

Visual Arts Education for Students with Significant Disabilities:
Examining the Intersection Between Art Education,
Special Education and the Learning Sciences.

By

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Abstract

This dissertation proposes to understand how the goals and theories of special education, art education, and the learning sciences intersect in a visual arts class for students with significant disabilities. Art teachers often have caseloads of hundreds of students, including many with special needs, yet arts-based resources for teaching students with severe disabilities are very limited in both number and depth (Loesl, 2012). There is extensive research in the visual arts, the learning sciences, and special education, yet very little of that research examines how these areas intersect, support or contradict each other. For students with disabilities, art-making experiences may be as beneficial if not more so than for their peers (Loesl, 2012), hence the need for studies such as this. This study examines learning both in and through the arts, considering what learning objectives are most relevant and valuable for these students, and how the necessary modifications and accommodations are made to maximize meaningful learning. The art-making processes of 34 students at a specialized school for students with significant disabilities were observed and documented, and data was collected and analyzed in an effort to answer the following three research questions:

- What do students learn in this self-contained specialized art class?
- What does student learning in this setting suggest about the balance between predictable structure and open-ended opportunities for creativity development?
- What attributes of classroom context foster or inhibit learning in this setting?

Data collection also included parent questionnaires, staff questionnaires, and teacher journaling and memos. Themes explored include physical and intellectual access to arts programming, instructional and contextual classroom strategies, and relational, behavioral, and communicational programming considerations. Choice making is explained as an essential step in the development of creativity and self-determination. A lens of distributed cognition was used to understand learning supported by assistive technologies, structured routines, support staff, and communication supports. While this study closely examines visual arts learning in this unique setting, I hope this research will provide insight into how to better provide arts access and opportunity for students with significant disabilities, enhancing learning, sensory exploration, creativity development, personal expression, and of quality of life.

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Chapter 1 Introduction

“It is one of my deepest innermost convictions that wherever there is a spark of human spirit – no matter how dim it may be –it is our sacred responsibility as humans, teachers, and educators to fan it into whatever flame it conceivably may develop.”
-Viktor Lowenfeld

This dissertation proposes to understand how the goals and theories of special education, art education, and the learning sciences intersect in a visual arts class for students with significant disabilities. The study takes place at a small, specialized school for students with significant disabilities. It is a consortium serving 17 surrounding school districts, with a heavy educational focus on teaching social, behavioral, and communication skills that enable students to become participating members of their communities. All student participants in this study qualify for Wisconsin’s alternative assessments and have some level of intellectual disability, and may also have autism, physical disabilities, multiple disabilities and/or significant social and behavioral needs. This study and subsequent writing focus heavily on adaptive arts, which can be described as instruction and adaptations in the visual arts that provides opportunities for exploration of art making, art history, aesthetics, and art criticism, while also developing students’ natural capacity for joyful creative expression (Alverno, 2015). More specifically, this study was designed to help me better understand what and how students learn through arts programming in this setting, and how that learning relates to research in the fields of art education, special education, and the learning sciences. Therefore, I purposefully engaged in reflective practice, keeping one foot in practice and the other in research, as I explored themes in the data that could prove useful both to me as a teacher and in the research field. My passion for arts-based learning for all students, my continual curiosity about how people learn, and my

strong desire to advocate for quality, meaningful arts programming for students with severe disabilities, fuel this study. My research interests, however, did not begin with adaptive arts.

As a doctoral candidate, and K-12 visual arts teacher for over 20 years, I was initially interested in how creativity is taught and measured in education. A significant amount of reading was done in the field of creativity, expanding my understanding of what it is, how it can be taught and learned, and how it can be measured. In the mean time, I was transferred to a new school, a specialized school for 10-21 year olds with moderate to severe intellectual disabilities, as well as other significant disabilities. I was given the challenge of developing an art program for these students, with very little background in or understanding of special education or disability. The first few months were confusing and a little scary at times, but always challenging. My students' cognitive levels range from an ability to blink yes or no and respond with smile and eye gazes, to a middle school academic level, and many of the students have significant physical disabilities as well. I have an add-on certification in Adaptive Arts, but it is decades old, and provided little guidance. My experience working with students with disabilities, much like most art teachers, was limited to the students who had been "mainstreamed" or "included" in my regular arts classes over the years. In most of these cases, the students came to class with an assistant, and together we tried to figure out how to best offer appropriate and meaningful arts opportunities to these students. In all those years, however, I had not encountered students with the level of severe physical and cognitive disabilities I was now facing. Implementing current National and State Art Education standards at age appropriate levels seemed impossible, but I dove in, experimenting with various materials and instructional strategies. As I have gotten to know these students, my research interests have shifted. Much of what I learned about creativity seemed to suggest that artistic expression is a social phenomenon,

one that can't exist without social context or purpose or meaning; yet many of my students, by medical definition, exhibit deficits in the area of social understanding and imagination. Does that mean they can't, by definition, be "creative?" Bothered by this notion, I became intrigued by what attributes lie at the very basic level of developing creativity and artistic expression, as well as the meaning of "creativity" as it used both in every day language and by teachers in reference to an educational process or product. The many varying definitions and use of the term inspired me to explore what "creativity" means to the cognitively disabled. They can certainly create. They can make choices. They can produce works with artistic materials. While they may not all be able to conceptualize how their artwork has social meaning, they ARE creating, based on their own preferences, something that did not previously exist. Must it be socially or culturally novel? Does the inability of the artist to use their art to communicate a linguistic message invalidate their artwork?

As I considered the meaning of creativity with this population, I found myself questioning more specifically, what do these students actually learn in a visual arts class experience? Is it about creativity? Is it about self-expression or personal communication? Is it about learning art history or art and culture? Is it about the development of specific art skills? Is its purpose the development of recreation and leisure time interests for the betterment of quality of life? Is it about teaching academic and functional skills in and through the arts? And what does this mean for how we teach art to special needs populations? I have also had to examine my own preconceived notions of disability, and consider how a teacher's view of disability affects teaching and learning for students with and without disabilities. I have learned a lot about what works to make art accessible to my students, but I've only scratched the surface. This dissertation is the beginning of my journey in the area of Special Education and Arts, one that

could not possibly answer all the questions that I had coming in, much less the new ones this study brought to light. Through this research though, I hope to shed light on relationships between special education theory, art education goals and theory, and learning sciences theory, as they come together in the art-making processes of adolescents with moderate to severe disabilities in this particular setting. In this study, data was collected and analyzed in an effort to answer the following three research questions:

- What do students learn in this self-contained special education art class?
- What does student learning in this setting suggest about the balance between predictable structure and open-ended opportunities for creativity development?
- What attributes of classroom context foster or inhibit learning in this setting?

In narrowing and answering the above questions, themes in this paper will cover physical and intellectual access to arts learning, instructional delivery strategies that foster learning, perceived learning objectives and outcomes and their relation to general art and special education standards, and balancing the structure recommended by special education best practice with choice-making and open-ended opportunities recommended for creativity development. With regard to access, data in this study will show how access to arts learning is affected by classroom contexts and instructional strategies such as the use of assistive technologies, including adaptive tools and communication supports, the creation of structure and predictability of space and lesson format, and relational considerations such as student-teacher rapport and the involvement of paraprofessionals. In relation to what students learn in this setting, data will be explored in order to narrow down the most dominant areas of perceived learning in and through this arts program. Learning themes discussed include:

- an increase in understanding of art making as a leisure activity,

- improves art-related life skills, such as tool and material usage, direction following, and engagement in art activities,
- increased choice-making ability,
- increased interest and participation in art making,
- improved sensory tolerance, and
- improved therapeutic use of art.

These themes will be examined in relation to both the data and related research. Furthermore, implications will be suggested for the fields of art education, special education, and the learning sciences, with the hope of fostering better access and opportunity for all adolescents and young adults with disabilities to engage in the arts for learning, sensory exploration, creativity development, personal expression, and enhancement of quality of life.

From my teacher-role perspective, I hope this research helps other art teachers more effectively include students with disabilities in arts learning and doing. As a researcher, I seek to use the results of this study to inform the academic fields of art education, special education, and the learning sciences. Chapter two will examine some of the relevant literature in each field. Chapter three will explain the research methodology employed in this constructivist grounded theory inspired study. Chapters four through six, the results chapters, will show how the data, triangulated between student data, teacher notes, and staff and parent surveys, exemplify the learning themes mentioned above, as well as contexts of classroom structure and instructional delivery that foster and inhibit arts-based learning and creativity development. In chapter seven, suggestions are offered for further consideration in all three fields. I hope to demonstrate ways in which art educators can incorporate theory and practice from special education, with more consideration given to classroom space and stimuli, universal design, modes of instructional

delivery such as the use of task analysis, and visual supports, and alternate means of measuring learning. Special educators will perhaps see value in using the arts as a mode of instruction, offering the visual, tactile, and experiential learning experiences that benefit many students with learning differences. And for the learning sciences, I hope the inclusion of students with severe special needs, the one percent of the one percent, will inspire more studies on how these students develop, acquire knowledge and skill, and learn to relate to the world around them. Lastly, it is my utmost desire that studies such as this will promote more collaboration between these three academic fields.

Chapter 2 Theoretical Background

Students with severe disabilities have a legal and ethical right to access to and participation in the general educational curriculum, and therefore should have a right to arts experiences equivalent to that offered to their nondisabled peers. The difficulty for teachers, however, is creating arts learning opportunities that embrace research-based arts learning and current arts standards, while simultaneously valuing the individual students' learning differences and physical and intellectual capabilities and limitations. Art education theory, special education theory, and learning sciences theory can seem contradictory when an attempt is made to apply them simultaneously. For example, research in autism suggests the importance of incorporating structure and predictability in lessons and learning environments (Billingsley, 2013; Crosland, 2012; Beverly Levett-Gerber, 2006; Stokes, 2004); yet arts research encourages more open-ended problem-solving or exploratory models of learning with a goal of developing creativity and higher level thinking skills (Hurwitz & Day, 2001; Lowenfeld & Brittain, 1987; Skulimowski, 2011). On the other hand, theories from each field can meld together more seamlessly, as is the case with identity and self-expression development in the arts and self-determination goals in special education.

2.1 The Learning Sciences

The Learning Sciences have contributed greatly to the theoretical background of this study. Howard Gardner, an expert in the areas of intelligence and creativity, suggests in his book "The Unschooled Mind," that schools and curricula are not set up best for the ways in which human minds function and for natural patterns of learning (Gardner, 2011b). In that particular book, Gardner explains his belief that education has become too focused on learning facts and figures, with too little emphasis on disciplinary ways of knowing and thinking. Gardner argues

that memorized facts fade away, while developed disciplinary ways of knowing and learning have lifelong applications. Interestingly, the study addressed in this book discusses three groups of learners: those with high, average, and low cognitive abilities, yet intentionally leaves out the severely disabled. This is a prime example of how resources for teaching the one percent of the one percent, those who are the focus of this research, are few and far between. They have needs that are very individualized and produce findings that are very difficult to generalize. They are our students with the most significant learning needs, and the least amount of knowledge as to how to meet those needs, hence the importance of studies such as this one.

Gardner, in *The Unschooled Mind*, expressed his appreciation for the work of Russian developmental psychologist Lev Vygotsky (Gardner, 2011b). In particular, Gardner believes that Vygotsky's theory of the "zone of proximal development" is extraordinarily important when determining what students are capable of doing. Vygotsky's work seems particularly applicable in this study, in that it theorizes that a student's capability is more accurately measured by what he can do with help than by what he can do alone (Vygotsky, 1978). Vygotsky suggests the importance of presenting opportunities that are just beyond the grasp of what students can do independently, thus creating a zone of development, or growth opportunity. Many of the participants in this current study have limited ability to independently participate and progress in the arts. Their disabilities present obstacles to learning in the same manner as their nondisabled peers. The nature of their disabilities demands that much of what they do will be done with some to significant assistance. It can be helpful to apply Vygotsky's zone of proximal development theory in this case, giving students opportunities to participate in the general arts education curriculum *with help*, in order to determine and develop what they may later be able to do when that assistance is weaned and removed.

Other art and learning science theories, such as visual literacy, meaning making, theory of mind, meaning making and culture, and stages of artistic development, are useful as well, regarding how students participate in visual arts learning and what they learn when some of these cognitive processes are impaired. Furthermore, assessment of student artwork helps determine their developmental stage, as well as how their abilities relative to their developmental stage interact with aspects of their disabilities (i.e. sensory impairments or sensitivities).

2.1.1 Meaning making in and through the arts. The most recent art education goals from the National Coalition of Core Arts Standards (NCCAS) demonstrate the importance of making arts learning personally and culturally meaningful; yet what is meaningful to a student with severe physical or cognitive disabilities may be very different from that of his peers. Artist Duane Hanson was quoted as saying, “Art doesn’t have to be pretty; it has to be meaningful.” How do we determine what is *meaningful*? And to whom? Let’s begin by looking at some of the research on meaning making.

2.1.2 Meaning and visual literacy. The arts are a form of visual communication. In today’s world, students are constantly bombarded with visual communication, through television, advertising, video gaming, iPads, iPods, Youtube, and other social media (Cerkez, 2014). Visual media is part of our culture, and understanding how it conveys meaning is part of visual literacy. Research suggests that visual literacy skills must be taught, as they do not develop naturally beyond a basic level (Ausburn and Ausburn, 1978, in Little, 2015). The National Coalition for Core Arts Standards states on their website that the goal of an arts education is artistic literacy (NCCAS, 2013), which they define as having the knowledge and understanding required to participate authentically in the arts by creating, presenting, responding and connecting through symbols and metaphors. Other art education research posits the

importance of including visual literacy instruction in visual arts learning (Rayala, 2012). Images convey meaning. Viewers interpret meaning. Meaning making is influenced by culture and background knowledge (Rogoff & Angelillo, 2002). Artists choose particular visual imagery in order to convey various meanings. Others judge us by the images of ourselves that we make public. We are influenced by the images we see. For example, imagery in advertising and packaging is used to draw our attention, to make products look appealing, and to convince us that we can look a certain way or gain power or prestige by using or buying the advertised product. Images we see can affect our views of gender, race, wealth and body image. Visual literacy fosters the awareness of the influence of interpretations (meanings) made while viewing visual imagery. For students with deficits in receptive language, visual literacy would seem to be exceedingly important, as much of their learning would be visual.

2.1.3 Meaning making and theory of mind. What does this suggest about arts learning for individuals with intellectual disabilities? As mentioned above, communication deficits can result in visual learning becoming a primary mode of learning and information exchange. For students who struggle with verbal communication, visual literacy becomes a goal perhaps even more important than for their nondisabled peers. In addition, the advancement and prevalence of digital media has made it more difficult to distinguish between what is real and what is made up (Anderson, 2007), perhaps creating a greater need for visual literacy instruction for students with processing deficits. Many students in this particular study, for instance, have difficulties differentiating real-life stories from animated movie stories. Often, the characters and experiences in the movies these students watch become very real memories for them, memories that influence their behaviors, interests, and social interactions. There is a lack of research and resources, however, in teaching visual literacy in the arts to students with intellectual disabilities.

In terms of meaning-making capabilities amongst students with intellectual disabilities, some research suggests that students may struggle with standard forms of meaning making and communication. Baron-Cohen's Theory of mind, for example, suggests that humans base their theory of other's "minds" on an understanding of their own (Baron-Cohen & Baron-Cohen, 1997). One must be able to understand one's own thoughts, desires, and intentions first and then use that understanding to attribute mental states to others. Baron-Cohen's research suggests that normally developing infants exhibit the beginning stages of this theory of mind when they show the ability to pay attention to a person or object of interest. This "attention" suggests the ability to represent a person or object as something of interest. Extended attention to persons or objects of interest is often absent in individuals with developmental disabilities, resulting in struggles with communication and social understanding (O'Connor & Stagnitti, 2011). Communication is foundational for meaningful social connections. Social and cultural understandings are foundational for learning about how the arts convey meaning about people, places, events, and cultures. Social understanding is foundational for meaning making about the world around us. Art audiences, whether visual, musical or theatrical, often reflect and comment on the emotional impact of a piece. Without social understanding, is that lost? Can it be taught?

It has been suggested that there may be connections between theory of mind and creativity via the imagination (Craig & Baron-Cohen, 1999). In particular, individuals with autism often have an altered concept of self (note that the word autism comes from the Greek word "autos" meaning self), resulting in social and communication difficulties. Baron-Cohen refers to this phenomenon as "mind-blindness," also described an impairment in the ability to represent the mental states of both self and others (Lombardo & Baron-Cohen, 2011). Whether the presence of mind-blindness prohibits the development of creative ability is worth considering

in this study, although other factors would need to be considered as well, such as expressive and receptive communication, and the ability to represent concepts or objects via pictures or symbols, and the ability to generalize. In visual arts learning, analyzing, evaluating, and responding to artwork, communicating what an artwork means to the student viewer and what is thought about the artist's intent, are dependent on both understanding of mind and abilities in receptive and expressive communication. Social and verbal communication challenges greatly impede both learning and assessment. When students with intellectual disabilities seem unable to assign meaning to their own artwork, convey meaning through their artwork, or describe the meaning of an artwork, how are we to know if they lack the ability to make and interpret meaning, lack the ability to communicate what they know, or simply have no interest the subject and are therefore refraining from engaging at all?

2.1.4 Meaning making and culture. Culture and metaphor also play a big role in creating and understanding art, and require the ability to give meaning to people, places and things. Viewers interpret artwork through the lens of their own experiences. A single artwork often receives very different critiques from different people. Although they are all viewing the same work of art, they are analyzing and interpreting it from unique individual perspectives. For example, two students, one of European-American Heritage and the other of Mexican heritage, observing a painting of a child looking away while being spoken to by an adult might see two opposing emotions in the child. The avoidance of eye contact could be interpreted as guilt or inattention, or as a sign of respect for authority. There is not a right or wrong interpretation of meaning; each is determined by the viewer's cultural experiences. The culture of the communities in which one learns matters, affecting the development cognitive abilities and social relationships that predetermine how meaning will be made (Rogoff, 2003).

Research points to meaning making as it relates to models of representation, as well as culture and the use of metaphors (Lakoff & Johnson, 1980). Bruner suggests that while computational and information-processing theories explain in part how the human brain processes information, such theories neglect to explain the influence of culture and context on the content and functioning of the mind (Bruner, 1996). Bruner describes culture as “a set of values, skills and ways of life,” as a “toolkit” for sense making and communicating. He explains that culture cannot be separated from cognition and learning, in that our use of and interaction with people, things and tools controls what we do and how we learn. In Dewey fashion, he describes knowing as doing, and skill as a non-theoretical way of dealing with things. What we know and do is affected by conventions of our culture. Yet what does culture and the meaning of people, places, and things, look like to a student with autism or intellectual disabilities? How do we connect learning to their world?

It has been suggested that human development actually *is* a cultural process (Rogoff, 2003). Rogoff states that humans develop as participants in cultural communities, which change, and learn skills based on the cultural practices and priorities of those communities. Western age-based theories of development are seriously questioned when “typical” development is examined in cultures around the globe, as there is a significant amount of variation in when children reach certain developmental milestones, such as sitting up, walking and talking; and these variations are in part dependent upon what is valued in the child’s cultural community. Rogoff points out that researchers are often too quick to generalize too widely what they find to be “typical” within their own cultural community, and too quick to judge differences as wrong or inferior or less desirable. It is interesting to note that while the arts propose to teach about cultural diversity and

appreciation, theory on artistic development is based mainly on European-American art and teaching, and is primary age-based.

Furthermore, Rogoff claims that “understanding one’s own cultural heritage, as well as other cultural communities, requires taking the perspective of people of contrasting backgrounds” (p. 11). This may be very difficult for students with intellectual disabilities and autism, however, it would seem to be of utmost importance for teachers of such students to be able to “take the perspective” of those they are trying to teach. Although the reference was made for ethnographic cultural studies rather than for individuals with disabilities, the following quote seems very fitting for this study: “Interpreting the activity of people without regard for their meaning system and goals renders observations meaningless” (p. 17). Teachers of students with special needs must consider meaning and function behind behaviors, hence the purpose of Functional Behavior Assessments (FBA’s) and Behavior Intervention Plans (BIP’s), commonly used in special education, before disciplining or attempting to redirect or correct a behavior. Rogoff shares that regarding culture, understanding the function of behavior helps us understand how different ways of doing things may accomplish similar goals, or how similar ways of doing things can serve very different purposes. The same would hold true in both art making and working with students with and without disabilities. In the arts, teachers must remember that each student’s background experiences, cultural practices, and personal preferences and views of the world determine meaning given to their own artwork and to the artwork of others.

2.1.5 The nature-nurture debate. We have determined that meaning making has a cultural basis. While culture is important in examining the mind, biology and evolution must also be considered. Bruner (1996) emphasizes that it is his belief, although there are definitely two opposing camps in the field of psychology representing the nature versus nurture debate, that it

should not be a matter of either-or. After examining research studies on the infant mind, autism, children's theory of mind, and enculturation in chimpanzees, Bruner restates the importance of recognizing the interplay of biology and culture in understanding the human mind (Bruner, 1996). Is it possible then for students to develop and demonstrate creativity if they struggle with the creation of artifacts society values as representative of creativity? Or stated another way, does creativity exist within a student who is severely disabled and lacks the means to communicate and create in ways the interpreting cultural group measures creativity?

The arts are inextricably connected to culture. Merriam Webster defines culture as:

: the beliefs, customs, arts, etc., of a particular society, group, place, or time

: a particular society that has its own beliefs, ways of life, art, etc.

: a way of thinking, behaving, or working that exists in a place or organization

Culture can be viewed from a micro to a macro level, the culture of a family or small group to the culture of an ethnic group, a business, or a country. If culture, or the values and ways of life of a community, are what enable us to give meaning to the people, places and things in our lives, how is meaning making in the arts impacted by intellectual disabilities that interfere with social understanding? It would seem that teachers must understand culture from the individual student's view of the world when trying to develop meaning making skills in the arts. When discussing art and culture with this population, the scope of their recognized "world" must be considered before an attempt can be made to ask them to explain, represent, or expand it. It will be important in this study to consider the culture of the site, the families, and the individual students in this study in attempting to develop and measure meaning making ability in the arts. This group of students may or may not be capable of using metaphor as representation of imagination, but for art making to serve any purpose, there must be something meaningful about it for the individual students and their families. Is meaning making biological or cultural? Rogoff argues

that all humans are in fact biologically cultural (Rogoff, 2003). If it is not a case of either-or, we should not assume that anyone, with or without intellectual disabilities is biologically incapable of meaning making.

2.1.6 Meaningful participation in the arts. Meaningful participation in the arts should be accessible to all. What makes it meaningful, however, may be very different for students with disabilities than for their nondisabled peers. Meaning making might be the fulfillment of a sensory experience, or the repetitious drawing of a favorite object or interest. It might be the pure joy of the kinesthetic experience of watching glue ooze across a piece of paper or the feeling of clay squishing between the fingers.

A meaningful experience should also be a successful experience, but what does “success” in the arts look like for students with disabilities? The NCCAS posits that success in the arts demands engagement in four fundamental practices: imagination, investigation, communication, and collaboration. Furthermore, the authors suggest that communication is at the heart of the arts, requiring processing, listening, observing, speaking, questioning, analyzing, and evaluating meaning. All students can and should be provided with the fullness of opportunity that art programs can provide, yet if communication skills are a prerequisite, many students with disabilities immediately have reduced access to full participation, at least until adequate accommodations are made. This study will examine how visual supports and assistive technologies can help to understand each individual’s view of their world and overcome the communication obstacle to full participation in the arts. However, it must also consider what these students learn through and value about arts programming that may be similar or different from their non-disabled peers. Perhaps the goals of arts education for typically developing students are not exactly the same as the goals these students have or should have in experiencing

the arts. As the late Elliot Eisner said, “The arts celebrate multiple perspectives. One of their large lessons is that there are many ways to see and interpret the world (Eisner, 2002).”

2.1.7 Stages of artistic development. Stages of artistic development have been widely used for decades in the development of art education curricula. Both the National Standards for Visual Arts Education, developed in 1994, and the Common Core Visual Arts Standards recently published, although adaptable, were designed from the frame of reference of the stages of artistic development of normally developing children. The dominant developmental theory used in the visual arts has been that of Viktor Lowenfeld (Lowenfeld & Brittain, 1987), which describes the following sequential stages of artistic development:

1. Scribbling Stage (ages 2-4)

In this stage, the child initially makes uncontrolled markings and demonstrated very little self-control over his own fine motor activities. Mark making is a kinesthetic experience. This evolves into controlled kinesthetic motions resulting in more repetitious scribbles. The child is beginning to show awareness of mark making.

2. Preschematic (ages 4-6)

In this second stage, marks become more purposeful, as the child begins to make recognizable shapes, generally beginning with combinations of circles and lines. The child begins to demonstrate the use of a schema as she names or labels the shapes she has created. This is the beginning stage of using art to represent experience. There is generally no understanding of spatial relationships in the picture at this stage, rather objects float randomly on the paper.

3. Schematic (ages 7-9)

In this stage, children are beginning to show an understanding of space and order in their visual representations. Their drawings represent objects and people in their lives. Relationships between objects begin to emerge, such as proximity and size relationships, although they may be exaggerated based on emotional connection or response to the person or object. For example, at this stage, children will often draw themselves larger than everyone else and heads may be much bigger than bodies. Some children will also draw “x-ray” type images, showing what would be inside an object. Although drawings do not look realistic, they are clear representational symbols that a child is using to convey meaning.

