research I have watched children paint bark and sticks and leaves. Sometimes they include conversations and sometimes not. Sometimes the children make noises as they draw. This is something I need to look into more as I do the transcriptions and have a chance to look at the video of these activities.

**Depicting people and animals**: frontal and side views. I have not seen the children I am working with attempt to make side views of animals or people. All are frontal.

**Depicting relationships**: relationships between people and things. These might include drawings of a family of people, or a drawing of a child next to a house. Bridget drew a picture of the branch with the caterpillars on it. This shows the relationship of the caterpillar to the branch.

In this section Kolbe includes a discussion of object-centered drawings and viewer-centered drawings. Object centered-drawings represent components of the object. A straight line for the stem of a flower. A circle with surround loops for the flower itself. These include what Eisner calls cultural conventions. The viewer-centered drawings are more observational. This shows an object from a particular viewpoint of the observer and the intention is to create an illusion of the object in real space. I have seen a great many examples of these two types of drawings in my research as well as combinations of the two. I believe the object-centered drawings depict the cultural symbols children pick up through interactions with others. For example, a flower with a circle in the center and round “petals” surrounding the circle; most flowers I have seen do not really look like this, but in our culture we all know this as a flower. I have also seen children spontaneously sit down, pick up a marker, and look at a flower and make a real attempt to draw what they see. Sometimes they include some of the conventions on these types of drawings, such as a smiley face on a butterfly drawn from observation. It is very interesting. Some of the girls who are very adept at drawing with conventions have a more difficult time with doing observational drawing. Does
learning these conventions set up a mental block for them and make it harder for them to “see” the way a flower really looks?

**A passion for order, patterns, and decorations**: In my research children have called these “designs” or “decorations”. Kolbe says they involve repetition, symmetry, order and balance. She quotes Ellen Dissanayake: “the desire to embellish and transform”. I am seeing a great deal of these in my study. Some of the items the children make for design might also have a purpose such as the caterpillar’s home, but children really do have a passion for creating collage and other designs just for the love of doing it. I love to do this too—maybe this is why I am drawn to and interested in children’s visual artwork. Kolbe also calls this compositional research. Vea Vecchi calls it aesthetic research. I resonate with these terms and find them to be complementary to my observations of children in my research. My middle son only drew these type of designs – now he is a civil engineer – I wonder if there is a connection?

**Spontaneous attempts to draw from life**: learning to see. Drawings prompted by direct observation. Kolbe says that children don’t always abandon their usual way of drawing but instead modify or change some of their drawing strategies when drawing from observation. This seems to be similar to what Kolbe said earlier – viewer centered drawings. I have documented children’s drawings from direct observation and they often do include some conventions they have learned.

**Story drawing**: a story unfolds as the drawing unfolds, with children see-sawing between the real and imaginary. I may have missed this in my own research, but I cannot recall seeing the children tell a story and draw at the same time. I will need to look for this in my transcripts.

**Popular culture in children’s drawings**: video, television, etc.

It was very interesting reading Kolbe’s book because she took a different perspective than I did in this first leg of my research. First, I looked at more than just drawing. I also looked at constructions children made. Second, my taxonomy is broader and breaks the drawing down differently. However, I can site her work in relation to mine and it does give me another perspective to view the children’s work from. It has also given me things to look for in the video – so glad I am not just relying on field notes for my research!
APPENDIX D
SAMPLE TRANSCRIPT: APRIL 28

Children are in the garden area with HT. Patrick and Mark are looking at the documentation panel with her. Patrick tries to take the stick away from Elizabeth.

Elizabeth: don't take that from me.

HT intervenes: Elizabeth, what are you doing with this stick.

Elizabeth: I'm trying to be the queen

HT: I had the sticks in the jar and I'm thinking they need to stay in the jar.

Elizabeth: no.

Colleen is moving the flowers to decorate the garden area.

Patrick at the special our activity table colors in scribbles on paper with round crayons. Very quickly. He then picks up the tray that the crayons were on and throws it on the table.

At the art table Rose is coloring on piece of corrugated cardboard. Mark comes over to her. He pulls out a piece of cardboard looks at it folds a backup and places it on the shelf.

Rose continued coloring with a purple marker on the cardboard dots and lines marketplace is a smaller piece of cardboard on top of hers.

Will pulls out a piece of cardboard to and lays it down

Mark spends time arranging cardboard on top of each other. He folds one piece impresses on top of the other.

Mark: this is going to be a trap. I'm going to build something.

He lays a nut on the cardboard and then removes it goes over and pulls out another piece of cardboard.

Rose is still drawing with purple marker on her cardboard.

Mark lays out a large piece of cardboard and places it next to the other ones he has been working with. Takes the cardboard he laid on top of the shelf and brings it over.

Rose lifts up her cardboard and looks underneath as she colors with the markers on it.

Mark looks at Rose's cardboard and lifts it up. Then he pulls another piece of cardboard out of the bag. He seems to be looking for is one that is large. He takes a marker and begins drawing on the cardboard. He moves marker up and down. Mark has appears a scissors and begins to try to cut the cardboard. It's down on the chair to work on it. He works at cutting the cardboard in half. Then he lays the halves on top of each other
Sue: What are you making Mark?

Mark: --

Patrick comes over to the art table. Looks at the shelves. He picks up a pair of scissors and begins cutting Marks cardboard. Mark moves over and begins cutting Rose’s cardboard (she has moved away)

Mark: Go like this.

Colleen comes to the art table, picks up a piece of pink paper and markers and begins to draw.