4. Dawning Realism (ages 9-11)

In the Dawning Realism Stage, children develop the desire to make their representational drawings appear more realistic, although they also begin to recognize their own inability to accurately portray objects realistically. During this stage, students may become more self-

critical, and start comparing their work to that of their peers. Children are also becoming more aware of depth and perspective, and express a desire to shade or demonstrate spatial perception. As children become more aware of their own drawings relative to both reality and to the drawing of others, their drawings often become stiffer and less spontaneous.

5. Pseudo-realism (11-13)

In this developmental stage, children place increasingly higher value on the artistic product, unlike the early stages where enjoyment was purely in the process of mark making and symbolizing people or objects of importance. Children recognize the need for visual resources to observe in order to draw them realistically. Drawings will seem to more accurately represent an object, a person, or a scene as perceived by the child, with more attention to detail and proportion, although often with a lack of emotion or abstraction.

6. Period of Decision (14-16)

In this final stage, the natural progression of artistic development will not continue without a conscious decision to learn to draw more skillfully. Students become very self-critical and easily discouraged when their artwork doesn't measure up to their expectation. Lowenfeld suggests that it is important at this stage to expand students' ideas of art by exposing them to abstract art and the wide variety of art occupations that involve more than drawing and painting.

As can be seen, the beginning stages are purely kinesthetic in purpose, involving an exploration of materials as children learn to make marks and recognize cause and effect in their mark making. As children begin to develop the cognitive ability to represent objects and people with meaningful marks, drawing changes and shapes and forms begin to emerge. Cognitively, the next developmental step is the emergence of schemas. In normal child development this occurs as motor skills are also becoming more refined. As a result, children begin to be able to symbolically represent people, objects, places and events in their artwork. They can at this stage tell stories, both real and pretend through their artwork. Finally, as motor skills and cognitive abilities mature, individuals enter the stage of realism, where the desire is to be able create realistically representations of their experiences and ideas through their artwork.

Judith Aron Rubin, child art therapist, presents artistic development in a different fashion. She identifies the following stages of artistic development: manipulating, forming, naming, representing, containing, experimenting, consolidating, naturalizing, and personalizing (Rubin,

2005). The stages she defines are less linear, although they do begin with more simple processes and develop into more complex processes. They also encompass both 2-D and 3-D art making. Although they often overlap and are more process than product oriented, individuals should exhibit growth in each of the areas (Shore, 2013). Shore suggests that Lowenfeld's stages of artistic development can be used by therapists to determine a patient's approximate mental age. This could be useful in working with students with cognitive disabilities so long as it is not considered conclusive evidence. In any case, art teachers desiring to meet the learning needs of students with disabilities must be able to understand how children develop artistically, yet use that knowledge in combination with their understanding of special education law and best practice.

2.2 Special Education Law and Best Practice

Teachers of art must have a basic understanding of child artistic development. Teachers of special education students must have a basic understanding of disability and special education law. Yet the practical implementation of each in real world educational settings requires an understanding of why special education exists in the first place, as is captured in the following quote:

What is 'special' about special education, as an institutional practice, is that the continuum of places (co-teaching, team teaching, consultation services, resource room, special class, special school, hospital-bound education) allows the delivery of appropriate instruction geared to the individual needs of atypical students. There is no magic in the place itself but the choice in structures, and consequently the placement flexibility can provide a functional advantage of special education in comparison to general education. Special educators are able to give more explicit, carefully controlled and monitored, intensive, and sustained instruction for atypical learners than are general educators (Bateno, 2011; Zigmund & Kloo, 2011). (Anastasiou, 2011)

Successful special education programming, as stated above, requires a continuum of service options, including place and methods of instructional delivery, geared to individual learning

needs. These educational choices, however, must be in alignment with current special education law.

2.2.1 Special education law. Current federal law, the IDEA (Individuals with Disabilities Education Act), reauthorized in 1997 and most recently in 2004, requires that all individuals with disabilities receive a free appropriate public education (FAPE) in the least restrictive environment (LRE), and to the maximum extent appropriate be educated with their nondisabled peers. Education professionals must exhaust the least restrictive or least drastic alternative before depriving a student of their rights to be educated in the general curriculum, in their home school, with their nondisabled peers (Turnbull, Wehmeyer, Turnbull, & Stowe, 2006). Decisions by IEP teams must be taken very seriously, as Turnbull et al (2006) emphasize that it is extremely difficult to be the voice of a person who is a minor and has a disability and accurately predict and communicate what that person would actually desire. The purpose of the law is ensuring equal opportunity in education for individuals with disabilities. IDEA is composed of six guiding principles, four input principles and two accountability principles (Turnbull, 2009). The input principles include:

- 1) Zero reject, meaning that no student can have their right to education discontinued during disciplinary time,
- 2) Nondiscriminatory evaluation, meaning that evaluations must be unbiased and evaluate the whole child, not just cognitive functioning,
- 3) Appropriate education, meaning it must be individually tailored and offer a genuine opportunity for the student to benefit, and
- 4) Least Restrictive Environment, requiring a determination of what supports and services are needed to provide an appropriate education. The LRE requires that districts have a continuum of services offered.

The output principles include:

- 1) Procedural due process, and
- 2) Parent participation.

Regarding the least restrictive environment, districts must offer access to a continuum of services. IEP teams determine placement on the continuum after evaluating the unique individual learning needs of the student. The IEP team determines both what the child should be learning and in what environment the child should be learning. The intersection of the two is considered to be the least restrictive environment. While inclusion with general education curriculum and non-disabled peers is an ideal goal, the determination for placement and services must always be made based on the individual student's educational needs. Inclusion, according to Yell (Yell & Katsiyannis, 2003), "should be viewed as a continuum, with students regardless of disability, learning skills necessary to move closer to a lifetime of inclusion in all environments and social settings where individuals without disabilities learn, work, and play (p138)." Yell adds that skills learning must include individual learning supports and services, systematic instruction, structured learning environments, specialized curriculum content, a functional approach to behavior, and family involvement.

The law mandates minimal expectations of educating all students "appropriately." These laws, however, do not specifically define "appropriate" education as that which allows every student to reach his or her potential, as would be expected in general education. Educators must advocate for individuals with disabilities, working to ensure access to a free and appropriate education that provides opportunities for growth and reaching individual potential, even though that maximum potential may look quite different in some cases than it would for a nondisabled individual. Systems such as RtI (response to intervention) encourage general education teachers to do everything possible to meet the all learner's needs in order to give them access to the best possible education rather than the minimally accepted education required by law. As teachers, we have a moral obligation to offer the best to all of our students.

Art teachers generally have little to no involvement in special education referrals, evaluations, or placements. They may teach students with special needs in a general art class, with or without assistants, or they may teach a specialized art class. In my case, I teach at a specialized school, and do not play any role in the placement of the students. While I recognize that there are a widely recognized disproportionate number of students of color and students in poverty in special education, that particular issue is not a focal point for this study. I am also aware of the general preference for educating students with disabilities along side their nondisabled peers to the greatest extent possible, and by conducting this study in a self-contained setting, I am not advocating for or against such settings. Rather, I hope to determine how to provide arts programming for these students that best meets the intentions of the law and the needs of the individual students.

There are pros and cons of teaching and learning in this setting. These are extreme cases in which students were recommended for placement based on decisions made by their IEP teams, involving parents and home school districts. They are students for whom, as the law states, “the nature of the disability of the child is such that education in regular classes with the use of supplementary aids and services cannot be achieved satisfactorily (IDEA).” According to the District Director of Student Services where I work, most students come to the consortium as a result of social and behavioral issues that require services and supports beyond what the home district can offer (personal communication, 2014). In many cases, the student was either endangering others or self behaviorally; and in most cases, communication deficits have hindered learning and are at the root of behaviors. Communication skill development is a major goal of the consortium. In some cases, placement is made with us while the home district develops and puts into place an appropriate program, with a goal of the student returning to the

home school. In other cases, the student stays with us through our transition program until graduation. One disadvantage of this environment is the lack of non-disabled peers with whom to interact. On the other hand, an advantage is that friendships are developed here between children who face similar life struggles. We see graduates returning who have maintained friendships for decades. Another disadvantage that must be considered in this study is the tendency of pullout and self-contained programs to offer less of the general curriculum and to hold students to lower standards. The complementary advantage, however, is the much smaller class size, which allows for significantly greater individualization of instructional delivery. A concern of these settings is the extent to which funding is a cause of students needing to attend a separate school. It can be extremely costly to the school district to provide the necessary supports and services for a small number of students, and may in fact be less expensive to pay tuition and provide transportation to a consortium such as the one in this study. In any case, it must be emphasized that all students in this setting are here because their IEP team has determined it to be their least restrictive environment.

Teachers in all settings are required by law to provide access to the general education curriculum for all students. Wehmeyer (2006) suggests that the law has demanded “access” to the general education curriculum, but should focus on “progress in” the general curriculum (Wehmeyer, 2006). He defines general curriculum as that which everyone should know, rather than “general education curriculum” as opposed to “special education curriculum.” It can also be defined as the same curriculum provided to same-age nondisabled peers. Research has shown, according to Wehmeyer, that students with severe disabilities have access to the general curriculum when placed in general education classrooms, but not when placed in self-contained settings. Access, however, does not ensure progress. Furthermore, students with intellectual

disabilities are often limited to curricular materials for an age level significantly below that of the child. Both research and the law support curricular content that is age-appropriate, delivered with supports and technologies that foster both participation and progress. Modifications to and services and supports for the general curriculum must be specified in a student's IEP. IEP's must include a student's present level of performance (PLOP), which must include the affects of the child's disability on involvement and progress in the general curriculum.

2.2.2 Special education best practice and research-based interventions. In order to create a successful LRE while maintaining FAPE, instructional strategies may need to be modified or supplemented. RtI (Response to Intervention) is an educational framework that involves the use of research-based instructional strategies and interventions, monitoring of student progress, and the use of data to inform instructional decisions and prevent learning problems from developing (Howell, Patton, & Deiotte, 2008). Instructional styles vary from teacher to teacher. Learning needs vary from student to student. The goal of RtI is targeted instruction that meets each student's individual needs. While this is a strategy traditionally used in general education settings for students with high incidences disabilities such as specific learning disabilities, it is referred to in our district as a means to use tiered research-based interventions to improve participation and progress in curricular learning for all students.

Tier 1 of RtI begins with the premise that every student should have access to rigorous grade level curriculum and high-level instruction. Standards and learning targets are developed and individual needs to meet those targets are identified. Instructional strategies are chosen to help each student achieve reach the designated learning goals. Teachers must differentiate curriculum, scaffold content delivery, meet with students individually or in small groups; to facilitate learning in those whose needs aren't being met through general teaching strategies. It is

interesting to note, however, this author's remark that although all students have a right to equal access to high-level instruction, "rarely does special education assess the quality of teaching students receive" (Buffum, 2010).

Students who are unsuccessful in reaching learning targets within Tier 1 will need Tier 2 strategies implemented. Ongoing formative assessments are used to identify additional learning needs; tier 1 instructional strategies are compared and contrasted to determine which are most and least effective; and small group instruction is implemented, targeting skill deficits.

Tier 3, the final tier, is meant to be in addition to core instruction. Determination is made as to where tier 2 strategies were insufficient. Student learning needs are quantified and prioritized. This instruction is more intense with greater frequency and duration of specific instructional strategies to meet very specific learning needs.

In this setting, the specific learning strategies that are implemented may look different from those used with high-incidence disabilities in a general education classroom, but the intent remains the same: using a continuum of reflective instructional practices and increasingly focused research-based interventions and strategies to improve learning opportunities for students. The participants in this study are in what many onlookers would consider the most restrictive environment. That debate is a discussion for another time. I am not advocating for or against specialized schools, or for or against inclusion, but I do feel obligated to provide the least restrictive and most appropriate art experiences for these students in the setting and circumstances I am given. Learning just what that means is at the heart of this study.

2.2.3 Curriculum and instruction. Traditional teaching strategies such as large group lectures and demonstrations, textbook instruction and test-taking, and whole class question-answer sessions may not be effective learning environments for individuals with special needs.

When students are not meeting learning targets within the general curriculum and instruction, teachers must modify their teaching with research-based alternative teaching strategies.

As a teacher of general education art classes as well as adaptive arts, I have found that many strategies implemented for students with special needs, such as multimodal instruction, are in fact beneficial to most students, which is supported by research in disability studies and universal design (Walters, 2010). For instance, many students struggle with complex directions and tasks with multiple steps, or lack the attention span to focus on lengthy tasks or directives. These students may benefit from tasks being broken down into smaller steps (task analysis), and working in shorter durations with more frequent breaks (Kern, Childs, Dunlap, Clarke, & Falk, 1994). Furthermore, students learn and respond at greatly differing paces, especially in the case of students with intellectual disabilities and communication deficits. Slower paced learners may need more “wait time” for them to process and respond. This is often missing in regular classroom settings.

Students with intellectual disabilities often have difficulties advocating for themselves, and all too often as a result adults make decisions and do things for them, yet research has shown that with instruction and supports self-determination can be developed. Promotion of self-determination is an important goal of special education (Wehmeyer & Schalock, 2001). Wehmeyer describes self-determination as knowing how to choose, knowing what one wants and how to get it. Self-determined individuals, he states, “are actors in their own lives, rather than being acted upon” (Wehmeyer & Abery, 2013). The authors define characteristics of self-determined behavior as 1) acting autonomously, 2) self-regulation of behavior, 3) behavior initiated and responded to in an empowered manner, and 4) self-realization of the behavior. It is further suggested that educators should consider changing environments such that there is greater

opportunities for self-determination rather than focusing solely on skill development. In every case, as adults working with youth with limited self-determination, it is critical to remember that each is a unique individual with unique interests, motivations, and opinions. All of us as individuals have aspects of our lives over which wish to have greater or lesser control, dependent on the importance to us of those areas. This will be an important consideration in this particular study, as student resistance to choice-making opportunities could be for a variety of reasons. They may not understand the choices being offered, they may lack self-determination or communication skills, or they simply may not care about the choice being offered.

Components of self self-determination include self-knowledge, self-awareness, self-advocacy, risk-taking and safety skills, goal-setting and attainment skills, self-reflection skills, problem-solving skills, decision-making skills, and choice-making skills. Each of these components is also present within the common core standards for the arts. In fact, the arts are rich with opportunities for choice-making, problem-solving, and exploration of identity and culture (Halverson, 2013). Choice making will be a key part of data collection in this study.

Providing opportunities for choice has been shown to decrease negative behaviors and increase engagement in both general education and regular education settings (Dunlap et al., 1991). Opportunities for choice abound: choice of seating, choice of who to work with, choice of what to do first or next. In an arts classroom, this could be choice of activity, choice of tools or materials, choice of color or shape or pattern (Moes & Frea, 2000). Providing student choice as to when or where a specific task is completed has attained effective results (Bambara, Koger, Katzer & Davenport, 1995). Wehmeyer et al have suggested that choice-making opportunity and ability is perhaps the most critical component of self-determination as a foundation for positive life decisions for individuals with disabilities. Choice-making skills must be taught and

opportunities must be provided for practicing those skills in various settings and situations. It is commonly accepted in general education that students are more engaged in learning when instruction revolves around an area of interest for that particular student. This has been found to be the case in special education as well; with findings of fewer behavior problems when students with severe disabilities are involved in an activity that interests them (Kern, Childs, Dunlap, Clarke, & Falk, 1994). Without providing choices, teachers cannot assure that students are being given opportunities to integrate areas of personal interest into their learning.

Significant curricular lessons in the arts revolve around cultural awareness, meaning making, and making connections between self and the world. These are considered essential understandings in the arts. Yet, for students with severe disabilities, their knowledge of self and their surroundings may be vastly different than that of their peers. Their “world” may be much smaller. Teachers must meet them where they are at, while not restricting access to the curricular ideals their peers are receiving, sometimes a difficult task. Making connections is still important, but connections may initially need to be to things much closer to the individual’s immediate experiences. Curriculum needs to be personally relevant (Billingsley, 2013) to be meaningful.

Curriculum delivery may need modification. Scaffolding of content and spiraling the curriculum has been suggested for decades in general education and is advised for special educators as well (Billingsley, 2013). Bruner introduced the idea of the spiral curriculum, teaching the basics first, introducing specific cases that increase in complexity as learners are ready, and revisiting the basics often (Bruner, 1960). The spiral curriculum was well received by educators and is still foundational in many curricula. This structure of learning was believed to solve the ongoing concern of transfer. Furthermore, Bruner emphasized that by sequencing curriculum in this spiral fashion, any subject could be taught to virtually any age group (Jones,

2006). Curriculum content can also be organized thematically, using one theme (e.g. travel) across a variety of content areas and lessons, keeping background information consistent and predictable as standards are being taught (Billingsley, 2013). Choosing themes that relate to students interests and experiences helps to motivate students and keep them engaged.

In settings with students with severe disabilities, curriculum may need to be modified to meet the needs of nonverbal students, deaf students, blind students, students with physical handicaps, and students with severe behaviors. Students with intellectual disabilities may have difficulties communicating both what they know and what they don't understand (Billingsley, 2013). Visual schedules help those who do not respond to the written word or verbal directives (Hume, 2007). Word boards can also help those students communicate with the teacher and peers. Video modeling has been found to be helpful with students with autism (Qi & Lin, 2012). Having clear endings to tasks, for example a "finished" bin for finished work, a stated expectation of a specified number of attempts at something ("make 15 stamped shapes"), or clear steps on a visual task schedule that students can check off or move icons to a finished location. Individualized modifications that specifically meet learning needs help ensure access to the curriculum for all.

2.2.4 Behavior assessment and intervention. When students are confused or frustrated, negative behaviors can escalate and learning can be disrupted. In my experience, a common frustration expressed by general education teachers working with included special education students, and one of the most common barriers to inclusion, has been the difficulty in addressing and managing behaviors that interfere with learning. Seclusion and restraint laws have been created as a result of inappropriate physical restraints and removal of students from the learning environment to which they have rightful access. There is significant research on classroom

management and behavior modification, but when it comes to the significant challenges of students with more severe behavioral concerns, many teachers are inadequately trained.

Behaviors can and do prevent teachers from teaching and students from learning.

Systematic instruction, derived from the principles of ABA (applied behavior analysis) has been shown to be effective in both inclusion and special education settings, especially with students with developmental delays, ASD in particular (Billingsley, 2013). Some successful strategies derived from ABA include motivational systems based on positive rewards rather than negative consequences, task analysis for the development of academic skills, and general strategies such as prompting and priming. A significant component of ABA that has been found to be effective is antecedent interventions. An example would be the use of visual boundaries and visual schedules (Crosland, 2012). Opposite the often-used reactive classroom management style of providing consequences for negative behaviors, an antecedent intervention strategy promotes examining the relationship between environment and behaviors that occur in that environment. Changes are subsequently made in the environment, where the goal becomes changing the environment rather than the student. This is a healthier, and more preventive and proactive approach to managing behaviors. In an art room this may mean placing materials such that students have access to what they need without being overwhelmed, arranging the room and seating so students can navigate through without disrupting others and so that students have access to specialized environmental considerations like a quiet space or fewer visual distractions. Many students with IDD have difficulties with overstimulation, which can be even more intense in an art room where an excess of visual displays is common. The effects of sensory input should be considered in advance.

2.2.5 Best practice for physical and emotional safety. Students with severe disabilities often exhibit aggressive or self-harming behaviors, especially when confused or frustrated. Therefore, in an effort to ensure safety, classroom environments need to provide limited access to tools and materials that could be used in an unhealthy manner. Creating a structured environment, as described above is extremely beneficial to students with IDD, autism in particular (Stokes, 2004). Structuring the physical environment assists with predictability and limited visual stimulation. Labeling areas and needed materials, color coding objects and areas, and taping off visual boundaries can help students better navigate and predict a physical space. Proximity of students to each other and to exits can impact safety for all when one student becomes aggressive. Seating arrangements and room flow should be such that disruptions can be prevented or overcome quickly and safely. Furthermore, as was discussed earlier, it is best to use positive preventive measures than reactive consequences, so setting classrooms up for maximum predictability and safety also fosters a more positive emotional environment for students.

Physical elements in the classroom may need to be adapted for both safety and access. Tables, for example, may need to be adjusted for wheelchairs or raised to place work in a better line of vision. Chairs may need to be stabilized or anchored. Cleaners and chemicals need to be out of reach and inaccessible. Tools may need adapted handles or holders. All of us engage in activities more readily when it is comfortable to do so.

2.2.6 Structure and predictability. Structure and predictability of activities and physical space is greatly beneficial to all students, but to students with autism in particular (Stokes, 2004). Strategies such as assigned seats, consistent placement of tools and materials, visual labels, color-coded spaces and visual boundaries help students navigate and effectively use spaces and reduce negative behaviors. Students can be prepared beforehand as to what they will encounter

through priming, perhaps with techniques like video modeling. Systematic instruction, consistent class format, and the use of visual daily and in-task schedules are all considered antecedent interventions that are known to increase success rates with students with IDD (Crosland, 2012). Considerations of structure and predictability are central to this study of students with severe disabilities and the visual arts.

Having examined the relevant literature on special education law and best practice, let's next review the relevant literature in the visual arts. The following section will look more closely at visual arts education standards, creativity in the visual arts classroom, and arts learning and knowing beyond creativity.

2.3 The Visual Arts

The concept of the child as artist implies that every child is a potential creator endowed with those sensibilities that characterize the artist. It does not claim that every child will become an accomplished artist or produce masterpieces. The concept transcends the idea of art as a performance or a product and looks upon art as a way of living – the means of enjoying and enriching life through creative experience. The teacher who regards the child and art in this way possesses the key to every child's creative growth (D'Amico, 1942).

Teachers of the visual arts, whether teaching general education or special education students, have used the National and State Art Education Standards (1994) as a guide for curriculum development for two decades. In 2014, Arts Common Core Standards were refined and introduced as the most current standards offered, although as of this publication, they have not yet been adopted at the State level, and remain voluntary. The Common Core Visual Arts Standards break arts learning into four categories: *creating*, *presenting*, *responding*, and *connecting*, with increasing complexity correlating with stages of artistic and intellectual development throughout the K-12 grade level sequence. How does this correspond to arts learning for students with atypical development? This section will focus what the research says

about the overarching goals of visual arts and adaptive arts education, and what the brand new Arts Common Core standards say about *creating, presenting, responding and connecting* in the visual arts.

2.3.1 Common core arts standards and arts learning. Rubin's stages of artistic development have been useful in developing more sensory-rich art opportunities in a special needs art environment; and the National Visual Arts Standards have helped clarify developmental benchmarks for arts learning based on Lowenfeld's identified stages. Current standards, however, view arts learning more broadly, looking at commonalities in ways of thinking and knowing in the arts in general, including music, theater, dance, media arts and visual arts (Halverson & Sheridan, 2013). Halverson and Sheridan express that learning in the arts is distinctly different from learning in traditional academic areas like math and reading and science in that it involves making representational choices, communicating meaning, and examining identity and culture. They posit that the desired outcome across all of the arts domains is the production of and critical response to works of art, while developing the ability to express or communicate meaning through the exploration of a variety of materials and techniques.

The common core standards divide desired arts learning into four categories: creating, presenting, responding and connecting. For this study, I will be using standards spanning from pre-K through grade eight, as although the student participants range in age from 10-21, none has a present level of performance beyond the eighth grade level standards. Consideration must be given to what level of standards are taught in the art program in this study. "Age appropriate" is a rather complex concept when teaching children with significant cognitive disabilities. It would seem appropriate to present art skills at a level consistent with the student's presenting stage of artistic development, and pushing slight beyond that level as Vygotsky proposes in his learning

theory of the zone of proximal development (Vygotsky & Kozulin, 2011). IDEA states that all students have the right to an appropriate education, one that is individually tailored, with curriculum and instruction offering a genuine opportunity for the student to benefit (Turnbull, 2009). Age-based standards may not be appropriate. There must be a balance between offering curriculum that is rigorous enough to foster growth and adapted enough to allow access to and opportunity for genuine participation and learning. In terms of subject matter and curricular content, “age appropriate” is again complex. Arts education encourages connecting art making to student interests, yet what if a 15-year-old student is genuinely interested in Blues Clues or Elmo? This is an area that needs further research. Does allowing a student to make artistic choices that include age inappropriate material foster or inhibit participation in, learning about, or enjoyment of the arts?

Each of the four common core standards categories, creating, presenting, responding, and connecting, is subdivided into of a range of skills and conceptual understanding one would expect students to learn through participation in arts experiences. Each subcategory begins with a basic level standard expected at a preschool level, building in complexity through a post-secondary level. This would suggest that the authors and reviewers of the new standards agree that arts thinking and performing are developmental in nature. NCCAS notes that the research suggests a balance between structure and experimentation, and between learning tools and techniques and experimenting and risk-taking in order to find one’s own voice. Proposed learning builds in complexity as students mature and progress through artistic development stages.

2.3.1.1 Creating art. Within the “creating” category, for instance, students at the most basic level are expected to engage in self-directed play with materials, engage in focused mark

making and self-directed creative making, share art materials with others, and tell about art they create. By kindergarten they should be expected to engage in imaginative play (a perceived deficit for some students with IDD) and focused making of a work of art or design, discuss experiences to generate ideas for making art, create art that tells a story about a life experience, collaboratively engage in creative art making in response to a problem, and care for art materials and equipment. At the first grade level, imaginative play becomes more collaborative, idea development includes observing and investigating, and stories told through art become more developed. Collaboratively combine ideas to generate innovative ideas for creating art. By sixth grade, students should be able to experiment with unfamiliar materials and objects to generate new ideas and directions for art making, select and organize images and text to make clear and compelling presentations, formulate an aesthetic investigation of personally relevant content for creating art, persist through and learn from challenging artistic investigations throughout the art making process, and explain implications for the environment of conservation, care, and clean up of materials and equipment. At every level, the creating process involves exploration of tools and materials and the creation of a work of art. The more sophisticated cognitive processes involved in art making, like idea development, representing and conveying meaning, and the consideration of environmental or aesthetic implications are gradually added to the expectations as students mature developmentally. This progression of standards developments meshes neatly with normal child development. Problems arise, however, when this linear development system is implemented for individuals with developmental delays and disabilities, especially when it is based on chronological age. Some researchers argue with the belief that children progress through general stages of development in such a linear fashion (Rogoff, 2003). Furthermore,

such developmental theories assume that there is a unique desirable endpoint of mature development. This is clearly a view that would render individuals with disabilities inferior.

Writers of the common core standards recognize that in the early school years, experiences in the arts present students with opportunities to physically explore their world and place in it, and communicate their understandings of themselves and the world in ways they cannot yet express linguistically. For a child with severe developmental delays, this expectation may need to be addressed in a modified manner. For instance, students with severe IDD may be teenagers who still experience the arts primarily kinesthetically. Exploration of materials will be more sensory and kinesthetic, and their “world” may look much smaller and different than that of that same age nondisabled peers, affecting how and what they communicate through the art making process. In contrast, a young student with autism may have no linguistic ability to communicate about the world or his or her place in it, yet may be able to create detailed descriptive drawings of meaningful people, places, or experiences. The placing of such students on the standards continuum by age may be less appropriate than placement based on the current stage of artistic development, like Viktor Lowenfeld’s stages of artistic development (Lowenfeld, 1975), and then using the correlating standards.

NCCAS also makes recommendations for pedagogical approaches for teachers of the visual arts. In early childhood, it is suggested that teachers expose students to a wide range of materials, offer a visually and spatially rich environment that allow for student interaction with materials, look at art with students, and allow student drawings to stand alone without interpretation. It is also recommended at this age that teachers allow time for voluntary drawing, outside of “lessons,” and offer multiple opportunities at once so students can move from one to another when attention spans wane. Art experiences should be designed such that students have

routine opportunities for the exploration and creative manipulation of materials, not necessarily for the purpose of creating a finished product (NCCAS, 2013).

At the elementary level, art teachers should broaden the use of materials to include those that foster fine-motor skill development; involve art history, aesthetics and criticism; and integrate art into cross-disciplinary and real world contexts. Opportunities for observational drawing, imagination and critical reflection should also be incorporated.

From the middle school through post-secondary years, NCCAS recommends that teachers provide more opportunities for student choice, risk-taking, persistence, and time-management. Arts learning should be relevant and meaningful to students' lives, and should make connections to the world beyond the classroom. While artistic play and exploration is still important, students should also be encouraged to use work thematically and use visual metaphors in their work. Skills should be taught, but as a means to an end, guided by conceptual understandings. Art endeavors should require students to think and communicate. Assessment processes should be authentic and reflective, and should involve students, peers, and teacher.

2.3.1.2 Presenting art. The NCCAS defines “presenting” as interpreting and sharing artwork. Presenting encompasses three anchor standards: 1) analyzing, interpreting and selecting artwork for presentation, 2) developing and refining artistic work for presentation, and 3) conveying meaning through the presentation of artistic work. Looking more closely at the first anchor standard, at its most basic Pre-K level, students are asked to identify reasons for saving artifacts, objects, and artwork. By first grade, they should be able to compare objects and artifacts and explain why some are valued more than others. As students progress in the presenting category, they learn to categorize artwork based on a theme, investigate possibilities and limitations of spaces for exhibiting artwork, analyze how technologies have impacted the

preservation and presentation of artwork, compare and contrast how emerging technologies have impacted the ways in which we experience art, and develop criteria for evaluating artwork.

The second anchor presenting standard, developing and refining artwork for presentation, begins with identifying where art could be displayed or saved and the purpose of a portfolio or collection of artworks. By first grade, students should be able to ask and answer where, when, why, and how questions about the preparation, preservation, and presentation of art. As presentation learning progresses, students learn to distinguish between materials and techniques for preparing artwork, analyze considerations for presenting and protecting art in various locations, develop a logical argument for safe and effective use of materials and techniques for preparing and presenting materials, develop a plan for displaying works of art, and analyze and evaluate methods for preparing and presenting art.

The last anchor standard of presenting, conveying meaning through the presentation of artwork, begins with identifying where art is displayed both in and out of school. Kindergarteners should be able to describe what an art museum is and how it is different from other buildings. As learning progresses, students identify roles and responsibilities of people who work in and visit art museums, compare and contrast how art exhibited in different venues contributes to the community, identify and explain how and where different cultures record and illustrate stories and history of life through art, and cite evidence about how an exhibition presents an idea and provides information about a specific concept or topic.

2.3.1.3 Responding to art. NCCAS defines “responding” as perceiving, analyzing, and interpreting artworks. Responding encompasses the three anchor standards: 1) perceiving and analyzing artistic work, 2) interpreting intent and meaning in artistic work, and 3) applying criteria to evaluate artistic work. Perceiving and analyzing begins with the ability to recognize art

and distinguish between images and real objects. The next step is the ability to identify the uses of art in the student's environment and describe what images represent. By early elementary grades, students learn to describe works of art that illustrate daily life and speculate about processes an artist used to create the work of art. This age student should also be able to compare images that represent the same subject, categorize images based on expressive properties, and determine messages communicated by an image. As learning to respond develops, students can identify and analyze cultural associations suggested by visual imagery, compare and contrast their own interpretation of a work with another interpretation, interpret works of art that reveal the way people around the world live and what they value, and explain how an individual's aesthetic choices are influenced by culture and environment.

2.3.1.4 Connecting with art. NCCAS defines connecting as making personal and cultural meaning from art making and developing ideas and understandings of society, culture, and history through interaction with and analysis of art. The connecting category currently include two anchor standards: 1) synthesizing and relating personal experiences and knowledge to make art, and 2) relating artistic ideas and works with societal, cultural, and historical context to deepen understanding. Connecting begins with recognizing that people make art and being able to explore the world using descriptive and expressive words and art making. At the kindergarten level, students should be able to create art that tells a story about a life experience. During the early elementary years, students learn that people from different places and times have made art for different reasons, and they develop the ability to compare and contrast cultural uses of different artworks. In upper elementary grades, students learn to develop a work of art based on observational surroundings and create art that reflects community and cultural traditions. By the end of eight grade students should be able to identify how art can be used to inform or change an

individual's or society's beliefs, values or behaviors and how art reflects changing traditions and values. They should also be able to apply formal and conceptual vocabularies of art and design to see surroundings in new ways through art. Lastly, related to identity development, students learn through the arts to distinguish different ways art is used to represent, establish, reinforce, and reflect group identity; as well as using art to reflect on and reinforce positive aspects of group identity.

While skills specific to the arts are considered in the development of visual arts standards, educators across disciplines are expected to integrate twenty-first century thinking skills such as problem-solving and creative thinking. The next section will examine how creativity research impacts arts instruction.

2.3.2 Twenty-first century thinking: the arts and creativity. Creative thinking skills have moved to a place of prominence in educational outcomes. Such skills are part of higher order thinking and seem to be more in demand as accumulation of knowledge becomes less important. Facts and figures have become easily accessible in today's technological world, yet knowing how to interpret and apply them requires the ability to think critically and problem solve. Furthermore, the advancement of societal needs, such as products, services, and paradigms, demands seeing things in new ways, or creatively. The following sections will examine the role of creativity in arts education, as well as how creativity research may apply to students with severe disabilities.

2.3.2.1 A brief history of creativity in the arts classroom. According to Victor D'Amico (1953), influential art educator and author, art education should be about experience, not products That is a perspective that has cycled in and out of the field of art education for decades. In the early years of art education, the field emphasized the mastery of skills such as

representational drawings. For decades following, creativity was the focal point of art programs, to the extent of correlating good teaching practice with leaving students to create without teacher interference or guidance. Following Sputnik in the late 1950's, our nation's leaders began expressing concern about falling behind in math and science education, leading to a greater perceived importance of educating students in "core" areas. As a result, by the early 1980's art educators were advocating for a more "academic" approach through the implementation of Discipline-based Art Education. More emphasis was placed on reading, writing and speaking about art, developing measurable skills in art, and understanding culture in and through the arts. Creativity, however, has never vanished from art education goals. The biggest names in the field historically have always advocated for creativity as a goal of art education. Hurwitz and Day, authors of the widely used art education text books, *Children and Their Art*, felt that children's art should be personal expressions of their interaction with life, requiring freedom of thought, feeling and mode of expression (Day, 1982). They saw the arts as a perfect place for the development of creativity because of the value placed on divergent thinking, uniqueness, and individuality. Eliot Eisner, in his book, *Educating Artistic Vision*, defines artistic learning as the development of the ability to create art forms, the power of aesthetic perception, and the understanding of art as a cultural phenomenon (Eisner, 1972). In teaching art, Eisner advocated the use of *expressive objectives* to "encourage children to expand and explore their ideas, images, and feelings" through the use of skills learned via *instructional objectives*. Unlike many of his predecessors, Eisner did not believe that artistic abilities unfold naturally. He believed they should be taught, nurtured, encouraged, and directed, taught as a discipline with a structured curriculum. He stated that creative artwork doesn't happen in a vacuum. In this view, creativity

involves the perceptive ability to create meaning from visual experience and use that meaning to make decisions in one's own artwork.

2.3.2.2 *Current thoughts on creativity and arts learning.* More recently, in the midst of NCLB (No Child Left Behind legislation) (2001), standards-based education, and data-driven instruction, creativity remains in the spotlight as an in-demand 21st century skill. Teachers of the arts are still expected to teach art skills, but with far greater emphasis on students creating around “big ideas” about the world, expressing thoughts about the world around them, discovering their own identities and their place in the world, learning about and understanding culture via the arts, and advocating for themselves and for greater human causes through the arts. These are all aspects of arts learning that require creative thinking skills.

Creative thinking skills have become an expected outcome of arts learning. The arts have embraced creativity as both an essential part of the art making process and a goal of arts learning. Hurwitz and Day advocated for individual expression and interpretation in arts programs (Day, 1982). Creativity for them was about giving form to personal ideas and feelings. They viewed artistic expression as the unique expression of a person's interaction with life, stemming from opportunities for freedom of thought, feeling, and mode of expression.

Although creativity is something highly valued in our society, and often encouraged in classrooms across the country, a concrete definition is not necessarily easily agreed upon. Researchers have defined creativity from both an individualist approach and a sociocultural approach, little “c” and big “C” respectively (Sawyer, 2011). An individualist definition describes creativity as a new, original mental combination of existing thoughts and concepts, expressed in the world. A sociocultural definition, on the other hand, describes creativity as the creation of a product that is new, appropriate, useful, or valuable, as judged by a knowledgeable

social group. While big “C” creativity must be recognized as such by a broader group, little “c” creativity must only be new to the creator; for example, a child first figuring out how to make a tower out of stacked blocks, or making intentional crayon marks on a piece of paper (Sawyer, 2011). From a layman’s perspective, Oxford Dictionaries defines creativity as “the use of the imagination or original ideas, especially in the production of an artistic work.” Merriam-Webster defines it as “the ability or power to create.” Yet it would seem that the most basic level of the creativity process is choice making. In order to make anything creative, or new, at each stage of the creative process, the creator must be able to recognize options and choose between them.

In his study of artificial intelligence, author Andrzej M.J. Skulimowski (2011) claims that “creativity in decision-making can be explained within the framework of autonomous and free decisions, and that decision-making freedom is a necessary prerequisite for creativity (p. 190).” Skulimowski’s work is intriguing as it relates to this research study, because in order to develop artificial intelligence systems capable of creativity decision making, that process must be broken down, understood, and replicated from its most basic level to its most complex. His work is foundational for the development of artificial autonomous decision systems used in such things as search and rescue robots and intelligent recommenders used by online sellers such as airline ticketing websites. While this author is seeking methods of allowing artificial decision makers to work at the most complex level of open-ended criteria selection for creative decision-making, his work suggests that its simplest example would be choosing between limited optimal options. This could be an important consideration when examining creativity in students with severe cognitive disabilities. Special education best practice includes fostering the development of self-determination and autonomous individual behavior. Components of self-determination include decision-making skills and choice-making skills. Skulimowski adds, “the essence of autonomy

is the ability to make decisions,” (p. 192) and to be truly autonomous, one must also have the freedom to self select criteria. In the adaptive arts classroom, it would then necessarily be important to expose students to a variety of art materials, techniques and exemplars in order to build base knowledge and increase familiar options for choice making, as well as providing opportunities to make individual choices and express personal preferences.

2.3.2.3 Creativity and students with intellectual disabilities. Viktor Lowenfeld believed that creative growth in children begins as soon as they can make marks on a piece of paper and that all children are born creative. He defines creativity as “an independent and imaginative approach to the work of art” not necessarily related to skill (Lowenfeld, 1975). Some special education research has shown a correlation between creativity and affect regulation for students with intellectual disabilities (Butcher & Niec, 2005). Butcher and Niec view creativity as an adaptive resource because it involves the ability to problem solve, which is an essential component to solving interpersonal difficulties. They state that the ability to self-regulate affect, in other words monitor and adjust one’s own affective levels, assists individuals in using cognitive skills to solve problems. The deficit in creativity leads to difficulties seeing multiple perspectives and developing new ideas and multiple possible solutions to problems. More research needs to be done in this area, as the authors demonstrate correlation, but not causation. Is the deficit in creative thinking ability cause for lack of affect control or is lack of affect regulation interfering with creative thinking?

2.3.2.4 Creativity in the contemporary arts classroom. Creativity is a goal of art education, historically a primary goal. It is included in both national and state standards. It is included as one element of Harvard Project Zero’s habits of mind and a form of studio thinking (Gardner & Perkins, 1989; Hetland, 2007). The National Common Core Arts Standards

publication states, as an enduring understanding, that “creativity and innovative thinking are essential life skills that can be developed.” From a layman’s perspective, Merriam Webster dictionary defines creativity as:

1: marked by the ability or power to create, given to creating, the *creative* impulse,

2: having the quality of something created rather than imitated, imaginative, the *creative* arts

Although most arts endeavors are fueled by and noted for their creative elements, the arts do not have a sole claim on creativity. In fact, the bulk of research on creativity is found in the fields of engineering and learning sciences. Researchers across disciplinary fields have varied on how to define, measure and teach creativity, yet components of the creativity process have been identified. Creativity has been identified as an individual trait, where individuals work either work through an iterative design process or have “ah-ha” moments after engaging in deep cognitive exploration of a subject (being in the zone or “flow”) (Cziszentmyhali, 1990) and as distributed cognition, where individuals work collaboratively with others (Sawyer & DeZutter, 2009). Author Daniel Pink states that creativity thrives when there is intrinsic motivation, via autonomy (the urge to direct our own lives), mastery (the desire to get better at something that matters) and purpose (the desire to do something for a bigger purpose). His described attributes of creativity, which he says everyone has and can develop, as design, story, symphony, empathy, play, and meaning. These are concerns when considering creativity in students with intellectual disabilities, especially those who are nonverbal, as communication is key to conveying concepts such as story and meaning. Furthermore, it has been suggested that empathy and the ability to create meaning and play are lacking in this population (Baron-Cohen & Baron-Cohen, 1997). Yet people with disabilities can and do create art, and many can indeed create and convey

meaning and engage in pretend play. It just might look different than that of a typically developing peer.

By the above dictionary definitions, students are being creative when they create something that wasn't there before, although perhaps more by imitation than Daniel Pink would desire. Don't we all start creating by imitation? Art learning at a basic level often begins with imitation, even in fine arts schools. Show a child how to hold a crayon and scribble, and he joyfully imitates, beginning his journey through the stages of artistic development. Perhaps it would be helpful to examine creativity in developmental stages as we have the stages of artistic development. Making choices, for instance, would be a prerequisite for coming up with new ideas or creating novel products. This is the beginning of the creative process, creative thinking at its most basic level.

Visual arts programs, while typically *product*-oriented, teach and encourage creativity and artistic thinking as an essential part of the arts *process*. Harvard Project Zero researcher's developed Habits of Mind for the arts (Hetland, 2007). This type of "artistic thinking" would seem to apply to all of the arts, as Halverson and Sheridan (2013) have suggested; and it is integrated into the common core standards. Hetland et al advocate for the development of artistic habits of mind in their book Studio Thinking (Hetland, 2007). Their eight habits of mind include developing craft, engaging and persisting, envisioning, expressing, observing, reflecting, stretching and exploring, and understanding the art world. The authors state that the arts present another way of knowing about and interacting with the world. They firmly believe that a general arts education must be about much more than what students *do* in art class, like painting a picture or throwing a pot. Arts learning should be about how students learn to think in through the art making processes.

2.3.3 Arts learning and knowing beyond creativity. Halverson and Sheridan found that participation in the arts goes beyond crafting and creativity. They suggest that it also fosters development of both individual and collective identity, and enhances language development as individuals learn to communicate through their artwork and make discoveries about the world and their place in it through studying the artwork of others (Halverson, 2013). Perhaps this would suggest that nonverbal students could learn to use the arts as a means to communicate thoughts and preferences they are unable to express through conventional language. The arts can communicate in ways that words cannot, by triggering personal experiences and evoking a personal response to the work. “Knowing” in the arts seems to be different from knowing in other areas, as can be seen by watching YouTube clips of untrained autistic savants like Stephen Wiltshire at work effortlessly creating a drawing of aerial views of Rome after only one 45-minute helicopter ride over the city (Wiltshire). Howard Gardner’s research identifies multiple “ways of knowing” in an attempt to show that intelligence is multi-dimensional. He defines eight separate types of intelligence: musical - rhythmic, visual - spatial, verbal - linguistic, logical - mathematical, bodily - kinesthetic, interpersonal, intrapersonal, and naturalistic. As opposed to the belief that a single test can determine one’s “intelligence,” Gardner believes that there are multiple ways of knowing. (Gardner, 1999) Included in his theory is *visual-spatial intelligence*, the ability to perceive the visual world accurately and mentally visualize objects and spatial dimensions. This also includes creative spatial thinking, or the ability to modify or transform based on individual perceptions. This is an important perspective to consider when working with students who may seem “less intelligent” based solely on their ability to communicate and perform well on traditional forms of assessment. There are numerous examples of widely recognized accomplished artists with disabilities. Students may know more than they can

communicate knowing, or may see or know things in a different way. Furthermore, there is a phrase used in special education, “the least dangerous assumption,” (Billingsley, 2013) meaning that it is very dangerous (harmful to the student) to assume a student cannot understand when perhaps he can. It is far less harmful to teach and treat that student as if he does understand even though he may not. As teachers, we must retain high expectations for every student, and treat each one with respect and dignity, looking for their strengths and abilities rather than focusing on their disabilities.

Gardner gives validity and value to these different types of knowing, as opposed to a general intelligence (IQ) perspective (Gardner, 2011a). Artists and teachers of the arts have always known that arts thinking and knowing looks and feels different. They have recognized that some things can be expressed artistically better than they could be verbally or in writing. This type of thinking and knowing is highly valued in contemporary art education research and practice and is incorporated into the new Common Core Standards. Students with communication differences rely on not only alternate means of expressing themselves, but also alternates means of demonstrating what they know. Arts-based “knowing,” and its performance-based outward expression, can and should be a valued way to experience the world and express one’s inner self when there may be no words.

2.4 The Arts and Disability: Adaptive Art

The arts have long been viewed as a discipline in which differentiation of curriculum can take place very naturally. Students with disabilities have “mainstreamed” into arts classes for decades, and often continue to be included in the arts more readily and with less assistance than core classes. There seems to be a general perception in the schools that “everyone can do art.” Even Picasso once said, “Every child is an artist.” For the dedicated art teacher who wants to

foster measurable, visible, arts learning in all students, that perspective can pose a challenge when combined with a belief in holding all students accountable to grade level standards, resulting in frustration for teachers and students alike. Common Core Arts Standards are based on arts literacy goals; artistic habits of mind such as envisioning, expressing, and reflecting (Hetland, 2007); 21st century skills such as creative thinking and problem solving, and art skill and technique development. Benchmarks are based on stages of artistic development and developmental models of typically developing children. Arts Common Core Standards and teaching strategies align with these stages of artistic development, and this alignment affects curriculum and instruction decisions and student learning outcomes. It must be reiterated that these standards are based on the developmental stages of typically developing children. It becomes difficult then, as adaptive arts teachers for students with significant cognitive disabilities, to determine what is *appropriate* standards-based instruction. A student with significant cognitive disabilities may be an adolescent or young adult, yet demonstrate artistic functioning at the scribbling stage, or cognitive functioning at a one or two year level.

2.4.1 Adaptive arts resources. There are many resources available to parents and teachers that address teaching art to individuals with disabilities. Most, however, merely adapt higher level “projects” down to a level that would be more appropriate for pre-K to lower elementary level students without disabilities. Some also address the unique sensory and safety concerns that are present with this population, but do not address ways in which art teachers can provide rich art experiences to students with severe disabilities, whether taught in self-contained spaces or in inclusion settings. For example, it is important to consider the ingredients in art materials when used with students who are inclined to put everything in their mouths, or provide sensory exploration opportunities for students who thrive on a multisensory approach to

exploring materials. Yet, in order to create lessons that are rich in art education content, these sensory precautions and experiences need to be integrated with the conceptual goals of art education. In accordance with the IDEA and its subsequent mandates for LRE and a FAPE, it is expected that educators examine the common core standards, individual IEP goals, and research-based teaching and learning strategies and techniques, to develop appropriate individualized learning models on the arts education learning continuum rather than merely replacing the curriculum or watering it down. Teachers must know their students and how they each learn.

A few exceptionally helpful resources include Beverly Lovett Gerber's "Understanding Students with Autism Through Art," in which she advocates for the use of task analysis, step-by-step instruction, and the use of visual schedules (Levett-Gerber, 2010), and "Reaching and Teaching Students with Special Needs Through Art" (Levett-Gerber, 2006). Additionally, articles in the recent publication of *Art Education* (March, 2015), entitled "Designing Interventions," are some of the most helpful and pragmatic adaptive arts resources to date. The authors present their perspectives on the arts and disability, demonstrating the relevancy and importance of such studies in the field of art education. Alice Wexler's book, *Art and Disability*, is one of the best resources I have found for adaptive arts at the level I teach, promoting choice making, sensory opportunities, process over product, and exploration of materials preferences (Wexler, 2009). Wexler states that a critical piece of development of "self" is awareness of preferences and priorities, which is in line with research on self-determination. Making decisions is an integral part of art making. Each choice leads to more choices and a developing schema. Wexler states, "materials teach lessons about cause and effect in concrete and unmistakable ways (p. 23)." She believes that arts lessons for children with disabilities must be more focused on materials, process, sensory motivation and self-reflection; adding that "studio projects that

emphasize the bodily processes unique to the individual rather than art skills and techniques as an external body of knowledge, will make vital connections where there were none before, and more than likely produce the desired aesthetic outcomes as a result.”

The John F. Kennedy Center for the Performing Arts in cooperation with VSA has a program entitled *The Intersection of Arts Education and Special Education: Exemplary Programs* (Malley, 2012). Articles on their website by authors/speakers represented in that program are also current and exceptional; in particular, Susan Loesl’s article *The Adaptive Arts Specialist: an Integral Part of a Student’s Access to Art* (Loesl, 2012) and Alice Wexler’s *Art, Developmental Disability and Self-representation* (Wexler, 2012). Loesl (2012) advocates for adaptive arts specialists, and differentiates between art therapy, which is intended to be more therapeutic and diagnostic, and adaptive arts, which blend art therapy and art education techniques in a environment allowing for exploration of self and tools and materials. Manipulation of materials develops motor skills and fosters individual creativity, creating from the heart of the individual. Adaptive arts allow students to express differently, often with a sole focus on process versus product, for instance when a student becomes thoroughly engrossed in pouring an entire bottle of glue onto a piece of paper and watching it ooze across the sheet!

2.4.2 Sensory integration. From the very beginning stages of development, multiple senses are involved in learning. Infants learn recognition by the smells of familiar people, toddlers sample the world by putting everything in their mouths, and little ones imitate what they see and hear. Research has shown that learning improves when it is multisensory (Shams & Seitz, 2008), yet there is a high occurrence of Sensory Processing Dysfunction (SPD) in children with severe Intellectual Development Disorders (IDD) (Engel-Yeger, Hardal-Nasser, & Gal, 2011). Some of these children are sensory seekers; some are sensory avoiders (Kientz & Dunn,

1997). Visual arts classrooms are extremely sensory rich, so teachers must consider both positive sensory integration as well as possible sensory sensitivities. Art materials themselves may pose sensory problems. Part of exploring art materials is using multiple senses. Some students, those with SPD in particular, may want smell or taste materials in order to learn about them in a non-linguistic manner. While smelling or tasting some materials is harmless, it can be outright dangerous with other materials. Both tools and materials must be considered for choking hazards, ingestion allergies or reactions. Students with IDD may also be ultrasensitive to light and/or noise. Sounds not audible to the normal ear, like fluorescent lights, can be extremely bothersome to an individual with SPD. Squeaky chairs or just plain too much verbal interaction can interfere with positive participation and learning. It is often recommended in special education setting that teachers reduce visual and auditory stimulation, especially for students with autism and SPD.