Mark and Patrick continue working on cutting the cardboard

Audrey comes to the art table and picks up a piece of cardboard. She begins to cut it.

Audrey: I am very sick. I am super sick. There is green stuff coming out of my nose.

Colleen is now cutting cardboard too.

Audrey cuts the edges of a feather onto the cardboard.

Mark, Patrick work to cut the same piece of cardboard and then Patrick moves to another piece

Audrey: What happened to the caterpillars?

Sue: I think HT had to take them out of the classroom

Audrey: why?

13:30

Sue: because they were making her sneeze.

Audrey leaves the table. Colleen leaves the table.

Patrick looks at the collage items, walks away from the table, pulls a chair on the floor as he walks by.

Colleen returns to the art table, and then leaves again.

MT: Patrick. Can you please pick that chair up?

Patrick sets the chair upright

They are art table cutting cardboard.

Elizabeth comes over to the art table: what are you doing? She picks up a piece of the cardboard.

Elizabeth: this is an activity! MT, this is an activity.

MT: it's an activity? What would he think you can do with that?
Elizabeth throws the larger piece of cardboard onto the floor. Then she sits down at the art table, picks up a red feather. Red? I hate red, I like pink. You know I hate red

Mark: I know

Elizabeth: picks up feathers and sticks from the collage tray and arranges them in her hand. She rolls up a piece of paper into a ball and throws it at Shawn.

Elizabeth: you have girl’s nail polish

Shawn looks at his fingers. Brings the tape over to the art table and sets it down. Brings markers over and moves some of the collage items over. Brings over a piece of purple paper. Begins putting clear tape on the paper.

Elizabeth is still working with the collage materials. Piles them into her hand and squeezes them. She goes to the shelf and gets the tape and pulls a piece off. Holds feather on walnut and attempts to place tape on it. Tape gets stuck to a piece of leaf. She tries to shake it off, and then pulls it off. Balls the tape up in her hands.

Elizabeth: Rachel!

Elizabeth rolls the walnut in her hands. Gets a piece of paper and lays the walnut on top of it.

Elizabeth, off camera, talking to adult who is taking to Dominic about bugs biting: Yes and like, and like, and like little sticks bite you, little sticks bite you,

Dominic: bite your head

Elizabeth: no, no when they stung you. And when you put medicine on it you get better. And then when you eat ice cream it gets better and then it gets little and little

Adult: Wow, when you get stung you get to medicine on it get ice cream. That’s a great

Elizabeth: and they get little so they won’t bleed anymore

Adult: You put a Band-Aid on it so it won’t bleed or hurt

Elizabeth: Yea, and put medicine on it and eat ice cream and then put a Band-Aid on it and put some bubbles on it so it will wash it away.

Adult: very good, that’s a good way to clean out bug bites, so they don’t get infected.

Elizabeth returns to the art table. She pulls out a long piece of tape. It sticks to itself, she un-sticks it lays it across the top of the walnut and onto the paper. She pulls another piece of tape and lays it perpendicular on the walnut and paper. She continues laying tape on the paper covering the walnut.

Shawn had folded his paper into a square and taped it together. He shows it to Sue

Sue: what did you make?
Shawn: a present

Sue: a present

Shawn leaves the table, then comes back and draws some marks on the “present” with a purple marker.

Elizabeth goes to the art shelves. I’m going to make, I’m going to make a present too. I’m going to make a present with straws and pencils and and .. she takes crayons to

Elizabeth takes color pencils down from the shelf. She lays the items onto the paper.

Sue: What cha working on Elizabeth?

Elizabeth: a birthday present

Sue: a birthday present?

She has several pencils laying across the paper, and she works to unbend a paper clip. Looks at the camera and then begins dumping more items from the shelves onto the paper, pats them with her hand.

Elizabeth: my birthday present. It’s Elizabeth’s birthday present. She folds the paper over the materials, but they fall out. She places them back into the cups

Shawn brings his present over to show her:

Elizabeth: I am trying to make a birthday present

Shawn:I like birthday present. Shows the present to her and points to the markings he has made

Elizabeth: you got me a birthday present?!

Shawn: Look, look at it. He points out the markings to Elizabeth. He picks up a stamp pad.

Elizabeth: um, not yet. She places it back into the container… For Nicky’s birthday present. She places colored pencils onto her paper, rubs them back and forth.

Shawn adds chalk coloring to his present

Elizabeth continues adding pencils on to her paper, lining them up. Places some back into the containers.

HT: Shawn and Elizabeth, it’s almost time to clean up

Elizabeth: I’m making a birthday present. She leaves two pencils and then adds two pieces of chalk. Adds the caps to the small markers. She folds the paper over and presses it down with her hands. Then folds the ends over, pressing to hold it.

Elizabeth to Shawn: I need some tape please

Shawn points: look, over there
Elizabeth, pointing to the tape: You’ll have to get some

Shawn gets the tape from the table

HT: Elizabeth and Shawn, go ahead and start cleaning up.

Elizabeth: I’m making my birthday present. She picks up her present and moves over to the table. Goes to the tape and places clear tape on the present.

Shawn: Look at my birthday present

Clean up song

Elizabeth pulls very long piece of tape off. I need some help with this. Adds it to her present, wrapping it around it. Shawn looks on.

Elizabeth: I want to put a stamp on it. Shawn follows her over to the art table,
APPENDIX E
SCREENSHOT OF TALLY SHEETS

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## APPENDIX F
### COMPONENTIAL ANALYSIS OF TWO DOMAINS

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