2.4.3 Creating art. *Creating* in the visual arts means physically making an artwork to be experienced visually. My immediate reaction to that concept is, what about blind students? They cannot experience an artwork visually like a seeing person could, but they can experience the creation of a visual work of art through an exploration of the materials via other senses. Part of creating in art is exploring and experimenting with materials. All students can be provided access to a variety of materials they can explore through various senses. For example, a blind student may be given options like clay, or sand, or textured paints. A student with limited vision may be given high contrast materials. A student with sensory sensitivity to messy materials like clay may be given alternatives like model magic. Teachers must find ways to provide access, instruction, and support for the effective use of tools and materials.

2.4.4 Tool and material usage. All visual arts creating at some point involves material and tool usage. For students with significant disabilities, basic tools and materials present limitations and obstacles that need to be overcome. Sensory sensitivities, physical mobility difficulties, limited gross or fine motor skills, behavioral disorders, and cognitive delays all greatly impact a student's ability to understand and engage in the art-making process. Tools may need to be adapted, materials may need to be carefully selected and presented in an alternative fashion to avoid unsafe use. Specific instruction on how to use tools and materials, generally unnecessary in a regular art classroom, is important. Alternative forms of instruction may be necessary, such as visual rather than verbal, video modeling, simplified steps, or visual task schedules. Without access to the use of basic tools and materials, students will be unable to create.

2.4.5 Communication. Self-determination research emphasizes the importance of students learning to express opinions and preferences and advocate for themselves. Two of the four categories of Common Core Arts learning are *presenting* and *responding*. Full participation requires a means to communicate. For students who are nonverbal, this is an obstacle that must be overcome. The use of visual icons and schedules or assistive technologies may help. For students with very limited motor capacity, carefully questioning with eye gaze responses may be helpful. Wait time for answers is crucial with students with IDD. In any case, modes of communication must be considered as part of a student's ability to fully access arts learning. Adaptive arts lessons need to recognize and provide for communication differences.

2.5 Grounded Theory Literature Review Disclaimer

As this was a grounded theory study, some would suggest that review of the literature should occur after data collection and analysis so as not to bias theory development. Yet because

I am in the role of both teacher and researcher, these existing theories in the fields of special education, art education, and the learning sciences were already familiar, and had to be taken into consideration, both in terms of what is already known in this area, and in terms of how my role as a participant-researcher is impacted by my prior knowledge and experience in these fields. This prior knowledge of the literature is in part what inspired this research study to begin with, and furthermore made it more meaningful.

2.6 Literature Review Summary

If we as teachers treat students as distinct individuals, focusing on what students *can* do with a philosophy that *all* students can learn, it should not be assumed that any limitation based upon a perceived deficit is a foregone conclusion. For example, although students with some forms of cognitive disabilities display a perceived creativity deficit, research has shown that children with some disabilities, CP in particular, have imagination and creativity equivalent to their non-disabled peers (Pfeifer, Pacciullo, Santos, Santos, & Stagnitti, 2011). Furthermore, in my own work with students with autism, I have witnessed pretend play in action, both similar to that of typically developing youth and very different. It has also been suggested that many children with autism may have been misdiagnosed with cognitive disabilities, when in actuality their disability is being nonverbal and non-auditory thinkers in a verbal and auditory world (Wexler, 2015). These types of contradictions make instructional decisions for arts teachers working with students with severe disabilities very difficult, yet critically important, especially with so few good resources available connecting the most severe levels of special education with arts programming.

Programs such as The John F. Kennedy Center for the Performing Arts' "Intersections: Arts and Special Education," have begun to bring researchers and teachers together to explore

this much needed area of educational research (Malley, 2012). Their work is exceedingly important as budgets in many school districts decrease and arts programming is cut. Teachers of the arts often have caseloads of hundreds of students, including many with special needs. Adaptive arts specialist, Susan Loesl, states that for students with disabilities, art-making experiences may be as beneficial if not more so than for their peers (Loesl, 2012), yet without resources for teachers and adequate programming for all ability levels, students with disabilities are short changed. In particular, more research is needed in the area of how to best provide access to participation and learning in the arts for students with disabilities. This is exemplified by the subject matter of the most recent publication of *Art Education* (March 2015), “Designing Interventions,” where pragmatic perspectives on the arts and disability are shared with teachers who desperately need such guidance. This current research study complements the Designing Interventions authors’ perspectives, and provides a specific example of how such accommodations are being used and received by students, staff and parents.

2.7 What the Literature Leaves Out

“There exists a small body of research literature on understanding how chronic illness and severe disabilities are related to equity and service delivery.” (Strax, Strax, & Cooper, 2012) This would be the case in adequately serving individuals with disabilities in the arts. Often, students with special needs are pulled out entirely from arts programming. In other instances they are included in regular classrooms with teachers who are not prepared to adapt lessons to best meet their needs. Greater inclusion has become more desirable in the field of special education and advocacy, yet far more research needs to be conducted in order to provide resources for teachers thrown into teaching students with such diverse needs and abilities with little to no training. Law requires a free and appropriate public education (FAPE) in the least

restrictive environment (LRE). General education includes arts opportunities, yet many students with special needs are excluded from the arts, often with the reasoning of “it’s not in their IEP.” Why isn’t it? Who decided that art wouldn’t be appropriate for those students, and why? Art education standards propose learning expectations by grade level for all students. Learning sciences explain the typical developmental stages of artistic learning. Although there is ample research in Art Education, Special Education, and the Learning Sciences, there is a gap in research that connects the three. Where do current theories in all three areas intersect, and what does that intersection suggest about curriculum design, teaching, and learning in a visual arts class for students with moderate to severe cognitive disabilities? When students with severe disabilities are placed in arts learning environments and arts curriculum is presented, how do we know what these students are actually learning? How do we know what they are missing? And most importantly, how do we learn to bridge the gap?

This research study examines what students with severe disabilities learn in this particular adaptive visual arts program in a specialized school for students with severe disabilities. The intent is to capture the essence of observable and perceived teaching and learning practices that foster or inhibit learning in this arts environment. The data is not all-inclusive of everything students learn or are introduced to in their arts programming, nor is it necessarily prescriptive. It is a starting point for making arts learning both accessible and meaningful for this population.

Chapter 3 Methodology

The inspiration for this study was the desire as both a researcher and a teacher to better understand arts learning in the setting in which I currently work, with the hopes of guiding further visual arts programming for students with severe disabilities. Answers to the following research questions were sought:

- What attributes of classroom context foster or inhibit learning in this setting?
- What do students learn in this self-contained special education art class?
- What does student learning in this setting suggest about the balance between predictable structure and open-ended opportunities for creativity development?

A grounded theory inspired methodology was used as the foundation for this qualitative research study. The following section will provide background information on the research approach.

3.1 Qualitative Research Approach

This is a grounded theory inspired research study, meaning that it primarily adheres to the constructivist grounded theory methods suggested by author Kathy Charmaz, in *Constructing Grounded Theory* (Charmaz, 2006). Grounded theory was chosen as the methodological approach to this study because I was not beginning with a hypothesis or intervention to be tested or proven, rather I was looking to thoroughly examine a program by simultaneously collecting and analyzing data, in order to develop a theory about what is happening in this particular learning environment. I had considered using case study methodology, but determined that I was seeking more than description; I hoped to develop theory about perception of learning in this particular environment that could guide future teaching and learning in this setting and in similar settings. This required grounded theory methods, such as coding large amounts of data from various sources, constant comparative analysis and theoretical sampling. Triangulation was also

important, in that I needed to be able to view student learning from the perspective of others, since I was both the researcher and the teacher. Playing the role of both participant and researcher was both an advantage in terms of theoretical sensitivity and gaining access and trust, and a disadvantage in terms of potential bias and the difficulties of backing away from the data and remaining as objective as possible. This will be discussed in more depth later.

3.2 Grounded Theory

Grounded theory originated in the 1960's, developed by Barney Glaser and Anselm Strauss in an attempt to create a methodological approach that emphasized the development of theory based on the social sciences rather than research for the purpose of verifying current theory. Rather than using research to prove or disprove an existing theory or hypothesis, they were seeking a means of constructing theory that was grounded in qualitative research, and developed based on a systematic analysis of the data (Kenny, 2014). The Glaser and Strauss method used in its purist form, or classic grounded theory, requires that the researcher have no preconceived notions of the outcome of the research, approaching the study inductively in order to uncover what is occurring based on data from the perspectives and actions of the participants. When Strauss joined forces with Juliet Corbin, they refined the data analysis process, suggesting the importance of a precise means of rigorous coding and a delay of reviewing literature until after data is collected and analyzed so as to remain unbiased and open-minded (Strauss & Corbin, 1990). In his article "Stop. Write! Writing Grounded Theory," Glaser states that producing grounded theory involves going into the field and open coding, conceptualizing data using constant comparison from which core categories are discovered and selective coding begins, employing theoretical sampling to see if the core categories and selective coding are working, and memo writing throughout continued data collection and coding. He suggests that at

some point, no more themes or concepts will emerge in the data, at which point saturation has been reached. It is at this time that concepts and their properties should be memoed, and those memos analyzed and sorted in order to bring concepts and themes together into emerging theory. In classic grounded theory studies, data methodologically gets collected, coded, analyzed, compared, and organized in an iterative fashion, narrowing themes and concepts into a developing theory. It is an elaborate study of a lot of data, whereby the data, analysis, and theory become inseparable.

3.2.1 Constructivist grounded theory. Kathy Charmaz, a student of Barney Glaser, offers a slightly different approach to grounded theory, often referred to as *constructivist grounded theory*. Charmaz's constructivist grounded theory methods rest on slightly less rigid data analysis procedures, and the concept that theory is not really discovered, rather it is actively constructed and refined through the researchers intimate interactions with the research and its participants (Kenny, 2014). Charmaz's constructivist approach is more perhaps more descriptive, much to the dissatisfaction of Glaser, as seen in his 2012 publication responding to her book *Constructing Grounded Theory* (Glaser, 2012). Glaser (2012) it seems, posits that while "all is data," the data, including the concrete collected data itself, the meanings of that data, the perspectives of the data sources, and researcher interpretations of the data, must come together to determine the theory development, free from researcher bias and preconceived notions of meaning or theory. He emphasizes that an essential part of data collection is determining what the data means and why it matters, versus merely describing it, as he seems to suggest is Charmaz's intent. In support of Charmaz, Antony Bryant refutes this premise, noting the importance and validity of the researchers inextricable connection to the research and its meanings (Bryant, 2007). He explains that her modifications of classic grounded theory promote

the development of theory that closely conforms to the particular people and place being studied, resulting in theory that is more easily understood and applied in setting. He further notes that the value of the end product of such research is dependent upon the researcher's deep understanding of the phenomena being studied (Turner, 1983 in Bryant, 2007). Charmaz recognizes that the researcher's prior knowledge, perspectives, and interactions with all aspects of the research, affect both data collection and analysis. Data and their meanings are co-constructed by researchers and participants. Bias is inescapable, hence should be accounted for (Charmaz, 2006; Thornberg, 2012). The observer/researcher is not neutral, and in fact, cannot be completely neutral when embedded in the research site and the life or work of the participants. This pragmatic view of grounded theory is appropriate for this study, as my role as teacher and my intimate relationship with the setting and participants, are unavoidably intertwined with my role as researcher. My understanding of teaching and learning in this setting guides my research, and my research guides teaching and learning.

Constructivist grounded theory remains faithful to the extensive use of coding methods such as initial (open) coding, focused (substantive or theoretical) coding, and axial coding; as well as memoing, theoretical sampling, constant comparison, saturation, and sorting; while understanding that prior relationships with the participants and prior knowledge of the participants and setting as well as related literature, will influence meanings derived from the data at each stage. Charmaz therefore, does not believe that review of the literature should be delayed until the end of the study, as classic grounded theorists do (Charmaz, 2006). Charmaz, in fact, suggests that reviewing the literature prior to the study can help set the stage for the study, guide the researcher's process of inquiry, and reveal gaps in extant knowledge that may help to

give purpose to your study and clarification of its contribution, so long as it is not allowed to stifle creative thinking about the data.

3.3 Procedure

It is important to begin this section by discussing my prior knowledge of theory, as well as influential experience in this environment. As an art teacher of 25 plus years, I bring with me into this study both a theoretical and practical understanding of arts education, as can be seen in chapter two. While I do not subscribe fully to any one theory of art education, and it was not the goal of this study to prove or disprove any of them, all have influenced my teaching and my understanding of student learning in some manner. Furthermore, my participation in this setting has been heavily influenced by that background knowledge, which in many ways led me to the recognition that this study was important, and guided my paths of inquiry. I knew that as an accomplished art teacher, I could teach a traditional arts class to traditional arts students, and do it well. This population, however, did not respond to all that I knew from theory and practice about art education. As an accomplished teacher, I did what good teachers do; I collected data, analyzed data, constantly compared data and notes, tried new things, collected more data, etc. Sounds like a grounded theory study? It's what good teachers do on a regular basis. I tried assessing student arts learning based on traditional skills and benchmarks. It didn't work. I tried teaching art in a typical art education manner. It didn't work. I wasn't "connecting" with students; participation didn't seem meaningful and not much measurable learning about art was taking place. I integrated art therapy and special education theories, and participation seemed to increase and be more positive. I learned more about school-wide and individual student IEP goals, and began focusing more on the social, communication, behavior, and life skills needs that brought these students to our program in the first place. Students seemed to be growing in and

through their participation in the arts. I needed to better understand more specifically what fosters learning in this environment and what hinders learning; what is meaningful arts participation for these students and what is not. Although it was not officially part of this study, I feel that these aspects of my involvement in this program must be mentioned; they have guided where this study began. Although those three and a half years were not officially part of this study, they were years of informal “data collection” and iterative comparative analyses that informed the starting point for data collection in this study. It would be misleading to leave that out. Had it not been for the iterative data collection and analysis, and subsequent research and trial and error, the basis questions of how special education theory, learning sciences theory, and art education theory intersect and contradict, wouldn’t have come to be.

3.3.1 Data collection. As this was a constructivist grounded theory study, data collection in some form was happening throughout the study. Data collection and analysis procedures were iterative and interwoven, thereby making the production of a linear, chronological description of the process nearly impossible. Therefore, I have chosen to begin with a chronological overview of data collection, and then categorize the descriptions of procedure by data analysis methods.

Formal data collection took place over a nine-week period. However, initial data was collected for three weeks, on Daily Data sheets (see appendix) for several students as a trial data collection procedure and a chance to analyze a small sample and adjust data collection as necessary. Theoretical sampling and constant comparison were used to determine that the paper and pencil forms were too labor intensive to collect meaningful data as a researcher while simultaneously performs the duties required as a teacher. Furthermore, some categories did not seem to be useful and needed to be refined, for example, there was one category for finding work area and finding needed tools and materials. Initial data showed that most students could find

their work area, but few could independently find necessary tools and materials, so these skills were split into two separate scores. Tool and material usage was combined with fine motor skills; they were split into two as well. The categories of choice making and communication were refined and separated into three categories instead of two, such that communication would be scored independently of choice making, and choice making would be scored separately for limited and open-ended choice making. Sections were added for collecting data on sensory tolerance and meaning making. After advice from a colleague, I decided to create an excel spreadsheet with the refined data categories that seemed most important from the theoretical sampling process. Two columns were also added for inputting images of student work as artifacts. The resulting spreadsheet allowed me to quickly evaluate key participatory data with a score and add brief descriptions after class, and is the form used to collect Daily Student Data for the remaining 6 weeks of formal data collection, which became the second phase of data collection.

This second iteration of data collection took place during each of twelve art sessions, spanning the remaining six-week time period. I input scores and memos in each data category for each student, often with input from staff working directly with students. Pictures of student artwork were also added to the spreadsheet as artifacts. It is important to note that any video recording and still shots of students and their work are used in this study because they are used on a regular basis as part of my teaching practice. They are not an intervention. Photo and video data are part of the data that I normally collect as a way to document student participation, skill development, and interests, and show both students and parents what student art processes look like. Video clips also help me to reflect on my own teaching as well as student learning.

The third segment of data collection was the surveying of parents and staff regarding their perspective on student learning and involvement in this art program. This was an essential data collection component for triangulation. Surveys were given to staff and parents and returned to me in sealed envelopes and assent was included in student consent forms. (See appendix)

Some forms of data were collected on an on going basis and were not partial to any one stage. Lesson plans and lesson plan notes, for example, are part of the regular process of teaching, yet they give insight into what is being taught, why it was chosen as a lesson, and the desired student outcomes. Teacher notes shed light on the teacher's perspective of what worked, what didn't work, and what changes could be made. Memos were also taken throughout all phases after the initial three-week data collection trial period.

3.4 Methods

3.4.1 Site selection. Initially, I had planned on conducting a multiple case study of the arts program at the school in which I teach, seeking deep descriptions of the arts participation of a few students within the program, in order to better understand teaching and learning in this setting. Robert stake suggests that researchers may choose specific cases within case studies or they may have been more or less decided for them. The subsequent case studies are often subjective and dependent upon a researchers prior knowledge and experience (Stake, 2006). A case study approach seemed fitting in this instance, as the site and participants were somewhat predetermined, since this is the setting in which I work with students with disabilities, and therefore the program I wish to better understand. However, as mentioned above, I determined that I was seeking more theory than description, so although site selection remained the same, grounded theory became the primary inspiration for study methodology.

The study took place within my own art classroom at a self-contained school consortium for 10-21 year-old students with significant disabilities. Students attending this school originate from 17 area school districts, as this setting has been designated as their least restrictive environment by their IEP teams. Major goals of this setting are the removal of environmental barriers such as sensory stimuli, the management of interfering behaviors, and development of social and communication skills that will allow the students to participate more fully in general education settings and society in general. Arts programming at this school is relatively new, as it was added in 2010, with virtually no curricular guidance. As a teacher, I have had to “learn on the job” how to best provide arts programming for these students. It has been a challenging endeavor, hence the motivation for this study. The site was chosen for purposes of accessibility, but also because of the genuine interest I have in studying what a visual arts program should like for this population, a population often segregated out of arts programming, and left out of much of the research in the arts. My experience in this setting has challenged what I know about teaching and learning, such as aged-based educational benchmarks, and has made apparent the gaps in research and contradictions between instructional objectives and strategies in art education and special education, such as balancing structure and open-endedness.

While it is not always desirable to research in a setting within which the researcher is embedded, in this case it can be considered an advantage. Theoretical sensitivity is an important component of grounded theory research (Suddaby, 2006). The thoroughness and accuracy of both data collection and analysis is impacted by the researchers sensitivity to the subtleties of the environment (Strauss & Corbin, 1990), which in this case takes years to understand. Students with significant disabilities and limited communication often require extensive time and interaction to become comfortable with and trust new people. It took me as long as two years to

reach the point where I felt there was a two-way trusting teacher/student relationship with some of these students. It would be very difficult for someone to come in from the outside and conduct research with these students. I also understand background information about the school, the students, the staff, and the community that would be harder to access from the outside.

Furthermore, I have a genuine interest and desire to find answers. I want to learn how to best provide an arts program that meets the needs of this population while also ensuring access for these students to the free and appropriate public education (FAPE) to which they are entitled. I hope that the connections found in this study between arts learning, special education, and the learning sciences will be applicable to inclusive arts learning environments as well.

3.4.2 Participants. Participant selection was based on being a current student in my art classes as well as having the capacity to express personal preferences about art processes, materials, and products. While some students were able to express such preferences verbally, others use signing, pointing, visual icons or word boards, or assistive technologies such as a Dynavox. 36 students were invited to participate pending parental consent. Parents of two students declined participation in the study, but remained class students with no consequence for not participating. The remaining 34 student participants gave assent where capable and had parental consent as well. All participants participated in their normal art class activities. In other words, class proceeded as normal. Risk of participation was extremely minimal. None of these students receive grades in my class, so there was no concern about participation affecting treatment or biasing grades. The art processes and products of 34 students were observed and documented. Each of the student participants is a student with significant disabilities, defined as having moderate to profound levels of intellectual impairment or autism, and moderate to severe difficulties communicating personal needs to others and/or regulating affect and behavior. Some

of these students may have physical disabilities as well. For each student a staff member working as a teaching assistant with that particular student was also asked to participate by signing consent forms acknowledging confidentiality and minimal risk.

3.4.3 Data Collection Tools. Multiple forms of data collection were used and came from a variety of sources in order to gain multiple perspectives on student learning, hence triangulating the data. Data collection tools included staff questionnaires, parent questionnaires, teacher/researcher memos and lesson plans, student artwork, and a daily student data scoring spreadsheet, which incorporated teacher comments on classroom context and student participation. Although various types of data were collected, they were all seeking basically the same kind of data, but from different perspectives, and meant to be analyzed in the same manner.

	Data Source
Question 1 What attributes of classroom context foster or inhibit learning in this setting?	Teacher notes and memos Staff and Parent Questionnaires
Question 2 What do students learn in this particular self-contained special education art class?	Student Artwork Teacher notes and memos Staff and Parent Questionnaire Daily Student Data
Question 3 What does student learning in this setting suggest about the balance between predictable structure and open-ended opportunities for creativity development?	Student Artwork Teacher notes and Memos Staff and Parent Questionnaires Daily Student Data

3.4.3.1 Staff questionnaires. For each participating student, a staff member who works regularly with that student, and who gave consent, filled out a questionnaire answering the following questions:

1. How long have you worked with this student?
2. In what capacity have you worked with this student?
3. What indicators have you seen regarding this student's interest in art making
4. What changes, if any have you seen?
5. What factors about art class seem to make a difference in this student's willingness to participate in art (positive and/or negative)? For example, room arrangement, noise levels, music, art materials, format and structure of instruction, amount of choice offered, etc.
6. What seems to help this student learn in this environment?
7. What skills have you seen this student develop in this environment?

15 staff members completed a total of 34 completed staff questionnaires. All answers were coded and input into data analysis software, MAXQDA, which will be described in a later section.

3.4.3.2 Parent questionnaires. Similarly, for each participating student, a parent of that student, who gave consent, filled out a questionnaire answering the following questions:

1. Does you son/daughter enjoy art materials or art activities at home?
2. If so, what types of art activities or materials?
3. In your opinion, does your son/daughter enjoy art class at school?
4. Have you seen any changes since he/she began participating in art class at school?
5. What seems to make a difference in this student's willingness to participate in art activities(positive and/or negative)? (For example, art materials, work environment, sensory involvement, amount of choice offered, etc.)
6. What seems to help this student learn in an art-making environment?
7. What skills have you seen this student develop through art class or working with art materials?

31 out of the 34 participating students had a parent complete a questionnaire about their art participation. All parent answers were also coded and input into MAXQDA.

3.4.3.3 Teacher journaling, memos and lesson plans. Notes were included on the daily data excel spreadsheet to add description to participant scores in some categories. These notes were coded and added as data segments to MAXQDA. Memos were also taken regarding contextual factors such as physical work space layout and changes, tool and material accessibility, visual and auditory stimuli, physical and visual boundaries, adaptive tools and materials; instructional context factors such as visual supports for instructional communication, sensory integration components such as experimentation with a variety of sensory/tactile materials, and the use of sequenced art tasks versus more free exploration of materials. There

were a total of 21 teacher/researcher memos, each about a paragraph in length, recorded at the end of the day at least twice per week. Teacher notes were also kept regarding lesson plan development and delivery of instruction. Included in these notes was rationale for choosing particular lessons or instructional methods, as well as thoughts about their effectiveness. Other interactional factors, including proximity of students to each other and to materials, movement required to access tools and materials, were captured through teacher notes as well. Analytic memos were also used, with a total of only 15 memos, although these are lengthier reflections.

Many of the notes and memos refer to assistive technologies. PL 108-364, The Assistive Technology Law of 1998 (amended in 2004) defines an assistive technology device as “any item, piece of equipment or product system whether acquired commercially off the shelf, modified, or customized that is used to increase, maintain to improve functional capabilities of individuals with disabilities.” All students in these classes use various forms of supports, including visual schedules and choice boards, word boards, voice output devices, adaptive grips and slant boards, incentive systems. Use of supports was documented in my teacher notes and referenced in the scored category of communication.

3.4.3.4 Student artwork. Artifacts related to the production of student artwork were collected on an ongoing basis, and are part of my regular teaching practice. They consist of student work examples, tools including assistive technologies, and images of students participating and their produced products. These artifacts serve as visual evidence of what students do and learn in this environment, and provide data for assessing learning and instruction and guiding future teaching and learning. Images taken were inserted into the Daily Student Data spreadsheet, so they could be easily associated with the correct student and lesson. Each student participant produced between two and four pieces of art during art classes over the nine-week

period, spanning the beginning of data collection and the end of the school year. Some students produced more during their noon hour free art option as well. Some student artwork was photographed when possible in order to use as artifacts for later data analysis, while all artwork produced was analyzed as data for the daily student data spreadsheet.

3.4.3.5 Student daily data. The daily student data format was an excel spreadsheet, with scoring categories evolving from the school's own school-wide assessment referred to as the IMAPF, or fully named the Individual Measure of Academic and Functional Performance. (see excerpt in appendix) All of the students in this school qualify for alternate assessment, yet for many even the alternate assessment seemed to be too advanced to capture growth at their present level of performance (PLOP) in more basic skills, and too gross to capture the smaller growth intervals that occur more slowly over greater time periods with these students. The IMAFP assessment was developed specifically for this school population, and includes measures of both academic (such as literacy and numeracy) and functional life skills (such as personal care, social and communication skills). The school-wide test is administered at the beginning and end of the school year, and each item is scored on a 6-point scale.

The 6-point scoring system was used as follows:

5	Independent or mastered (able to problem solve without assistance if change happens or initiate conversation to appropriately request help or resolve issue)
4	Able to complete tasks on their own in routine situations with direct supervision or the use of a visual sequence without direct supervision
3	Inconsistent performance and needs supervisor in close proximity
2	Emerging or requires direct supervision, step-by-step directions or partial physical assistance
1	Requires and tolerates physical assistance
0	Will not tolerate/ not observed/ not applicable

This scoring scale originated as a 3-point scale, but after being used school-wide, it was determined that too many students were falling in between scores, so it was extended to a 6-point scale. This is necessary with this population, as many students demonstrate very minor differences in performance as they show growth.

Portions of the social/communication section of the IMAFP are considered as school-wide responsibility for creating growth, and therefore taught in every classroom, so those were used as some of the categories measured on the daily student data spreadsheet for this study. Other categories measured in this study evolved from art education goals, special education goals, and comparative analysis that shaped categories during the first stages of data collection. For example, there were initial more art skill categories, yet they were too specific to be measured daily. I chose to limit categories measured to those that were used most frequently during initial open coding and theoretical sampling. Scores were not entered for the purpose of measuring growth, as 9 weeks is a very short time period in which to experience significant growth with this population. Scores were used for comparison purposes, with the hopes of shedding light on what factors positively or negatively impact student participation and learning in this art class. While the nine-week timeframe was short for documenting significant growth, the end date was chosen so as not to go into a new school year with new class configurations, different teachers, and other factors that could affect performance.

The categories observed and measured on the daily student data spreadsheet were as follows:

- finding work area,
- finding and getting supplies,
- following a schedule or visual sequence,

- initiating the art activity,
- engaging in the art activity,
- initiating a bin choice (free art choice),
- engaging in their bin choice,
- making limited choices,
- making open-ended choices,
- expressing preferences,
- sensory tolerance,
- material and tool usage,
- fine motor skills,
- sharing about their work,
- responding to artworks,
- creating from personal experience or imagination,
- trying new things,
- and meaning making.

The daily data also connects scores to specific lesson plans and the date, and in some cases links to images of student artwork for that particular class period. Comments were also able to be input for each score and category, and were later coded and entered as data segments in MAXQDA. These categories are individually defined in the appendix.

The number of art sessions scored for each student varied, as some students are absent on art class days, some miss class due to behavioral reasons, and others have additional art sessions because they have chosen art class as noon options. An overview of the number of art sessions observed for students is as follows:

- 11 students participated in 5 or fewer observed and scored sessions,
- 17 students participated in between 6 and 10 observed and scored sessions, and
- 6 students participated in 11 or more observed and scored sessions.

3.4.4 Data analysis methods. The focus of data analysis was not a measurement of individual student growth; rather it was a thematic examination of how and what students learn in this particular environment for the purposes of guiding better curriculum and instruction planning in the arts for students with disabilities. Initial data analysis methods, as described in SAGE Research Methods, included the following:

3.4.4.1 Content analysis. Content analysis was used to code data from interview transcripts and parent questionnaires based on my research questions. The purpose of content analysis was to determine specific meanings of what was said in the written questionnaires, related to what was being examined by the research study. In particular, staff and parent responses were analyzed to determine their perspectives on what student learning takes place in this setting and what attributes of classroom context and structure they believe fosters or inhibits student learning for these particular students.

3.4.4.2 Thematic analysis. Thematic analysis was used to sort through the codes from open coding and begin to organize them into themes or concepts that appeared prevalent in the data, thereby uncovering themes related to instruction, student learning, and environment. Research questions guided the categorization of themes. This round of coding uncovered themes related to effects of classroom context and instructional strategies, as well social and behavioral interactions, interventions, and implications.

3.4.4.3 Artifact analysis. Data in this study included student-generated artwork as well as photos of art processes and products created over a period of nine weeks. Occasionally

references were made by participants or in my memos to past work, in which case it was also included as data for analysis. Artifacts, artworks in this case, tell a story about their creator. Artifact analysis focused on what the artwork and related photos demonstrated about how the artwork was created, what learning or skill is evident from the creation of the artwork, how engaging the art process was to the creator, and how much the creator seems to value the process and the product. Results of artifact analysis were used in comparison to results of thematic and content analysis to make determinations on how concepts and themes from initial open coding of data connect with or explain results of the artifact analysis.

3.4.4.4 Data analysis software. MAXQDA, data analysis software, was used to organize and analyze collected and initially coded data. MAXQDA is designed for both quantitative and qualitative data analysis, but proved particularly useful in this qualitative study for combining data from various sources. I was able to input all the data from the daily student data spreadsheets, including coded comments, as well as all of the coded parent and staff questionnaire results. The advantage of using this software was the ability to group data segments by single code or student or groups of codes or students, as well as the ability to look at correlations between coded categories.

3.4.5 Constructivist grounded theory coding methods. Both traditional grounded theory and constructivist grounded theory call for the use extensive of coding methods (Charmaz, 2006; Strauss & Corbin, 1998). This study employed the following coding strategies as data analysis methods:

3.4.5.1 Initial coding. During initial coding, or open coding, the researcher remains open to any codes and categories the data reveal. This coding should directly reflect the actions of the participants, sticking very close to the raw data. This step helps to break the data down into

potential conceptual categories (Charmaz, 2006). Initial coding was used for the first round of data analysis. The purpose of this round of coding was to step back from any theoretical expectations of the data, and piece by piece, closely examine what the data were revealing. Ideally this would be done with a completely open mind and no preconceived categories or theories, however, as previously mentioned, that was not possible in this teacher/researcher role. I did, however, initially code questionnaire data in that manner, using both analytic and descriptive codes, without a pre-determined set of codes. I also used initial coding in a more open fashion during the first theoretical sampling opportunity in which I was trying to determine the best categories to observe on the daily student data spreadsheet. Charmaz (2006) notes that initial coding should guide future data collection, as it did here. Once those categories were determined, they became codes and categories for the next stage data collection, and guided the next stage of focused coding.

3.4.5.2 Focused coding. During this second coding phase, the most frequent or most significant initial codes are used to sort through and make sense of large amounts of data. At this stage, data and codes are condensed to what is deemed most important (Charmaz, 2006). Focused coding was used to narrow categories initially coded for all of the questionnaire data and to sift through the large amounts of data and reduce the focus to the most significant data relevant to the research questions being posed. Codes were condensed from descriptive or in vivo codes such as “quality of life action,” to codes seen more frequently and deemed more significant. At this point, some codes were ignored, as they produced few results, such as “find area,” “pride,” and “general curriculum.”

All original questionnaire data was coded using initial (or open) coding, and input into Excel spreadsheets. Spreadsheets from each phase of the data were input into MAXQDA, a data

analysis software program. Doing so was challenging, as much of the data formatting had to be modified to be usable in MAXQDA. While this was frustrating, it proved to be valuable, as it required me to work through my data multiple times during the process, strengthening my understanding of the data and their categories. In fact, initial and focused coding done on the survey data had to be redone in MAXQDA, resulting in basically a re-check of coding accuracy. Data was now ready for the next phase of coding, axial coding.

3.4.5.3 Axial Coding. Axial coding is used to relate coded categories to subcategories. Its purpose is to bring back together the separated codes from initial and focused coding and create coherent groups of codes with defined properties by relating categories to subcategories, and creating coherent groups of codes along with their descriptive properties (Charmaz, 2006). After focused coding was completed for the questionnaire data, and all student data and questionnaire data were input into MAXQDA, it became necessary to start putting back together all the fragmented data into groups of meaningful coded segments, so they could begin to be compared to other data sources such as teacher notes and memos. All focused codes were put into a coding hierarchy in some became sub codes of existing codes, and other where very similar were combined. During this process, axial coding concurrently took place. The coding hierarchy at this point was as follows, along with the number of coded segments in each category:

<i>Coding Hierarchy:</i>	<i>Number of coded data segments</i>
1. Access.....	36
1a. Hand-over-hand.....	25
1b. Adaptive tools.....	13
1c. Assistive Technology.....	9
2. Attitude.....	101
3. Behavior.....	152
3a. OCD.....	16
4. Communication.....	79
4a. Visual supports.....	27
4a1. Visual schedules.....	10

5. Creativity.....	14
5a. Create from personal experience or imagination.....	37
6. Curriculum.....	1
6a. Special Education curriculum.....	4
6a1. Breaking down instruction.....	20
6a2. Predictability.....	36
6a3. Repetition.....	53
6a4. Transition.....	5
6a5. Age appropriate.....	3
6b. Art Education curriculum.....	10
6b1. Create.....	15
6b1a. Variety.....	6
6b1b. Pattern.....	16
6b1c. Process vs product.....	27
6b2. Connect/meaning making.....	51
6b3. Respond to works.....	39
6b4. Present/Share work.....	64
7. Engagement.....	119
7a. Attention.....	68
7b. Follow sequence/visual schedule.....	94
7c. Sensory	173
8. Environment.....	45
8a. Encouragement.....	35
8b. Music.....	15
8c. Noise.....	22
8d. Space.....	18
8e. Structure.....	21
8f. Rapport.....	50
9. Expectations.....	32
9a. Staff perception.....	113
9b. Parent perception.....	160
10. Experience.....	48
11. Experimentation.....	14
11a. Try new things.....	46
12. Initiation.....	24
12a. Find Area.....	2
12b. Find/get supplies.....	166
12c. Begin activity independently.....	5
13. Instruction.....	12
13a. Learning styles.....	15
13b. Motivation.....	44
13c. Wait time.....	27
13d. Prompts.....	113
13e. Timing.....	19
13f. Understanding.....	35
13g. Modeling.....	54

14. Skill development.....	71
14a. Learning outcomes.....	121
14b. Art skills.....	61
14c. Life skills.....	78
14d. Material/tool usage.....	114
14e. Motor skills.....	13
14e1. Fine motor.....	76
14e2. Gross motor.....	3
15. Self-determination.....	200
15a. Independence.....	89
15b. Preferences.....	335
15b1. Choice.....	79
15b1a. Limited choice.....	90
15b1b. Open-ended choice.....	93
15c. Pride.....	7
15d. Self-expression.....	75
15e. Self-regulation.....	71
15f. Self-worth.....	45
16. Therapy.....	41

For each code and its sub codes, clarifying descriptions were written (see appendix). Coded data was now ready for the final stage of coding.

3.4.5.4 Theoretical coding. Theoretical coding, the final stage of coding, shows relationships between coding categories developed in prior stages (Charmaz, 2006). When all data in MAXQDA was coded and arranged by the coding hierarchy in the axial coding stage, I began using the software to try to find correlations between coded categories, such as “engagement and parent perception.” I printed out the resulting segments, as well as single code query results such as “behavior.” For each of these printed out sets of coded data, I used theoretical coding to look for themes, concepts and trends in the narrowed data. This is where dominant themes and theoretical conceptions were beginning to emerge, such as “how assistants help or hinder access,” where the originally coded category was simply “access.” The printed out segments also made it visibly clear that some categories had significantly more data than others,

for example, the categories of “behavior,” “environment,” and “communication.” This would be noted as used as a guide as theories were being developed.

Other data analysis methods were used throughout the process, including memoing, constant comparison, theoretical sampling, saturation, sorting and triangulation of data.

3.4.5.5 Memoing. Memoing, consisting of reflective notes about the setting, participants, or activities being observed (Charmaz, 2006), took place throughout the entire study. It began with data collection, where brief memos were input on the student daily data sheets. Memos were produced after a class or a day where I had thoughts about the lessons, students, or processes of the day. Some memos were thoughts about teaching in this setting, teaching the arts, or about teaching in general. Initial memos had more questions than reflections.

3.4.5.6 Analytic memoing. Analytic memoing consists of reflective notes by the researcher that begin to give meaning to things being observed or to the data being analyzed (Charmaz, 2006). As time progressed, memos became a bit more analytic and insightful. It wasn't until the data analysis phase, however, that true analytic memos began to emerge, demonstrating insight into my perceptions of the meaning of the data.

3.4.5.7 Sorting and theoretical memoing. Sorting primarily took place at the end of data analysis. Printouts of coded data, organized by theme were sorted with memos coded for the same themes. At this stage, I was pulling out the most significant data segments from each of the data sources that helped to tell the story of the unfolding theme or theory. Glaser considers the subsequent theoretical memoing a core stage of grounded theory (Glaser, 1998). This is where reflective thoughts about relationships between substantive codes are recorded. This was primarily done throughout the writing process, as I was making comparisons between research questions, theories, and coded data categories.

3.4.5.8 Theoretical sampling, constant comparison, and saturation. *Theoretical sampling* is the analysis of a segment of currently coded data to determine if codes and categories are working and guide future data collection focused on particular codes or categories that need more development. In this study, this was used primarily during the initial phases of data collection and coding, and used to refine the codes and categories being used and scored. It was further used with *constant comparison* during the data analysis phase to find correlating categories of data that seemed to make sense with both current and developing theories. *Constant comparison*, where collected data are constantly compared to each other and to previously collected data, is iterative and informs further data collection and analysis (Charmaz, 2006). It was used throughout the study, beginning with the very first data set where data and codes were sampled compared to determine what data would be collected as daily student data for the remainder of the study. Each time data sets were sampled and analyzed, codes and further data collection were narrowed, and memos became more targeted. Further data were collected and coded until *saturation* was reached, or in other words, when data collection and analysis were no longer producing new codes or categories (Charmaz, 2006). Similar data from different sources were also compared, for instance, comparing parent perception of student learning with staff perception of student learning.

3.4.5.9 Triangulation. Triangulation was used throughout the data analysis process, employing multiple theories to look at a problem, in this case the use of Art Education theory, Special Education theory, and Learning Sciences theory; and collecting data from multiple perspectives to give validity and deeper meaning to the data, in this case, collecting similar data from the perspectives of both parents and staff members. Triangulation was of significant

importance in this study, in that it was critical to incorporate viewpoints other than my own as both teacher and researcher in order to reduce bias.

3.4.5.10 Theoretical sensitivity. While perhaps not considered a *method* or *tool*, of equal importance to the above data analysis tools is the consideration of **theoretical sensitivity**. Generating theoretically strong concepts from the data to explain what is going on requires the researcher to be aware of subtleties of the meanings of the data. Theoretical sensitivity is the researcher's ability to give meaning to the data, to understand what is important data and what is not, and to derive insightful contextual meaning in the data (Charmaz, 2006). This was an area in which being in the role of both teacher and researcher was extremely valuable and was an essential element in achieving study validity.

3.5 Validity and reliability

While there are certainly limitations to conducting a research study in my own classroom (possible biases, limited participant pool, limited ability to generalize results), there are also some distinct benefits (background knowledge, trusting relationships with participants, and a genuine desire to find answers). Care was taken during both the data collection and coding processes to identify situations in which I may be biased as a participant observer. For example, it is ironic that I am using a study of my own teaching and my own students' learning to learn more about what and how students learn in this environment. Of course there is some bias, as I am basically in the position of picking apart the environment I have helped create with a fine-toothed comb. However, I will reiterate that everything I have done to develop this program has been part of a trial and error system; a much larger informal research study. I avoided bias by recognizing that if I knew the "right" answers, I wouldn't be asking these research questions. If

the “right” answers were obvious to professionals in the field like myself, there would be more literature on the subject and fewer frustrated art teachers.

The use of staff interviews and parent questionnaires is designed to provide multiple perspectives on student learning in this environment, as well as to help me, as a teacher/researcher, very close to the participants and embedded in the program, to keep some distance from the data and reduce bias. This was a means of triangulating data on perception of student learning and the learning environment. Excerpts of raw data are used in the results section in order to keep the results as close to the participants perspective as possible and reduce any biased filtered I may bring to the study. However, as a teacher, I creativity analyze and filter data every day. I modify and employ varied strategies based on my perception of what is working and what is not working daily. Much like teaching, Charmaz (2006) suggests that constructing grounded theory is not a rigid process; rather it is more playful, in that “we play with the ideas we gain from the data. We become involved with our data and learn from them (page 137).” Corbin and Strauss note that creativity is essential to grounded theory research, demanding that the researcher look at new ways to see old knowledge, as well as asking new questions and making new associations along the way to discovery (Strauss & Corbin, 1990).

Data collection tools used for this study were developed specifically for use with these students. Some would consider that a reliability concern in terms of duplicability, however, measuring growth in this setting with existing assessment tools has proven challenging in the past, hence the development of the current assessment on which my daily student data collection tool was based. The parent and staff questionnaires were developed to seek responses specific to information being sought in the research questions. None of the participants received any benefits for participants, nor risked anything by choosing not to participate. The iterative coding

system assured a thorough examination of possible perspectives and themes in the data, and memos helped to methodically narrow those into the final results.

In regard to possible bias as both teacher and researcher, playing both roles was an advantage in terms of theoretical sensitivity and gaining access and trust. Experts suggest that theoretical sensitivity and reflexivity are critical for producing credible grounded theory results (Charmaz, 2006; Thornberg, 2012). It would be nearly impossible for an outsider to research in this setting. I have had visiting artists come in to work with my students for an entire week, and during that time, many students never get to the point of demonstrating an understanding of why that visitor is there, much less demonstrating trust or rapport. Furthermore, because many of these students are nonverbal, learning to understand the subtleties of their communication systems can take years. The trust and rapport I have established with the participants removed barriers to their participation that would be there with an outsider. Furthermore, I have an understanding of learning and growth for each of these students spanning years, rather than just the nine weeks of formal data collection.

It was also an advantage having background knowledge of art education and some practical experience with special education, in that I began with familiarity of many theoretical possibilities for what can and should work in either area. This could be considered a disadvantage had I been adhering to a given theory in my teaching; but because my experience with adaptive arts has been in a setting where there was no curricular guidance, and with a population for which literature in the arts is extremely limited, I came into this study with more questions than preconceived potential answers. Furthermore, because I am invested in these participants and this setting, I have genuine care and concern for the participants and the

program, hence a desire to find meaningful results that can be directly applied to this very program.

In many research studies, the ability to replicate the study can be used to establish reliability. This study is not replicable in that manner. The participants were not randomly selected; there was no control group; and I doubt there is another group of students just like this one out there. There are many students with disabilities in art rooms across the country, however; and I have come across many frustrated art teachers over the years that felt ill prepared to teach them. Every time I have presented at a National conference on adaptive arts, multiple teachers come forward afterward to talk about the difficulties of planning and delivering meaningful instruction for their students with disabilities. This study is valid in that it did what it set out to do; it uncovered themes in the data that help to explain what kinds of learning take place in this program and how arts learning by these students is perceived by staff and parents.

Environmental factors that fostered or inhibited student participation in the program were brought to light, as was the benefits and shortfalls open-ended versus structured lessons and surroundings. When working with any students, there is never a guarantee that what works for one student will work for the next; so we certainly cannot expect to find such a guarantee for students with low incidence disabilities. As a teacher of these students, I understand the importance of knowing each student at a much deeper level than I would need to in a traditional arts class in order to meet the unique learning needs of each. I hope that this study sheds light on possibilities for working with other students with severe disabilities, expanding the toolbox of their teachers. This study was never intended to solve all the difficulties of helping the most challenged learners to succeed in the classroom; it was meant to be a starting point, a step in the right direction to providing better and more meaningful access to the arts for all students.

One theme that developed over the course of data analysis was the affect of teaching assistants on students learning. It is not new knowledge that the effectiveness or lack of effectiveness of a teacher or assistant impacts student learning. I would suggest, however, that it is possible that perceptions of disability, often deep-seeded perceptions and expectations, were not addressed in this study, but most likely impact student learning in this setting and staff perception of student learning. That may remain a possible source of concern, yet hopefully it is more so a starting point for another study.

Chapter 4 Results: Attributes of Classroom Context that Foster or Inhibit Learning

This chapter addresses the research question, “What attributes of classroom context foster or inhibit learning in this setting?” This study was not intended to be design research. In other words, teaching strategies and tools were not designed or implemented specifically for research. It was also not meant to be an intervention where specific tools or strategies are tested for their rate of success. This was a grounded theory study, which took place in within my regularly taught art classes. Multiple teaching strategies are used as a normal part of my teaching, and were examined only in relation to their impact on student engagement and learning in this art program. As is highly encouraged in the field and recognized by the National Board for Professional Teaching Standards, I am continuously learning and growing as teacher, and therefore continuously adapting teaching strategies to the needs of the learners based on current research. As both a teacher and a researcher, my teaching constantly informs my research, and my research constantly informs my teaching. That is important to make transparent, in that my results are influenced by my immersion in and deep understanding of this particular setting.

It is worth mentioning again that while this is a specialized school for students with moderate to profound disabilities, I am not advocating for or against such placements. I am merely presenting data related to what has seemed to foster or inhibit learning in this particular art program, with these particular students, at this particular time. While it is my hope that lessons learned in this study will be helpful to teachers in similar learning environments or with similar students integrated into their classrooms, I would not expect this study to be easily generalizable due to the uniqueness of each of the participants.

In order to establish a shared understanding of the classroom environment studied, a more detailed description of the setting may be helpful. This study took place at a school of

approximately 55 students, all of whom have moderate to severe intellectual disabilities and qualify for alternative testing. Many also have physical disabilities requiring the use of a wheelchair and other orthopedic supports. Each classroom teacher has a caseload of between five and eight students, and has at least two paraprofessionals working with her students. Each class comes to the art room for art class twice a week for 30 to 40 minutes. Because the students' disabilities include physical, emotional, and cognitive at a range of functioning levels, adapting the environment to meet individual needs is an expectation in this school. School-wide goals include the teaching of social and communication skills and behavior modification, since the majority of students come to us from districts seeking solutions to communication deficits and aggressive behaviors that have negatively impacted learning. Determining what types of environmental factors and modifications work best in this setting is the focus of this chapter. Physical attributes of the environment such as space, assistive technologies, and sensory stimuli will be discussed, as will relational and instructional aspects such as rapport, communication considerations, and instructional content delivery. Since ultimately the goal is learning, student access to learning, which is affected by all of the above, is a primary consideration. I will begin with a look at what the data shows regarding student access to learning in this environment.

4.1 Access to Learning

All students by law are guaranteed a free and appropriate public education. Students with disabilities are guaranteed access to the general education curriculum and to learning opportunities equitable to those of their nondisabled peers; but what does *access* look like? It is easy to imagine limited physical access, for example, learning environments with stairs or supplies high on shelving where students in wheelchairs cannot go or reach without assistance. In most cases, this setting as well, most of those more obvious obstacles have been eliminated

based on legal requirements for accessibility. There are many more subtle physical obstacles as well though, like tools with inadequate grips, tables with stability or height issues, sinks built into cabinets leaving no room to wheel up to them. Assistive technologies can help overcome these types of obstacles. Sensory stimuli are another factor in the physical environment that can have a great impact on learners with sensory processing disorders (SPD). Even subtler are the non-physical obstacles to access, such as communication barriers, lack of appropriate or meaningful curriculum, and misconceptions of disability and learning differences.

4.1.1 The physical environment and access. This section examines the data in categories related to physical access to learning, such as classroom space, assistive technologies, and sensory stimuli. Human behavior is directly impacted by the environment, and the classroom environment is affected by the behaviors of the people who use the space (Wexler, 2015). An excerpt from my teacher notes reflects that belief:

“Environment is so important here. I had no idea how much impact sensory things that I am unaware of affect learning for many of these students. Noises that I don’t even hear, like the fluorescent lights, can be so bothersome that a student cannot work. Lights, sounds, smells, space, sudden movements, all affect learning here.” (April 4, 2014)

Therefore, physical classroom environment must be examined as a designed space that impacts learning within that space. The category of “environment” had a total of 206 coded segments; 45 of those were general comments or references to environment, whereas the rest fell into subcategories of environment. For the purposes of this study, physical environment discussion will focus on space, assistive technologies, and sensory stimuli, as those were categories in which the data was most significant.

4.1.1.1 Space. In regard to data collection, space was a sub-category of environment. There were a total of 18 segments from daily student data and staff and parent surveys that were coded specifically for space. It is interesting that there are relatively few segments in this

category compared to other subcategories of environment, like rapport, which had 50 segments, and encouragement, which had 35. Perhaps for many who work with these students in this setting, considerations of space are obvious and therefore go unmentioned, whereas typical art teachers in general education setting may be unaware of the spatial needs of their students with intellectual disabilities such as autism. Spatial considerations are without a doubt important in this setting. Of the 18 segments coded for space, 11 were further coded for “distance from others and distractions/room to move.” Most referred to students’ needs for personal space, for example multiple staff survey responses to what makes a student more willing to participate included comments such as:

- “distance in personal space,” (staff survey, student 17)
- “individual spacing needs met,” (staff survey, student 18)
- “away from other kids,” (staff survey, student 19)
- “having his own space to work,” (staff survey, student 21) and
- “needs to be at a table where she can maybe stand and work at when the need is there.” (staff survey, student 23)

These data segments are in line with special education research and disability studies that suggest that spacing is an important aspect of adjusting any classroom environment to foster student success, rather than trying to change the student to fit the environment. For instance, Crosland (2012) promotes the use of space indicators such as visual boundaries as antecedent interventions that manage student behaviors in a more proactive, preventative manner, as well as quiet spaces and strategic room arrangement that allow for student access to needed materials and safe, easy navigation of the space.

Many of the participants have a history of exhibiting aggressive or self-harming behaviors, especially when confused, frustrated, or over-stimulated. There were more data segments coded for “behavior” (152 segments) than any other categories other than “environment” (206 segments) and “sensory” (173 segments), clearly demonstrating that student behavior affects learning in this environment. As will be discussed in the Sensory Stimuli section of this chapter, behavior and sensory stimuli can be interrelated. This will be discussed in more depth later in this chapter, but it should be recognized that physical spaces impact behavior, and behaviors impact the physical space. For example, some of the participants have a history of throwing furniture when agitated. In an effort to maximize learning potential for those students and others around them, unnecessary furniture is removed from the space, and heavier chairs are given to those students for seating, hoping to eliminate the temptation to turn to that form of aggression when upset. Furthermore, careful consideration is given as to what environmental features may be triggers. For one student participant, the mere proximity of an empty stool is a trigger. For another, data suggests that noise is a trigger, so he is seated away from students who tend to make loud vocalizations, and near a door in case he



Figure 4.1 Quiet work area

needs to leave the room. Movable partitions are also used to give students the personal space they need, free from distractions (Figure 4.1). It should be noted that this does NOT mean that students are secluded. These more private spaces are provided as options, where students can choose to go to as an alternative to a table nearer to peers. Parents and staff appear to recognize, as evidenced by the data, that many of these students are more willing and able to participate safely when the physical environment is set up such that students have adequate personal space

to move around if necessary, to be at a safe distance from peers when aggressive behavior occur, and to limit sensory stimuli that may induce aggressive behaviors, as is indicated by the previous staff survey quotes and the following parent survey responses:

- “likes quiet with few distractions,” (parent survey, student 10)
- “he enjoys [art] for short bursts if working one-on-one in the hall. In classroom, grabs others’ work, throws things,” (parent survey, student 12)
- more willing to participate when in an “environment without a lot of distractions,” (parent survey, student 16)

Creating a structured environment that meets individual spacing needs is extremely beneficial to students with IDD, autism in particular (Stokes, 2004). As stated earlier, proximity of students to each other and to exits can impact safety for all when one student becomes aggressive. Seating arrangements and room flow should be such that disruptions can be prevented or overcome quickly and safely. In reference to seating areas and room flow, the following survey responses suggest that students perform better when they knew the location of their assigned work area, and have a break area within the learning space:

- willingness to participate depends on “structure, designated spot,” (staff survey, student 1)
- learns best when “quiet area if they need a break,” (staff survey, student 2)
- “helps to have one spot for art,” (parent survey, student 15)
- learns best when “knows where her table is at,” (staff survey, student 16)
- learns best when “quiet area when she needs a break,” (staff survey, student 16)
- willingness to participate depends on “having his own space to work in,” (staff survey, student 21)

- willingness to participate depends on “knows where seat is.” (staff survey, student 2)

It is noted in teacher notes and room diagrams that there are spaces within the room that have limited visual stimuli, visual boundaries in the form of partitions, and alternate seating arrangements such as bean bags or higher tables for students who wish to stand and work. There are spaces with full lighting and others with low lighting. There is a rocking chair available as well as a studio area in the hallway for students who need no distractions and a quieter atmosphere, as having a calming space can help alleviate negative behaviors before they escalate. For example, my teacher notes (April 4, 2014) describe one student’s behavior becoming inappropriate as he began ripping up his work, throwing the pieces, and then using the glue stick on the floor tiles. He was asked if he would prefer to calm down at his work area or in the beanbag. He immediately chose the bean bag, and after about ten minutes of self-regulating in the bean bag, he willingly came back to his work area where he completed his visual task schedule, including cleaning up the mess he had made. Visual schedules were also exceedingly helpful in this situation, as clean up was part of the schedule, and therefore did not need to be introduced as a consequence, which may have further escalated negative behaviors. The use of visual supports will be addressed later.

Interestingly, there was very little data related to the modification of the physical environment in other manners, other than in teacher memos regarding how this learning environment has changed over the years. Research suggests that students with IDD, autism in particular, need both predictability and limited visual stimulation in classroom environments where there is limited access to tools and materials that could be used in an unhealthy manner, and easy access to needed materials by means storing tools and materials in predictable, labeled spaces and disseminating them in predictable manners (Crosland, 2012). Perhaps because this is

such an established practice in this specific arts learning environment, as well as common practice within the home classrooms at this school, it simply went unnoticed in the data collection process. Teacher notes refer to tables and chairs being rearranged for each class, such that each student has a specific table and chair that best meets his or her needs. For example, students who are prone to seizures are given chairs with backs and arms, visually impaired students have a specific table and chair with a tactile label they can locate by touch, and students in wheel chairs use tables with cutouts so their chair will easily fit underneath. Furthermore, furniture arrangement is consistent and predictable. There is excerpt from my teacher notes that demonstrates the difficulty experienced by a child who needs such predictability:

[The student] “came in today and headed for his seat. The table had been turned perpendicular to its normal placement in the previous class and hadn’t been turned back. [He] saw it and froze, turned and glared at me, and literally didn’t seem to know what to do. His anxiety level skyrocketed. I visually showed him that it was still HIS table by pointing to the unique holes in his table. I asked if he wanted it moved. He said yes. Once moved back, he was fine.” (May 15, 2014)

For this student, table placement was more than preference. This is a student with autism. As with other students here with autism, if anything is new or unexpected, he seems to become anxious very quickly, diminishing his willingness to participate. This restricts access to learning, as new lessons and activities may necessitate altered classroom arrangements, and can trigger an anxious response. In these cases, instructional strategies are used to navigate around the predicted difficulty, such as social stories, video modeling, and visual schedules, which will be discussed later.

Visual data, including photos of classroom layout, show cabinets and drawers labeled with picture and text labels, and see-through labeled bins on shelving (Figure 4.2).

This system has been refined over the years, but has always been in the same location. For the first year or so, most students would not access the bins or tools on their own, unless perhaps one was rummaging. It took time for



Figure 4.2 Art Bins and Labeling of Supplies

the space and structure to become predictable for them. The following excerpt from my teacher notes exemplifies this:

“I think of one girl who when I started working with her four years ago, would not engage at all unless someone sat with her and continuously prompted her with exactly what to do, where to make a mark, etc. The most she would do is make a single mark on paper when prompted. Now she will come in the art room, get paints and water and brush and paper, and go to a table and paint. A few times, she has gone missing from her classroom and been found in the art room, all by herself, painting. So cool.” (April 7, 2014)

Although the physical placement and labeling of tools and materials was not noted in the survey data, physical access to tools and materials, including the use of assistive technologies, was referred to extensively, and will be more closely examined next.



Figure 4.3 Creative Adaptations Enable Independence

4.1.1.2 Assistive

technologies. Assistive technologies are items, products or pieces of equipment, whether purchased commercially or custom made, that are used to increase, maintain, or improve the functional capabilities of

children with disabilities. They are necessary because access can be limited or denied when a student cannot use a traditional tool due to his or her disability. The two dominant themes that emerged in the data regarding physical access were adaptive tools, considered low-tech assistive technology, and hand-over-hand assistance. One daily student data excerpt, for example, referred to a student's access to participation as influenced by the use of cups of water and paint placed in holes drilled in the table, a table top easel, and a secured work surface (Figure 4.3). This was a creative solution to the problem of this particular student wanting to participate as independently as possible despite her physical disability.

Survey comments for this particular student included statements such as, “loves being able to use the adaptive tools so she can complete art skills independently,” and “enjoys painting with a modified brush.” One staff survey included the comment “adaptive tools are what make a huge difference for this student and being able to express herself with less restrictions than other classes.” The purpose of assistive technologies is to increase, maintain, or improve the capabilities of students to access the art making process more independently. The previous

comment demonstrates that such improved access also enhances the important arts goal of self-expression, which would be severely limited if the student was unable to use the tools and materials independently. The integral use of tools in learning in this setting can perhaps be better understood through a distributed cognition lens, which views learning as distributes across individuals, objects and tools rather than resting solely in the minds of individuals (Gomez, Schieble, Curwood, & Hassett, 2010). I will address this perspective in more depth in the discussion section of this chapter.

Many of the daily data comments referred to the use of modified tools and grips (Figure 4.5), slant boards, and specially designed tables. Accessibility to art making is limited when a student is not physically able to use the tools provided. Therefore, tools are modified to meet the needs of individual students, yet provided as a choice for any student so as not to single out a particular student need. Adaptive tools, such as scissors, grips or slant boards, can be store bought (Figure 4.4),



Figure 4.4 Store bought adaptive scissors

or some can be hand made such as the grips and slant boards shown below (Figure 4.5).



Figure 4.5 Hand made slant board and grips

In this setting, many grips are hand-made with plastic bottle handles, Velcro straps, Model Magic, tennis balls, PVC piping, or paper towels and tape. Because each student here has such unique needs, and budgets are limited, often these hand-made solutions provide the best access. Tools can be specially created to fit an individual, unique grip or reach. When adaptive tools are not used, the alternative seems to be teaching assistance employing hand-over-hand assistance. While such assistance may be necessary in some cases, for example with students who have very limited mobility, in other cases it can be too invasive, and may cause more harm than good. For example, one staff survey participant noted that, “when class is mostly hand-over-hand is when we see issues with participation begin to arise.” (staff survey, student 20) This particular student is non-verbal, so his resistance to participation is his only means of communicating that he is not happy with what is happening. His behavior IS his form of communication.

Adaptive Arts Specialist, Sue Loesl (2012), reminds us that the person giving hand-over-hand assistance must be ultra sensitive to the student’s abilities and modes of communication in

order to sense how much assistance to give, and to be able to recognize resistance to too much help. Hand-over-hand assistance, while not technically an assistive technology, fits in this discussion of access and assistive technology because it is used as a means of providing access to the materials for someone whose physical disability otherwise limits or prohibits participation. As such, it must be recognized as an intervention that either help or hinder student learning, depending on how and to what extent it is used. Although beyond the scope of this study, the delicate balance between enough assistance and too much assistance is an ongoing conversation in education. Yet it is important and relevant to this study. A favorite quote of mine is from Loesl, “If we choose to take away ANY of their abilities, we take away part of who they are.” Assistive technologies should be used to foster independence, not replace participatory opportunities. From a distributed learning perspective, these tools are more than conveniences, they are an integral part of learning, knowing and doing. Other assistive technologies, such as communication devices, will be discussed in depth in the communication section of this chapter.

4.1.1.3 Sensory stimuli. A student supervisor, during a school tour, mentioned that he sees a progression with students over the years, for example, kids who wouldn’t even touch art materials who are now painting independently or students who would initially refuse to come to art now come willingly and engage in art. Sensory Processing Disorder is fairly common in students in this setting, and can become a physical barrier to participation and learning in the arts. The category of “sensory” had more coded segments than any other category other than “environment.” All segments coded for sensory were then coded again for types of sensory involvement, including touch, visual, oral, distractions, pattern, materials, movement, and smell. The three dominant themes in the sensory data were:

- 1) The hindrance to learning of sensory distractions.

2) The joy of using sensory materials in a process rather than product-oriented manner, and

3) A hesitance to touch unfamiliar or messy materials.

Sensory distractions include those that are visual, auditory and movement related. The data here reflects the hindrance to learning when these sensory distractions are present, as in the following data segments:

- “very distracted by thunderstorm,” (Daily data, student 5, class 4)
- “she doesn’t like a lot of things out at once – she will start putting them away,” (Staff survey, student 23)
- more willing to participate “when he is away from other kids or distractions,” (Staff survey, student 19)
- “comes to art during school wide events that are too over-stimulating,” (Staff survey, student 22)
- “noise and commotion bothersome,” (Daily data, student 29, class 3) and
- “doesn’t know how to express when noise is bothering her.” (Daily data, student 13, class 3)

Although there were fewer segments coded with these (only nine segments specifically coded for “sensory distractions”), this is something every teacher in the school is expected to accommodate for by removing or reducing potential distracters like fluorescent lighting, excessive visual stimuli, and loud noises. Therefore, the daily student data and survey data do not necessarily account for the struggle these students may have in a general education environment where those modifications are not made. Classroom photos and teacher notes, however, clearly demonstrate the use of things like partitions, blinds, alternate lighting, and student headphones to reduce

visual and auditory stimuli. It is also noted that this classroom space has very few visual displays common in most art rooms. Current research suggests that adapting the environment by intentionally reducing sensory overstimulation may be a universal design strategy in that it may help all learners (UDL-IRN, 2011).

Of the 173 segments coded for sensory, 71 referenced touch. Of those 71 segments, 47 were a positive reference to sensory involvement and 24 were a negative reference. Negative references included comments such as:

- “didn’t like to touch the wet shirt,” (Daily data, student 5, class 4)
- “does NOT like glue on his hands,” (Daily data, student 5, class 3)
- “doesn’t like getting his hands dirty,” (Staff survey, student 1)
- “doesn’t like sensory materials that get his hands messy,” (Staff survey, student 5)
- “didn’t want to put bare hands in the water,” (Daily data, student 1, class 7)
- “doesn’t like to touch the chalk,” (Daily data, student 17, class 7)
- “initially pulled away from chalk and would not re-grab,” (Daily data, student 17, class 6)
- “doesn’t always enjoy sticky or messy,” (Staff survey, student 12)
- “would not touch glaze bottles,” (Daily data, student 1, class 6)
- “doesn’t like paint on hands,” (Daily data, student 5, noon 1) and
- “would not tolerate hand tracing.” (Daily data, student 31, class 1)

The sensory intolerance data was expected, and is accounted for in lesson development. The majority of sensory comments however, or 66%, referenced positive sensory experiences. This is interesting, because many of the positive sensory experiences refer to engaging with materials in ways that, while pleasing to the student, in many art classes would be seen as misbehaving or inappropriate use of materials. For example:

- “turning away with glue stick to manipulate it,” (Daily data, student 19, class 1)
- “liked to rip the fabric strips and play with the pipe cleaners,” (Daily data, student 18, class 2)
- “liked playing with the shirt once it was tied; turning, twisting, feeling it,” (Daily data, student 17, class 4)
- “wanted to touch the fresh print,” (Daily data, student 10, class 8)
- “likes to touch the glue,” (Daily data, student 2, class 1)
- “liked stretching the rubber bands,” (Daily data, student 10, class 5)
- “likes to put his fingers in the Mod Podge,” (Daily data, student 10, class 2)
- “Loves to roll the Model Magic, also liked lining up the cups and lids,” (Daily data, student 17) and
- “model magic, opened containers and started mixing and rolling until pieces flung! All with a huge smile!” (Daily data, student 17, class 3)

This is an important finding, as this sensory exploration seems to play a role in helping these students to develop a joy of creating and an understanding of how art materials work. Many of these students have very limited experience with art materials at home, and may therefore need to go through this experiential phase of art, exploring materials and discovering cause and effect. This is exemplified by students who enjoy the glue pouring out of the bottle with absolutely no regard for how much is actually needed; they are enthralled with the process of pouring the glue. These sensory experiences play into the art debate of process versus product: when does one or the other take precedent? They may also shed light on why general education art teachers often struggle with behaviors of students with intellectual disabilities. In this setting, sensory exploration is welcomed as part of the learning process, fostering engagement and ideally de-

sensitizing students with Sensory Processing Disorders. This is exemplified by parent comments such as:

- “The more she’s exposed to different materials, the more it helps her sensory processing.” (parent survey, student 16)
- “He seems to be more patient than he used to be and less hesitant to touch various art materials.” (parent survey, student 17)
- “more tolerant of using different materials, sensory improvement,” (parent survey, student 20)
- “Holding on to things longer, doesn’t pull away from different sensory materials as much.” (parent survey, student 20)

The following excerpt from my teacher notes demonstrates how allowing for sensory experiences as a focus of the lesson has fostered arts learning, whereas focusing on rigid finished projects may have hindered learning.

“Stringing wind chimes today. This was a ceramics project. I try to do one clay project every year. Each time I repeat a material or technique, students seem more open to it. We have a lot of students with sensory intolerances, so this seems to be good for sensory exposure. We also have a lot of students who love any sensory involvement like clay or sand or shaving cream. We have worked on the concepts of texture and slabs previously; this was a way to spiral back to that. Many of the kids need deep pressure activities and like to roll the clay or press hard with their palms. I give them lots of tool choice for texture and have found that my expectations need to loosen up regarding how their textures will look. If they are using tools safely and joyfully engaged, I let them work “messier” than I would normally be okay with. I try to let them do it their way as much as possible, as my goals are appropriate and safe tool usage, and initiation and engagement in arts that can be a lifelong leisure choice. One of my students presenting performs at about a six-month cognitive age level, and just likes to squeeze the clay tightly in his hands. That’s okay...he is engaged. I used the squeezed clay pieces as his chimes. The hard part is convincing staff to let the projects be the outcome of the KIDS’ work as much as possible and not try to “fix” everything.” (April 23, 2014)

In my teacher role, I attend and present at National Art Education Conferences annually. I talk to teachers every year who struggle with their teaching assistants doing artwork for the kids or “fixing” it for them. This will be addressed in section 4.1.2.2.

4.1.2 Intellectual access and behavioral obstacles. The dominant themes that emerged in the data regarding intellectual access were access to the general education art education curriculum, the affects of teaching assistants’ approaches on the participation of the students, and communication barriers to learning. A consideration in terms of curriculum access is the examination of what is *meaningful* and *appropriate* curriculum, a topic too extensive to be covered in full in the scope of this study, but is nonetheless relevant and will therefore be briefly discussed.

4.1.2.1 Access to the general art education curriculum. A quote from a staff survey addresses the importance of exposing students with disabilities to the general education curriculum. This staff member states that students thrive when there are “opportunities to do a variety of art activities in art that children in a regular school environment also participate in.” This is a legal requirement, yet sometimes a seemingly elusive goal. The following excerpt from my teacher notes exemplifies the initial struggle to provide access to the general curriculum while simultaneously creating lessons that are both developmentally appropriate and meaningful:

“One of my struggles in developing curriculum here is dealing with the concept of “age-appropriate” curriculum. For example, I have students in their late teens that are interested in things like Elmo or Barney. “Age-appropriate” conventions would preclude using those as inspiration for artwork, yet what I know about motivating students in art tells me to start with the things that interest students the most. It would seem that I should still expose them to age appropriate materials, especially when due to communication deficits I don’t really know what they hear and understand.” (April 3, 2014)

As was mentioned in chapter two, it is commonly accepted in general education that students are more engaged in learning when instruction revolves around something in which they are interested. It was further noted that there are findings of fewer behavior problems when students with severe disabilities are involved in an activity that interest them (Kern, Childs, Dunlap, Clarke, Falk 1994). Providing choice opportunities for artwork subject matter can be motivating to students by allowing them to integrate areas of personal interest into their learning. Yet some student choices may be those that others would consider inappropriate for their age. Consider the data excerpt above. This concept of connecting learning opportunities to student interests can affect intellectual access to the general education arts curriculum. Subject matter geared to students' chronological age level, for instance abstract or metaphorical artworks, may not be of interest to the students or in alignment with their present level of performance cognitively, yet students' preferred subject matter may not be appropriate for age-level general curriculum.

Another aspect of access to the general art education curriculum is instruction time. Cognitive processing time variations and the need for individualizing instruction and delivering on a one-to-one basis takes significant amounts of instructional time. The rigidity of the schedule and instructional delivery model in this setting appears to inhibit access to the general curriculum simple in terms of time allotted to do so, in that far less ground can be covered. Students in this setting have less time per week in art as their same-age peers in regular education art classes, yet they need more processing time and differentiated instructional models. Furthermore, students in this setting have IEP goals that benefit from the integration of non-art related goals into daily learning throughout the school day. That would seem to create an impossible equation if equal exposure to general art education curriculum is a desired outcome.

One of the interesting aspects of the data to me as both researcher and teacher was the lack of data from surveys and daily student data sheets in the art education curriculum category.



Figure 4.6 Creating artwork based on a famous artist.

There are data that demonstrate the inclusion of art education concepts, such as student artwork samples and references to current or historical artists (Figure 4.6), as well as references to skills and techniques being taught, but there is very little reference to those in the daily student data or in the survey data. Furthermore, while student artwork demonstrates the inclusion of the

study of famous artists, there appears to be a lack of representation of artists with disabilities, which is vital for culturally responsive teaching. According to teacher notes and lesson plans, artists are often chosen based on the use of a particular medium or technique to be taught, with consideration given to the perceived ability of students to comprehend and apply the artist's style or technique, as well as the suitability of the style or techniques for sensory integration or repetitive practice. For example, Kandinsky's Squares with Concentric Circles painting is seen laminated at student works area while they are working on creating similar concentric circles with oil pastels or chalk. In this case, the lesson was chosen because it exposes students to a famous artist and provides a visual example of artwork style to follow, while simultaneously providing opportunity to involve gross motor skills, sensory exploration, repetition, and shape recognition, all part of participant students' IEPs. The following excerpt from my teacher notes elaborates on this:

"Kandinsky circles. Did this because the students seemed to enjoy the grid mosaics, with the repetition and clear beginning and end. We looked at and talked about Kandinsky's work. Many of the students could name "circles" or point to the circles and squares when asked to find them. We used oil pastels, which was a new material. Most students seem to

like the feel of the oil pastels on paper. One student just wouldn't use them, so I offered chalk. He didn't like the feel of the chalk, but after I added paper towel grips, he smiled and engaged eagerly. This student loves stamping or using bingo dotters within a grid, so this had a similar grid approach. This particular student with autism seemed to hate art for the first couple of years, other than when we did stamping in grids. Now he also likes model magic, fabric (loved tying fabric strips on to wire to make a wreath...again, very repetitive so he knew what to do, and visually clear finished state. Similarly, we made celebration circles for music use (rings with various textured strips attached that would be visually, auditorily, and kinesthetically pleasing when shaken). That project was the first time ever that he came back to the art room to ask for it to take home!!! A huge step! First time I really noticed an attachment to the artwork he made!" (May 16, 2014)

This excerpt also sheds light on the importance of understanding and building upon student interests in order to foster engagement and learning.

Other best practices in art education, regarding curriculum, are multicultural art lessons and community based lessons. A cultural approach to art learning is seen in a mask making unit and a study on communities, in which students create multimedia houses and homes based on the work of a contemporary artist. Community based art can be seen in a soup bowls community service project and in work created for a community fundraising craft fair and silent auction. It is interesting that there is ample evidence showing the inclusion of general art education curriculum content, yet the staff and parent surveys make little mention of art curriculum in terms of perceived learning outcomes. While what students learn in this setting will be discussed in more depth in chapter six, it needs to be addressed here as well in terms of access. The minimal data on art education skills, techniques, and comments, begs the following question of access:

- Is data lacking because other aspects of learning were more important?
- Is there enough art education curricula being offered in order to give students equal access to the general education curriculum?

- If not, why not? Is it an issue of time? Of perceived ability levels? Of school goals taking priority over subject area goals?
- Is this okay?

This is perhaps the most reflective aspect of the study for me as a teacher/researcher, in part because these are questions that arose as a result of data analysis and writing, which means I do not yet have satisfying answer for them. There is one analytic memo referencing these thoughts:

“Consider my own ableist view...very little coded for art education. Is that because I wasn’t consciously looking for that as it is so obvious to me? Is it because I don’t teach as much because I am focused on behavior and communication? Is it because I am expecting less because the students are ‘disabled’?” (Analytic memo, March 28, 2015)

This will be discussed in the discussion and implication sections in reference to the need for further study, and more reflective practice, as those questions are too broad to answer within this particular study. Instructors in this settings such as this, based on district, state, and national art education standards, school-wide learning goals, and student IEP goals, make curricular choices. There are many more curricular options than fit in the time allotted for teaching and learning, so there is not one perfect curricular solution. A relevant piece of the curriculum delivery puzzle, however, is the impact teaching assistants have on instruction and learning, which will be discussed next.

4.1.2.2 Teaching assistants. Loesl states that art teachers should learn to recognize the types and qualities of marks made independently by their students so it becomes obvious when too much assistance has been given. When we fail to allow students to do their own work, and make their own decisions about when something is “done” or “good enough,” we inadvertently tell the student that he can’t do it well enough (Loesl, 2012). This contradicts the goal of students developing a joy of creating meaningful artwork, because they know they haven’t actually done it. It also contradicts the goal of developing identity, self-esteem, and self-expression, as the

work takes on the voice of the assistant rather than the student. While it happens regularly, there were only a few data segments that explicitly referred to work being done for students, such as:

- “TA kept bin away from him and only did HOH [hand over hand],” (Daily data, student 19, class 5) and
- “TA did much of the work not allowing wait time or choice making.” (Daily data, student 28, class 4)

The following entry into my teacher journal, however, further illuminates the concern that some teaching assistants are resistance to weaning assistance, or learning to give the minimal assistance necessary to engage the student as fully as possible:

“Working on embellishing guitars today with one of the lower functioning classes. Music teacher wanted this class to make guitars for props for the music concert. The students really aren’t getting to do much of anything, since if I walk away to work with another student, the assistants take over. The assistants are really enjoying this but are doing way too much of the choice making and actual creation. I know they think they are helping make it ‘look better’ but I struggle with how to convince them that it is more important to let the students actually participate and have some say.” (April 25, 2014)

Other segments showed the prevalence of TAs not including students in the art making process at all, for instance:

- “sat at table, not asked to participate,” (Daily data, student 28, class 5)
- “[TA] just sat with him. No prompting,” (Daily data, student 2, class 1)
- “TAs didn’t offer anything or help him find a bin,” (Daily data, student 2, class 2)
- “[student] sat at a table waiting,” (Daily data, student 2, class 5)
- “TA kept bin away from him and only did hand-over-hand,” (Daily data, student 19, class 5) and
- “stood by sink and watched. No one asked her to participate.” Daily data, student 23, class 6)

Another segment from my teacher notes further exemplifies this concern:

“For the past week or so, all classes have been working on tie dying t-shirts. This is a school wide project I am in charge of, where all students and staff tie dye a shirt, then two student-designed images are provided as choices to be silk-screened on to the shirt. It is a great community building activity, and the lesson is designed to give students a chance to make something functional, and learn about the process of designing and printing shirts. Students and staff are supposed to work closely on this, however, in some classes, particularly with students who are more physically disabled and non-verbal, assistants are simply ignoring students and doing the shirts for them. This is frustrating...time is built in so the assistants CAN wait patiently for student involvement. This is one of those lessons where the TA's seem to forget whose class it is...they become the excited art students themselves instead of allowing the students to be the students. I am trying to encourage them to always include the student, even when it means verbalizing what they are doing for the student when the student can't or won't participate. In one class, 2 TA's started working and didn't even ask the students, in wheelchairs, if they wanted to participate. I had to wheel them in to the middle of the action and model doing it WITH them vs FOR them. Still, one TA continued to ignore her student. It is very uncomfortable when assistants ignore directives, as it puts me in a position to have to continue to redirect them (which makes it feel like they are the student), and takes time away from students I need to work with.” (May 14, 2014)

These are students who often have difficulty, as a result of their disabilities, initiating and engaging. There are prompting hierarchies in place in this school for teaching and fostering initiation and engagement, yet they aren't always used when they should be. Wait time and patience are vital components of fostering learning in this setting, as students' processing times are slower. The following data segment demonstrates the use of prompts and wait time:

- “[occupational therapist] very patient with wait time. [Student] would watch w prompts and repositioning chimes for picking and watching tie.”

The staff member assisting in this case, however, is a certified occupational therapist, so she has significantly more educational expertise and experience than the teaching assistants. Fostering learning in students with low incidence disabilities is challenging in that every student's needs are so unique, and generally very different from those of the staff member assisting. Perhaps paraprofessional training is not sufficient for working with students with such severe, low

incidence disabilities, especially those whose behaviors inhibit learning, as is the case for many students in this particular setting.

4.1.2.3 Behavioral obstacles to learning. Students assigned to this specialized school are often referred here for intense behavior and communication support. As previously mentioned, many of these students come to this facility with a history of aggressive or self-harming behaviors that have been obstacles to learning in their previous school settings. This was therefore determined to be their least restrictive learning environment. There was significant data for behavior in this study, resulting in 152 coded segments. For the purposes of this study, “behavior” refers to actions by a student that require redirecting or disciplinary responses in order to facilitate learning or keep staff and students safe. The dominant themes for behavior were as follows:

- The highest number of behavior related comments referred to behaviors that took place prior to art class.
- A high number of comments were “anxiety” related.
- There were more aggressive behaviors with materials (eleven of nineteen) than people (eight of nineteen).

The first of these is perhaps the most interesting in relation to thinking about what aspects of classroom context foster or inhibit learning in this setting. As a teacher, it is easy to place blame on the current classroom context or instructional practice when negative behaviors arise, yet the data in this case demonstrates that many of such behaviors may have more to do with events prior to class or to the difficulty of transitioning from one learning environment to another. 15 of 38 segments coded for behavior referred to behavior escalation during class, whereas 19 of the 38 segments referred to behavioral escalation prior to entering class. This would suggest that

transitioning is a significant contextual factor affecting learning, which is validated by research in autism that suggests that students benefit from a predictable environment (Stokes, 2004; Crosland, 2012). Data in this study shows that instructional predictability fosters learning. An example of this is the consistent use of visual schedules in presenting information. Both a daily art class schedule and a specific task schedule are placed in the same location at student work areas for every class, and are used in the same order for every class. Art bins with needed supplies are placed at the top of their work area as well. As students have become familiar with the classroom format and expectations, negative transitioning behaviors have decreased and productive engagement has increased. Students increasingly use these schedules and bins more independently, and are less resistant to new activities when they are set within this expected framework, suggesting the importance of predictability when transitioning from one class to another, one lesson to another, or one activity to another. Loesl suggests that the transitioning behaviors seen in this settings such as this could be reduced or avoided by both the consistent use of visual schedules that clarify procedures and expectations, and sufficient preparation for transition by the classroom teacher prior to art class (Loesl, 2010 in Gerber, 2010).

When unwanted behaviors occur within the art classroom, it is necessary for staff working with the student to recognize behavior as a means of communication. Consider the following data example from my teacher journal:

“When my students are acting out behaviorally, it is often difficult to know why. Are they upset about the activity? Do they lack understanding? Are their preferences not being recognized or accepted? Did something happen before class? Are they uncomfortable (hungry, sick, etc.)?” (April 3, 2014)

Behavior is a form of communication. A high number of data segments coded for behavior were anxiety related. When unwanted behaviors are a result of frustration, confusion, or discomfort, yet responded to with disciplinary consequences, trust and rapport are reduced and the student’s

level of frustration rises. For instance, if a student throws materials whenever he doesn't understand the directions, helping the student to understand the directions by means of an alternate way of instructional delivery, and teaching replacement behaviors and communication skills, are much more productive than administering traditional behavioral consequences. Teacher memos reflect the thought that students in this setting, those with autism in particular, initially did not seem to understand the purpose or art, and were very frustrated with the open-endedness of it and not knowing what "right answer" was expected of them. This student frustration, combined with a communication barrier, resulted in negative behaviors in place of a more appropriate way of communicating a need for clarity. Antecedent interventions such as visual schedules and consistent, predictable classroom procedures have greatly lessened such behavioral reactions for some students here, fostering better student understanding of art and its expectations, and subsequent engagement and learning as well. This is noted in the following data segments:

- "[Staff member] stated that art is the only place where his behavior does not escalate, it seems to be calming for him," (Daily data, student 5)
- "Another staff commented that a student who tends to rip everything in the classroom does not rip the art books, and he chooses these particular art drawing books during most of his free art choice opportunities," (Daily data, student 8)
- "A teacher told me today, "It's so cool the stuff you do with these guys. They used to hate art but now they love coming, and it's so hard to figure out things these guys like to do in their free time." We talked about how they had seemed to struggle with the concept of art. It seems to me that these students are given so much structure to help them function, that they really have trouble adjusting to a lack of structure. They are frequently given multiple choice question to test for understanding, so when ask suggest they pick a color, or a bin, or a theme...they appear frustrated as if they don't know the "right" answer. It has taken years of exposure to choice making in art, even simply choosing between 2 colors, to get them to understand that art is something they GET to do, and choices are theirs, with no wrong answer," (teacher notes, April 22, 2014)

- “We have started the last three years glazing bowls for a community “Soup Bowls” project. The first year a number of bowls were thrown or broken. Brushes were broken or chewed. Tables and hands were painted on. This year, no bowls were broken. Most are doing better with brushes and sponges and understanding them as art tools. This year I even took the transition kids to a local pottery painting shop to be able to use the skill in the community. They had a great time and did great, and got to incorporate life skills of shopping, paying, waiting as well,” (teacher notes, April 23, 2014)
- “The hardest time is always getting started. Transitions are difficult for many of my students. It seems smoothest when we repeat the same procedures for multiple classes (ie stamping on grids or glazing bowls) where their visual directions and supplies are the same for a few classes. Many of the students, those with autism in particular, seem to need the predictability. Negative behaviors seem to occur more when they perhaps don’t know what is expected of them.” (Analytic memo, May 16, 2014)

Data also shows that punishment and power struggles are not productive corrective measures for unwanted behaviors in this environment, even when those behaviors appear to be attention seeking. This teacher memo explains how this type of behavior is addressed in this setting:

“But some students look at the teacher or staff and smile when they do it, clearly waiting for a reaction. A negative reaction then feeds the behavior. I have found it more helpful to ignore and redirect, or try to develop replacement behaviors that are positive but get the student the desired attention. For example, when Sally tries to eat the markers, I avoid eye contact, often working with her from behind, blocking her arm so the marker can’t reach her mouth. When she attempts and giggles, I ignore, looking at her paper. When she goes back to drawing on the paper, I make eye contact and give smiles and praise. When Joey starts putting materials in his mouth or throwing them, I ask “How many should we do, 5 or 8?” or “should we count out loud or makes marks on paper?” These choices seem to immediately redirect him back to the work, and give him the control he seems to be seeking, but in a positive way, as I am only giving him choices I am good with. This seems to re engage him and calm him down. He usually seems to enjoy accomplishing the art task at that point, especially when we have established a clear number as an expectation. In fact, often he will go beyond. Today he chose to do 10 and to mark them on paper each time. He ended up doing 27!! And, he seemed very proud of that. Usually a TA works with him, and I have repeatedly watched the ensuing power struggle, the reprimands, and the behavior escalation to the point of them removing him from class. Very frustrating. If I reprimand, or tell him what he CAN’T do, negative behaviors increase. I know this, and teach this to the TAs, but if I am not right there, they seem to resort to the power struggle instead of the positive, choice- based redirection.” (Analytic memo, May 23, 2014)

Power struggles create more power struggles and tend to fight the wrong battle, leaving learning objectives in the dust. One of the biggest challenges to addressing behavioral obstacles to learning is staff attitude that negative behavior is a “naughty” choice the student is making, rather than related to the student’s disability. The perception of naughtiness leads to a perceived need for reprimands or disciplinary consequences, which further escalate the negative behaviors. In this setting, regarding unwanted behavior, power struggles and reprimands inhibit learning. Antecedent interventions, choice-based redirection, use of alternate means of communication, teaching replacement behaviors, and positive encouragement for desired behaviors all foster learning in this environment.

4.2 Instructional Contexts that Foster or Inhibit Learning

This section addresses instructional delivery, or more specifically, the methods by which content is presented to learners. Pre-service teachers take methods courses in order to develop the skills and instructional delivery techniques necessary to effectively foster learning. My experience and talking with art teachers from around the country tells me that for art teachers, very little if any pre-service education addresses instructional best practice for students with learning needs similar to those in this study. This can result in frustration for the teacher and inhibited learning for the students. Aspects of instructional delivery that the data show impact learning in this setting include general approach to instructional delivery, teacher-student rapport, communication barriers and alternative methods, and choice making opportunities. Instructional time and scheduling, mentioned in the section on Access to the General Art Education Curriculum, are also factors.

4.2.1 General instructional delivery. Reflective teacher journal data segments reveal the struggle to effectively deliver content in this setting:

“Teaching at this school was very difficult for me to figure out. After over 20 years of teaching art, it seemed that everything I knew about how to teach wasn’t working. I would try to stand in front and instruct verbally, or with printed visuals or the smart board; students wouldn’t even look at what I was doing. Often they would get up, or scream, or leave, or throw something. My initial reaction was that they “couldn’t” do this, that they were not cognitively high functioning enough to understand how to make art.” (April 2, 2014)

Teaching methods, specifically what should to be said or done to foster learning in this setting, are quite different from what is taught in art education methods courses for general education or what may come naturally as a means to motivate, encourage, or redirect. Responses and techniques that have proven to be successful in a general education or parenting setting might actually inhibit learning in this setting. For example, when a student is unresponsive, it seems natural to repeat or rephrase the request, which we tend to do within a matter of seconds. Yet students in this setting have processing times often measured in minutes. When repeated requests are given, the student hasn’t had time to process the first before being barraged with additional information.

When traditional instructional approaches are ineffective, fostering learning requires that teachers have alternate instructional methods in their teacher toolbox to utilize. Yet autism resources specifically for art teachers are extremely limited (Loesl, 2012; Koo, 2010 in Gerber 2010) Furthermore, aspects of classroom context such as the reliance on teaching assistants as part of the instructional delivery process, affect the success or failure of any instructional method. Consider the following reflection from my teacher notes:

“One of the hardest things for me is delivering instructions. I either seem to need to do it one-on-one to meet individual communication needs and processing times, or I have to present to the whole group and hope that the assistants will teach individually with the same intent and goals. This, however, is challenging. Often the assistants will engage in side conversations during instruction and not pay attention. Furthermore, often the assistants’ perception of what students can and should do is different from mine. They seem to view art as a task to be completed, with a pretty project as the outcome and no regard to what the student actually does independently and learns from the process. There

is so much moment-to-moment adjusting of teaching approach that is needed, and the assistants are not trained to do this. I do emphasize with them that allowing students to participate as fully as possible is the goal. They need to be patient and allow wait time for student response to choices and activities. When an assistant completes a project for a student, no learning can be measured and there is no pride or joy in creating for the student. Furthermore, if we are promoting self-determination, it is critical that we allow students to make their own artistic choices, even if they aren't what we would choose. How else can they learn that it is desirable to express themselves? And isn't it best practice to encourage experimentation, risk-taking, trial and error and discovery learning? This demands letting students try things their way, and giving them the appropriate wait time to do so." (April 7, 2014)

The above data excerpts demonstrate the difficulty of presenting general education curriculum in a traditional manner to these students. An efficient way of presenting arts information to a class is by demonstrating in front of the whole group, or presenting and discussing artwork with the whole group. As can be seen in the example above, in addition to a similar excerpt discussed in a previous section about working with teaching assistants, this can be ineffective in this setting. The need to differentiate instruction at such an individual level, and deliver instruction on a one-on-one basis, is very time consuming, especially when cognitive wait time is allotted for student comprehension and response. On another note, the above examples perhaps highlight my own initial faulty reasoning that their reaction to my instructional style was evidence of their lack of ability. Certainly a teacher's belief that students cannot learn affects intellectual access to the curriculum. Fortunately, in this setting, that belief changed over time, but can still be seen in newer staff as they are hired, and in some veteran staff who seem to forget that their students can learn because they have seen so little growth in the time they have worked with the students. Because instructional delivery in an individualized manner fosters learning more effectively than whole group instruction in this setting, every staff member involved in instructional delivery is either fostering or inhibiting learning with their individual approach. It is essential to consider in

any setting where there may be a lack of understanding of disability that is impacting learning opportunities for students.

Some specific instructional strategies shown in the data to be helpful in this setting include prompts, modeling and motivation. There were 319 segments coded for instruction. Of those, 113 were coded for prompts, 54 were coded for modeling, and 44 were coded for motivation. Significant but less frequent coded segments were in the categories of wait time, understanding, and learning styles. Examples from the data related to instructional modeling and prompting include:

- “put beads on himself after modeling,” (Student 1, class 3)
- “after modeling...completed two,” (Student 5, class 6)
- “would only work with me with one on one modeling and prompting,” (Student 10, class 3)
- “strung washers and chimes with modeling and a few prompts,” (Student 11, class 3)
- “follows modeling better,” (Student 13, class 1)
- “rinsed shirt independently after modeling,” (Student 9, class 7)
- “stuck...needed prompts,” (Student 24, class 1)
- “new activity, needed modeling and prompts,” (Student 25, class 2)
- “needed prompts to slow down and think about what she was placing on her guitar, where and why,” (Student 24, class 1) and
- “prompt ‘what do you need?’” (Student 25, noon 2)

It is not an earth-shattering finding that modeling and prompting facilitate learning. However, it matters significantly in this setting because many of these students get “stuck” and are literally unable to proceed without prompting. There are prompting hierarchies in place, however, to

prevent prompting from turning into enabling or avoidance behaviors. For instance, a prompt can be pointing to or looking at a visual schedule to direct the student's attention to the desired activity. It could be a tap on the elbow to promote reaching for a tool or making a choice between items. It could be a question like "What do you need?" Prompts should be the minimal amount of assistance needed to get the student to engage in the learning process as independently as possible. Data in this study show that often over prompting is used to "speed up" the process, yet in actuality it robs the student of learning opportunities, voice, and choice.

Modeling, while also not a new concept in education, becomes vital to the learning process when auditory comprehension is not likely. In traditional art classrooms, modeling, or demonstrating, benefits all students despite the fact that many could learn via written or verbal directives. Here most students do not learn by means of verbal instruction alone, and many cannot read. Some who can read and write learn better with clear written instructions, as can be seen in this art class when white boards are used with individuals to write instructions that would be voiced in a traditional setting. These students benefit from visual modeling as well. Modeling is seen in this setting done one on one or with small groups. Video modeling is also used, where a process is captured on a video clip and shown on a tablet to individual students. Often modeling is done in conjunction with picture icons embedded in a visual task schedule. Task analysis is used excessively in order to break down lessons and activities and create modeling clips and visual supports. Examples of such visual class schedule (Figure 4.7) and a visual task schedule (Figure 4.8) can be seen below.

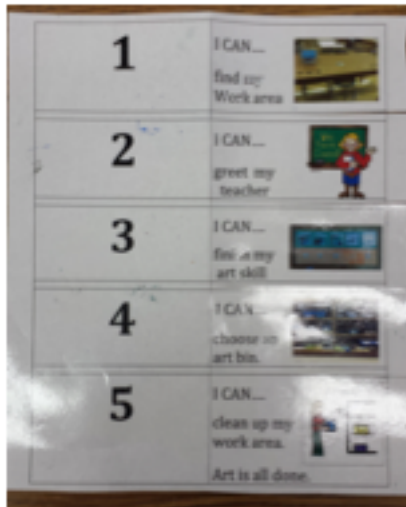


Figure 4.7 Daily Art Class Visual Schedule



Figure 4.8 Visual Task Schedule

Other data excerpts highlighting the benefits of modeling are as follows:

- “followed visual sequence after modeling with minimal prompts,” (Student 5, class 2)
- “followed class schedule and modeling well today,” (Student 5, class 5)
- “liked to mimic me. I would mix, he would mix. I roll, he rolls. I pull and put on, he does. I push down, he does,” (Student 7, class 3)
- “Modeled stringing washers. He strung 4 on one and 2 on another. Showed again. He put one on each.” (Student 7, class 1)

In regard to general instructional delivery data, it was stated above that the third most frequently coded concept was motivation. I propose that motivation stems from multiple instructional components: student interest level, student understanding of purpose and expectations, and rapport with staff members providing instructional support. The latter will be discussed next.

4.2.2 Teacher-student rapport. Rapport between students and their teachers matters. By rapport, I mean a harmonious relationship wherein both parties understand and trust each other.

In student-teacher relationships, trusting one another person means believing they are honest and have each other's best interests at heart. Students should be able to count on their teachers to do their absolute best to provide meaningful, challenging curriculum in a respectful manner, helping students to grow and develop to their full potential. Teachers should expect that all students can learn, that all are worthy of the teacher's best. Building rapport in traditional settings is often accomplished through conversation. Rapport development can be more complicated when one or both of the parties are nonverbal, or perhaps even non-communicative. It is perhaps even more important, however, especially when a student with disabilities depends on that teacher's ability and willingness to pay attention to subtleties in body language and facial expressions to understand that student's needs and preferences. Furthermore, students need to know that teachers respect and value students as individuals enough to treat them as equals and provide educational opportunities as close as possible to those of their nondisabled peers.

The data, in the category of environment, had 50 segments coded for rapport, 35 coded for encouragement, 22 coded for noise, 21 coded for structure, for 18 coded space, and 15 coded for music. One analytic memo specifically addresses this:

"This is interesting because we focus so much on space/noise/lighting types of environmental concerns, yet rapport and encouragement come up significantly more. I would think that all students thrive on positive rapport and encouragement, yet sometimes for non-communicative students that can get forgotten. Meaningful feedback and encouragement can be more difficult to figure out for teachers when student responses look so different. Or there can be trust issues...students need to trust that what they are being asked to do is safe and purposeful, will get a positive response, and will be in their best interest. What does that exactly look like for these students? For example, how might it feel (or affect trust) when a staff member grabs the hand of a non-responsive, non-verbal student, forces a drawing utensil into it, and basically uses the student's hand as a tool? Does the student sense and resent this lack of control or enjoy the motion making he/she would be incapable of on his own? Rapport is critical here...the staff person must know how to read the nonverbal responses of the student and adjust accordingly. This is not something I see very often with Teaching Assistants. It takes time and patience and perceptive skills to develop that level of understanding, but

that is necessary for the student to be able to develop trust and rapport with the staff member.” (Analytic memo, February 15, 2015)

Parents and staff recognize the importance of rapport as well, as is evidenced by the data. Parent survey comments included:

- “more willing to participate with excitement and encouragement of teacher and assistants,” (parent survey, student 11)
- “encouragement helps him learn,” (Parent survey, student 6)
- “thrives with low pressure, independence, and praise,” (Parent survey, student 7)
- “she engages more readily and stays engaged longer when working side by side with a teacher or peer,” (Parent survey, student 9)
- “comfort and timing help learning.” (parent survey, student 25)

Similarly, staff responses included references to rapport:

- “teacher is positive and can bring out the best in her,” (Staff survey, student 16)
- “teacher greets each student and provides lots of positive words and encouragement,”
- “willingness to participate is dependent on ‘encouragement by teacher to have student make choices,” (Staff survey, student 18)
- “needs to be encouraged to try something new. Perhaps she is more willing in art class than in her classroom or at home since this is a staff member who has worked with her for four years.” (Staff survey, student 23)
- “favorite classes in school and activities outside of class are music and art. She blinks (yes) when offered choices related to art and music and has big smiles,” (Staff survey, student 4)
- “walks to art with smile and points to art teacher’s picture in classroom,” (staff survey, student 2)

- “has big smiles for art teacher most days,” (Staff survey, student 4)
- “improved in communication and interaction because she had more opportunity to practice these skills in an environment she truly enjoys,” (staff survey, student 4)
- “likes positive feedback, smiles and does more,” (staff comment, student 7)
- “she is a lot more comfortable in art,” (Staff survey, student 16)
- “tends to work better with Ms. Kelly,” (Staff survey, student 17)
- “this is a student who would refuse to work and who would bite and scratch when she first started coming to art. She now participates without those negative behaviors and often chooses art for noon options.” (Staff survey, student 23)

While the notion of students thriving with positive feedback and encouragement isn’t anything new, it is important in this setting because the natural communication processes in which praise is integrated in regular classrooms do not necessarily occur naturally here. It can be easy to ignore or talk over a nonverbal student. Frustrations with lack of or slow student responses can lead to reprimands or repeated requests, rather than wait time and positive encouragement and support. Mutual rapport is the key to the teacher’s ability to perceive student situational needs and respond accordingly. Building rapport with these students takes time, which is a clear benefit I have as the only visual arts teacher in this school where students may attend for as long as ten or eleven years. I have the advantage of working with these students year after year.

Understanding student needs in this setting is further dependent on alternate means of communication, as will be discussed next.

4.2.3 Communication supports and choice making. While some sort of communication is essential for the transfer of information to take place between students and teachers, communication does not have to be verbal. In this setting, students communicate in many ways

other than verbal. Both receptive and expressive language may be affected by their disabilities, demanding the use of alternate forms of communication. Gestures, such as pointing or reaching, are common. Basic sign language, often incorporating signs unique to a particular individual, may be used. Assistive technologies, such as switch-operated or programmable communication output devices, can be utilized. For students with physical impairments and very limited mobility, communication may be entirely dependent upon reading body language and facial expressions. In any case, teachers must take the time to implement, develop, and understand the communication systems of their students. For example, one participant in this study with Canavan's disease is limited to eye blinks, tears, smiles, and occasional laughter as her sole means of expressive communication. Consider the following data excerpts about her participation:

- "I also try to remember the "least dangerous assumption" principle of it's better to teach as if they understand when they don't than to teach as if they don't understand when they really do. So, I gave the one student (Student4) who can blink yes for choices 10 famous artwork pictures. I shared the artists and a little about each artwork with the class and had Student4 narrow down to her favorite. Interesting, she smiled and blinked the first time she saw the William Johnson artwork, but to make sure we did process of elimination choice making. Still ended up with William Johnson. Hope she wasn't too frustrated with us for making her go through that process, but we wanted to make sure it was her choice." (My teacher notes, April 28, 2014)

Interestingly, I didn't actually know if she would make the requested choice, but offered anyway, as is the concept behind "least dangerous assumption." After she made her final choice, her nurse and I joked with her, asking her if she was thinking, "Alright already, ladies, I already told you once what I wanted and you made me go through this whole silly process of elimination!" That got a shoulder-shaking laugh out of her! Clearly she understood. Other data for her confirms her smiling and blinking and effective means of communicating her preferences:

- “Asked if she was excited about group famous painting, she smiled and blinked yes (she picked it out),” (Daily Student Data, class 2)
- “smiled when she saw the painting...she picked it,” (Daily Student Data, class 3)
- made choices “with limited choices and wait time,” (Daily Student Data, class 3)
- “responds with smiles and blinks when we share about it and say she picked it,” (Daily Student Data, class 2)
- “chose to color flower from limited choices by nurse,” (Daily Student Data, noon 3)
- communicates with “process of elimination and eye blinks,” (Daily Student Data, noon 4)
- “improved in communication and interaction because she has had more opportunities to practice these skills in an environment she truly enjoys and consistently attends.” (Staff survey)

As can be seen by the above examples, communication, however unconventional, is vital to choice making in this setting, as students are often dependent on assistance with getting and using preferred tools and materials. Choice making is foundational to making creative and personal art products. Both communication and choice making are essential elements of developing self-determination skills in students with disabilities, a school wide goal in this particular setting.

4.2.3.1 Communication barriers and nonverbal supports. In this study, the dominant themes in the data regarding communication were the use of visual supports and the use of gestural communication. When students are nonverbal, these alternatives become essential to learning, and when lacking, significant barriers to learning and meaningful participation arise. The following staff comment demonstrates such communication barriers:

[This student] “readily expresses positive prefs verbally. When he doesn’t want something he has a harder time expressing appropriately.” (Daily student data, student 10, class 5)

In cases such as this, when a student does not know how to express *not* wanting something, behavior concerns may escalate or a student may simply shut down or “get stuck.” Visual supports are used here as antecedent interventions, as assisting student understanding of procedural expectations facilitates more independent participation and lessens anxiety and frustration. This is critical here, as the data showed that a high number of behavior-coded segments in this study were anxiety related.

Another staff member elaborated on this when she referred to students’ willingness to participate being dependent on “clear, simple instructions, or choices presented as ‘first this’ then you can do an art box.” These methods of instruction are used here and clearly laid out on the previously discussed visual schedules. The majority of data segments coded for visual supports referred to students using visual schedules for understanding both class expectations and step-by-step instructions. Fewer referred to the use of icons for expressive language, like using icons to request preferred materials or ask for a break.

- Willingness to participate is dependent on “structure, designated spot, clear written instructions,” (Staff survey, student 1)
- “needs visual models,” (Parent survey, student 12)
- “he is very structured so works better with specific tasks and visual schedule,” (Staff survey, student 12)
- “clear, simple instructions, choices presented as ‘first this, then that,’” (Staff survey, student 9)

- “went to board and took ‘I need’ icon chart to her table. Took crayons and paper icons off and gave to [TA]. [TA] started to get. I said ‘[student] gets crayons. She got crayons and paper and took back to her seat.” (Daily data, student 13, noon 3)

The last data example above refers to a student who initially was very resistant to engaging in art at all, and would do so only when given a clear step-by-step set of visual instructions. Over time, she has learned to use the icons for expressive as well as receptive communication, fostering learning by allowing her to make requests for preferred tools, materials, and sensory items for self-regulation.

A number of data segments refer to simple, clear, or precise directions. In this setting that means simple sentence structure such as, “Get smock” or “Choose color.” It also requires the avoiding of questions in place or directives, like “can you choose a color?” Such questions, for a student who is very literal, demand a yes or no answer rather than a color preference. Pairing clear directives with visual icons facilitates learning by providing multimodal instruction, and also allows for the development of recognition and comprehension of written language.

Assistive technologies like Dynavoxes, speech output devices for choice making and icons are extremely helpful for students who are nonverbal, yet can use technologies to say exactly what they want to say. One student participant, for example, is able to type on her Dynavox, often requesting that typed statements be programmed in so that she can restate them at the touch of a button. For example, she wanted to tell her classroom teacher about events over the previous weekend. After she and her teacher finished the communication exchange, the teacher voice recorded the student’s story of her weekend and labeled a button on her Dynavox with “My weekend.” When she came to art, she was able to instantly share her personal stories again, building rapport, and giving the teaching staff background information to include in the daily

lesson, connecting learning to her interests, thereby promoting engagement and fostering meaningful learning. In this example, she had visited a friend on a nearby college campus. As a result of her sharing her excitement about the visit, images from this university were offered as choices for her art project, which thoroughly engaged her and made her finished project much more meaningful to her. Without her assistive technology, and the teacher's willingness to use it with her, none of that would have been possible.

4.3 Discussion

4.3.1 Choice Making Opportunities. Gerber, in "Understanding Students with Autism Through Art," states that the provision of choice-making opportunities is one of the most effective behavioral strategies teachers use (Gerber, 2010). Opportunities for choice reduce negative behaviors and increase positive participation (Dunlap et al., 1991) and are a critical component of self-determination and the development of positive independent living skills (Wehmeyer, 2013). In art class, choice is foundational for personal expression and the creation of personally relevant artwork. When choices must be limited due to cognitive functioning levels, choice-making can be hindered by choice based on placement, for example always choosing whatever is offered on the right side, or resistance to making any choice at all. Student resistance to choice-making opportunities could be for a variety of reasons. They may not understand the choices being offered, they may lack self-determination or communication skills, or they simply may not care about the choice being offered.

As choice making is the goal for fostering learning in this setting, it is important to ensure that perceived choices are true choices and not chance or choices between a few undesired options. One approach used in this setting is offering limited choices more than once, rearranging the placement to see if the same choice is made. Another strategy used here is offering two

options, and including a third option of “something else.” This is used extensively by one participant in this study, sometimes to the point of frustration of staff members. In one noon hour free choice period, this particular student was offered two of her usual favorites. No response. She was then offered two other choices. No response. When “something else” was added, she blinked “yes.” It took a series of guesswork and offerings before working on a group painting she had previously participated in during class time was offered. She lit up with a smile, and blinked yes. Too frequently, this process is more time consuming than staff is willing to endure. The time spent figuring out this student’s true preference created the opportunity for meaningful engagement in the arts, but more importantly, respected the student’s right to be involved in her own education and her value as an individual with personal interests and preferences.

Research has further suggested that choice making opportunities have the greatest impact on academic performance and behavior when integrated with student preference assessments (Morgan, 2006). Morgan suggests that while choice making has been promoted as an effective means of decreasing negative student behavior, this is perhaps due to the mere fact that choice opportunities increase access to preferred items or activities. That was certainly the case in this study, although while perhaps considered a negative by Morgan, for the purpose of increasing meaningful engagement in the art making process, it is a positive. The consistent use of choice making opportunities also creates predictability, as with the use of art bins, which has significantly increased both student engagement and student independence in this setting. It is interesting to note that Morgan also states that a behavioral response *is* in fact a choice. The effects of choice making opportunities are dependent on the purpose of the student behavior (p. 184); for example, if a student can use choice making to avoid an undesired task, choice making will reduce negative behaviors, yet if behavior is attention-seeking, choices that lead to less

attention will likely prove ineffective. In summary, while function of behavior must always be considered, choice making has been an effective strategy in this environment for increasing engagement and laying the foundations for personal preference and self-expression in the art making process.

4.3.2 Assistive technologies and distributed cognition

As stated earlier, the integral use of tools in learning in this setting can perhaps be better understood through a distributed cognition lens, which views learning as distributes across individuals, objects and tools rather than resting solely in the minds of individuals (Gomez et al., 2010). If we look at learning and cognition as distributed across learners, objects, tools, and technologies (Gee, 2004, in Gomez et al., 2010) we must consider assistive technologies in this setting as inextricable from the both the learning process and the demonstration of knowledge or understanding. As demonstrated, technologies such as adaptive tools, visual supports and augmented communication devices do more than allow for access; they are integral to knowing and doing for these students. When the supports are removed, these students can no longer engage in the same manner. The tools essentially hold a piece of the knowing and doing, rather than cognition resting in the mind of the individual. This is so important to recognize, in that it would be easy to misinterpret what students such as those in this study actually know and are able to do if necessary adaptations are omitted. It could easily be assumed that they lack the cognition or skills to participate, when in actuality, as disability theorists would suggest, it is the environment that is disabling them (Walters, 2010).

4.3.3 Teaching assistants and distributed cognition

Much like assistive technologies play a vital role in learning and knowing in this setting, the role of teaching assistants must also be considered. As the results demonstrated, it is often

difficult for teachers to manage just how much assistance is being given, or to find and teach the appropriate boundaries between helping and doing a task for the student. In one sense, the assistance could be viewed similarly to assistive technologies, in that without them students lose access to learning and engagement. For a student with severely limited mobility, for example, the assistant becomes the student's arms and legs. Student 4, for instance, was described earlier as having the cognitive ability to make choices by responding with smiles or blinks to offered options. Without someone who understands her preferences offering her viable options, however, she would lose the opportunity to engage meaningfully, make decisions about her own work, and demonstrate understanding. The teaching assistant, like adaptive tools or visual supports, becomes inextricably connected to knowing and doing for the student.

The problem, however, is finding the balance between assisting and taking over. This is especially true in art making, where often there are many right answers. All too often, adult "helpers" have their own vision of what the art product should look like, and will reprimand the student or make changes on their own in order to create a "pretty" finished product. I cannot overemphasize enough the importance of meaningful art making being dependent on the wishes of the maker being honored. This can be seen throughout the data in this study, where students' enjoyment of the arts rests far more in the process than the product. In my opinion, an unconventional looking product resulting from heartfelt engagement in arts processes is far more valuable than a conventional looking artwork produced by a teaching assistant in place of student involvement.

In either case, assessment can be difficult. If the artwork is a product of both the student and the TA, how does a teacher assess the "independent" work of the student? Furthermore, is that important? I would argue that it is not. While we strive to foster independence in our

students, some will forever rely on a spirit of interdependence. From the perspective of Vygotsky's zone of proximal development, we should use assistance to engage students in tasks they cannot yet do independently, in order to develop further skills (Vygotsky, 1978). Through the lens of distributed cognition, perhaps the teaching assistant's participation is an integral part of learning, and therefore the product of the joint effort is perfectly valid as a demonstration of the student can do with given supports. In typical learning settings, I would expect students to be able to demonstrate skills or concepts established at the beginning of the lesson. In this setting, often art making takes unexpected turns and results in teachable moments that may not align with the initial goals of the lesson. In such cases, teachers are forced to decide if the new learning opportunity aligns with overarching class goals, if such learning has value in and of itself, and if winning the battle to stay focused on the planned goals is worth losing the war of the student's enjoyment of and participation in the arts.

4.3.4 Art education versus adaptive arts

Perhaps the heading of this section suggests an either or approach, which is not necessarily my intent. As every teacher knows all too well though, time is limited. It was previously mentioned that the minimal data on art education skills, techniques, and comments, led me to ask the following question of access:

- Is data lacking because other aspects of learning were more important?
- Is there enough art education curricula being offered in order to give students equal access to the general education curriculum?
- If not, why not? Is it an issue of time? Of perceived ability levels? Of school goals taking priority over subject area goals?
- Is this okay?

I wish I could say that I had great answers to these questions. In reality, they become questions for further research. They do, however, highlight the dilemma of how to best offer a meaningful arts program to students with significant learning differences. The students in this setting have less time per week in their art class than their typically developing peers in mainstream art programs. Yet the physical and intellectual disabilities of these students result in everything taking longer, while additional learning goals (special education and functional life skills goals) are added to their academic plate. Everything cannot possibly fit, so this adaptive arts program attempts to establish priorities in art education and special education, and integrate them with the programming the goals and desires of all stakeholders.

The data from staff and parent surveys regarding student their perceptions of student learning in this setting demonstrated the overall desire for students to develop both an interest in art making and general life skills. This is in alignment with the school wide goals of providing academic instruction while simultaneously provided intense instruction in life skills such as social and communication skills, behavior management, and skills for self-care and independent living. Art instruction, therefore, includes those overarching goals. The consideration of fostering and hindering factors of learning in this setting facilitates curriculum and instruction development that finds a balance between teaching life skills and providing art experiences similar to those in the general education curriculum, while maintaining a focus on the individualized teaching and learning strategies needed to make learning purposeful and meaningful from the perspectives of all stakeholders.

This setting naturally allows for the integration of many best practices in special education research, due to all staff members being special education focused, and all students requiring special education services. In reference to such exclusionary teaching practices, Wexler

argues that we must do better than using “implicitly exclusionary methods of accommodation for ‘nontypical’ students” (Wexler, 2015), in order to create an “egalitarian art room that engages all learners rather than privileging dominant learners, by altering the environments in which we teach to meet the needs of all students.” In theory, I agree. In practice, however, this is not so simple. I would argue that when classes consist of widely divergent learning capabilities, processing times, and sensory needs, it isn’t always possible or desirable to create a singular environment in which everyone benefits equally. Considering sensory stimuli alone, this research study demonstrated that there are students with disabilities who have sensory processing difficulties that benefit from less sensory involvement, and those who thrive in sensory rich environments. In fact, I propose that modifying an environment for a student with specific learning needs that differ from the norm, in fact privileges the non-dominant learner, which is the purpose of this type of alternative programming. Is there a cost when these students are placed in alternative settings? Of course. Yet that is why we have IEP teams of parents, students, teachers, and support services determining best and least restrictive learning environments for students as individuals. Risks and benefits must always be weighed against one another in any programming decision. This setting clearly practices strategies that foster learning, such as the use of modified tools and furniture, the creation of sensory sensitive environments, the development and consistent use of visual supports and visual boundaries, adapted instruction that allows for variance in comprehension and processing times. The political climate at this time, however, is leaning toward all students being educated in their home schools along side their nondisabled peers, with provisions and accommodations to meet their individual learning needs, often easier said than done.

I believe that some of the newer 21st century educational initiatives, such as Lab schools, makerspaces, and personalized learning environments are heading in the right direction, in part because they all focus heavily on individualized approaches to learning. As we move away from schools that are rigidly structured in both scheduling and modes of instructional delivery, we move into spaces where learners are more able to work independently, on personalized curriculum, and at individual paces. Teachers in such settings become learning facilitators and coaches, working flexibly and collaboratively to move students through learning environments and experiences that meet each student's particular learning needs. When students with moderate to severe learning differences are integrated in learning environments, many teaching strategies can still be employed effectively as the proponents of Universal Design (Meyer & Rose, 2000) would attest to. However, when students such as those in this study have very different social, communication, and behavioral needs, teachers must be adequately trained to understand disability and the perception of disability, and their affects on the learner, the other students, and the staff members working with them. Factors shown to foster learning, such as developing rapport and effective communication strategies, providing adequate processing times, adapting the environment for individual student needs, and must be taught, expected, and encouraged. Hindrances to learning must be understood and corrected, such as administering punishments for undesired behaviors that are in actuality disability related, requiring empathy, redirection, and instruction and encouragement for desired replacement behaviors. Staff must be well trained, able to employ strategies such as prompting hierarchies, and cognizant of when to wean assistance to allow for growth and independence. Choice making, shown to be effective for all students, needs to be better understood by staff members as both a teaching strategy and as a foundation for self-expression, self-determination, and creativity development.

The focus of this chapter was determining what factors of classroom context help or hinder learning in this setting. I propose that in *any* setting one must first know *what* learning is the primary goal. In this setting, that is a bit unclear. As a district employee, I was hired to teach art. As a staff member at this particular school, I am expected to be part of a collaborative team, teaching functional life skills, social and communication skills, behavior management, and job readiness skills. As a teacher of students with IEPs, I am expected to know and follow each students IEP, integrating strategies that assist in reaching those goals. I am supposed to treat all students as equals, providing similar curriculum and expectations, yet differentiate and meet individual learning needs. Expected strategies and education ideals can be contradictory, and time does not permit teaching from all of the above perspectives (art teacher, life skills teacher, behavior manager, etc.) to an extent that would even come close to matching the learning targets in the general education population. Teachers need direction as to what is important, mandated, desirable, and highest in priority when time does not permit all to be learned. They need training and support for meeting the learning needs of students with significant learning differences. Most importantly, teachers need some of the same contextual factors that the students need for growth and learning: support and encouragement, and a safe and respectful environment in which they are willing to take risks and try new strategies without fear of failure or reprimand.

In terms of general application of this chapter, I propose that arts instruction in settings such as this be sequenced in a fashion that recognizes that students are at vastly different levels of artistic development, as well as life skills development. Attempting to teach a student art history before a student understands how to use basic art tools is unlikely to be affective. Trying to teach academic skills before students can communicate expressively and successfully navigate daily personal care and social situations may not be educationally efficient. As teachers, we need

to know was is most important for each student to learn right now, and what they need to learn to live fulfilling, productive lives as independently as possible, while recognizing the need for interdependence. We also must be willing to look at learning and cognition from perspectives that may diverge from the common methods of teaching and learning commonly practiced in today's classrooms.

Some of these students will go on to hold jobs and live somewhat independently. Others will live in group homes, assisted living facilities, or nursing homes. In any case, although I have had very little guidance as a teacher in this setting, I would hope that all would leave this school with enough understanding of art, joy of creating, and basic life skills necessary to engage in the arts wherever they go. I hope to focus on top priority goals and teach with practices that foster learning avoiding those that hinder learning, spiraling both curriculum and teaching strategies, slowing integrating strategies more similar to general education and community arts environments in order to prepare students for going back to their home school and enjoying life long arts participation.

Chapter 5 Results: Student Learning

This chapter seeks to examine the data related to the research question, “What do students learn in this self-contained special education art class?” As a veteran teacher, I must preface this chapter with the acknowledgement that what a teacher proposes to teach and what students actually learn are not always one and the same. Teachers can present content that students misunderstand or fail to understand; unintended student learning can occur, both positive and negative; hidden agendas can be present in the curriculum or instructional delivery; and social and cultural learning take place as part of the structure and expectations of both learning and the environment. Furthermore, perceived learning by other stakeholders matters in this setting. As both teacher and researcher, I recognize that art skills and concepts are being taught and learned, although not necessarily with the depth or the same chronological age level outcomes. Such learning in a visual arts program, however, is expected. I am more interested in examining other aspects of learning, such as distributed learning and functional life skills as integrated into art making, that highlight the intersections of learning science theory, art education theory and practice, and special education theory and practice. This chapter cannot begin to address the full scope of all potential learning outcomes, so the focus will be on areas in which the data show significant patterns of learning or perceived learning by staff and parents, which may be different from the expected outcomes of a traditional art program. In many instructional programs, as teachers begin a new lesson, it is common practice to assess background knowledge and current understanding of the content to be covered. Therefore, I will begin with data on participants’ prior art experience.

5.1 Prior Visual Arts Experience in Relation to Learning Objectives

In this setting, although these are mostly middle and high school age students, many do not have the background knowledge or experience in art that one would expect of a secondary school student. Therefore, as I examined student learning in the data, I had to also consider prior experience. Many of these students attended this school for years before an art program was initiated, meaning they had little to no formal art instruction before that time. For example, most of my transition students, ranging in age from 18 to 21, had attended this school for eight to ten years prior to my arrival and the start of the art program. Additionally, many students come to us from pullout programs or home school settings where no art programming was available. Additional information regarding prior experience was gathered through data from the parent questionnaire, in which parents were asked about art experiences their child participates in outside of school. Some students have had limited arts experiences at home, others have had none, as can be seen by the following parent survey responses:

- “doesn’t do any art at home,” (Parent survey, student 28)
- “enjoys ‘some’ art at home,” (Parent survey, student 10)
- “does not enjoy art at home,” (Parent survey, student 33)
- “likes art at home ‘only occasionally,’” (Parent survey, student 17)
- “does not enjoy art at home,” (Parent survey, student 20)
- “does not enjoy art at home,” (Parent survey, student 19)
- “I do not do art with [him],” (Parent survey, student 19)
- “doesn’t really enjoy art at home,” (Parent survey, student 14)
- “doesn’t enjoy art at home as much as school,” (Parent survey, student 7) and
- “enjoying more than used to at home but art is not a typical go to activity.” (Parent survey, student 12)

One parent, after leaving most answers blank, wrote on the bottom of the survey, “not really sure – have not done much w/ art at home.” (Parent survey, student 26) This data represents ten of the 31 students who turned in completed parent surveys. The three students whose parents did not complete surveys, according to their classroom teachers, do not engage in any art activity outside of school, which if accurate means that at least 13 of 34, or roughly 38 percent, lack prior art experience.

The lack of prior experience combined with the presence of cognitive disabilities, upon beginning this art program, resulted in students seemingly not understanding what art is, or what the purpose would be for creating art. One of my first years of teaching here, a student with higher functioning autism verbalized, “why are we doing this anyway?” on many occasions. Unless the activity was producing a functional piece of artwork for which he saw an immediate use (i.e. this bowl will be sold at the craft fair to earn money to buy playground equipment), he couldn’t seem to appreciate the joy of creating in and of itself. For example, consider the student referred to in the following excerpt from my teacher notes:

“A teacher told me today, ‘It’s so cool the stuff you do with these guys. They used to hate art but now they love coming, and it’s so hard to figure out things these guys like to do in their free time.’ We talked about how they had seemed to struggle with the concept of art. It seems to me that these students are given so much structure to help them function, that they really have trouble adjusting to a lack of structure. They are frequently given multiple choice question to test for understanding, so when ask suggest they pick a color, or a bin, or a theme...they appear frustrated as if they don’t know the ‘right’ answer. It has taken years of exposure to choice making in art, even simply choosing between 2 colors, to get them to understand that art is something they GET to do, and choices are theirs, with no wrong answer. One student (#1) still really struggles with that. He will say ‘you tell me’ and will only choose after I say a few times ‘What do YOU want. There is no right answer. What do YOU like?’” (April 22, 2014)

It would take time, exposure, and experience creating artwork that didn’t require one right answer, to develop an understanding of “getting to create art” versus “having to complete a task that the teacher expects done a specific way.”

Similar situations arise each year, as new students come to this school from various educational backgrounds, many of which exclude arts opportunities as students are generally coming to us from self-contained programming programs within other schools. A lack of experience with art materials and tools creates the need to teach tool and material usage at a basic level. From a constructivist viewpoint, students learn best by constructing knowledge and understanding through experiential participation in activities, or learning by doing (Dewey, 1938). Learning is more meaningful when it is integral to participation in a desired activity. Students learn best when there is a purpose and need for the skill or knowledge to be acquired. For practicing artists, the “why” behind creating art may be more about experimentation and creative discovery than meeting external objectives. For instance, consider the following enduring understandings from the NCCAS:

- Enduring Understanding: Artists and designers experiment with forms, structures, materials, concepts, media, and art-making approaches. (Visual arts creating, process component: investigate)
- Enduring Understanding: Artists and designers balance experimentation and safety, freedom and responsibility while developing and creating artworks. (Visual arts creating, process component: investigate)
- Enduring Understanding: People create and interact with objects, places, and design that define, shape, enhance, and empower their lives. (Visual arts creating, process component: investigate)

Research from Harvard’s Project Zero also includes such learning goals, as one of their eight identified visual arts habits of mind, in their Studio Thinking Book (Hetland, 2007):

- “Stretch and explore: Learning to reach beyond one’s capacities, to explore playfully without a preconceived plan, and to embrace the opportunity to learn from mistakes.”

Yet teaching students that artists often make art simply because they enjoy making art is, while abstract and therefore difficult in this setting, an important visual arts learning objective.

Prior experience in art making affects how students understand art making and its purpose, as well as their present level of functioning related to art skill development. The data from parent surveys show that almost a third of the student participants have little to no experience in art making outside of school (9 of 31). Those whose parents listed experience defined the participants’ art involvement, in order of frequency, as coloring (16 of 31), painting (9 of 31), crafts (9 of 31), and drawing (5 of 31). When I began teaching in this environment, very few students knew how to use basic tools like scissors or glue bottles. Many had not been taught how to grip or use drawing and painting tools, or provided the necessary adaptive resources to do so. Sculptural materials like clay and paper mache were brand new experiences. Furthermore, a lack of art making experience equated to a lack of learning how to manage workspaces and care of tools and materials. While these are generally skills and concepts taught in preschool or primary grades, and are represented in the Common Core art goals at a primary level, many of these students had not demonstrated proficiency with such skills prior to their participation in this program. Managing tools, materials, and workspaces align with school-wide functional life skills goals and self-determination development skills, as students learn skills and develop independence in navigating and participating in their environment. Such learning is also consistent with visual arts habits of mind (Hetland, 2007), such as:

- “Develop craft: Learning to use tools, materials, and space,”

- “Engage and persist: Learning to embrace problems of relevance within the art world and/or of personal importance, to develop focus conducive to working and persevering at tasks.”

Next, let’s look at other educational goals for these students at this particular school, both school-wide and specific to the arts program.

5.2 School-wide and Program Specific Learning Goals

The overarching goals specific to the visual arts program in this setting reflect the need to address general arts participation skills and habits. They are intentionally broad enough to overlap with functional life skills that are integrated into learning in this setting. I developed these after the first year of teaching in this environment, based on what I had found to be overarching themes spanning what I already knew about art education, what I had learned about special education and my students’ IEP goals, and research I had done on art therapy and adaptive arts. The four overarching goals in this program are as follows:

1. Students will make personal choices in the creative art-making process.
2. Students will demonstrate appropriate art tool and material usage.
3. Students will initiate various parts of the art-making process.
4. Students will engage in various parts of the art-making process.

While traditional art education learning, such as art skill and technique development, art history and criticism, self-expression opportunities, and cultural awareness, is always part of each learning unit’s objectives, these overarching program goals allow for the continuous integration of functional life skills and visual arts learning. While not every student can currently identify famous artists, or independently paint a landscape, all students can make choices; all students can learn to use tools as some level; all students can initiate some part of the art making process; and

all students can engage in art making in some capacity. School-wide goals in this setting include improving social, communication, and daily functional life skills such as navigating one's environment, knowing and having the capacity to get what one wants and needs, initiation and engagement in art making activities, care of oneself and one's surroundings, and use of basic tools and utensils. Part of knowing what one wants and needs, a goal of self-determination instruction, is the exposure to and development of personal interests in relation to leisure and recreation. Many of these students will have limited capacity for employment. Many will live in group homes or participate in day programming. Without the ability to express the desire to engage in activities of interest, and the capacity to acquire the necessary tools, materials, and assistance, many of these students as adults risk doing nothing in their free time. Arts and crafts activities are commonly part of community programming, day programming, group home schedules, and nursing home offerings. My goal is to prepare them to be able to participate fully in any arts environment in which they find themselves, and help meet the individual learning goals of the educators, support staff, parents, and other IEP team members who chose this setting as the least restrictive learning environment for these students. Because many of these students cannot verbally express what they know or have learned, and most have limited ability to provide insight on their learning through traditional assessments, feedback on perceived learning by those who work most closely with the students, support staff and parents, is valuable feedback.

5.3 Staff and Parent Perception of Student Learning

In each class throughout this study, I collected daily data on participants' initiation, engagement, tool and material usage, sensory tolerance, limited and open-ended choice making, meaning making, creativity, and sharing and responding to art. This data was combined with the staff and parent survey data and teacher notes. The following sections will examine the data

results specific to arts learning and special education learning. In each of these sections, data triangulation was employed, correlating daily student data, teacher journal notes, parent survey results, and staff survey results. It was my hope that scores for each category of student's daily learning data would also show quantifiable growth in some of the numerically scored categories, but nine weeks was not long enough to show significant growth quantitatively, with these particular students. This is expressed in one of my previously mentioned teacher journal notes:

“Measurable growth that in my former schools would've taken minutes, may take years here. For example, I think of one girl who when I started working with her four years ago, would not engage at all unless someone sat with her and continuously prompted her with exactly what to do, where to make a mark, etc. The most she would do is make a single mark on paper when prompted. Now she will come in the art room, get paints and water and brush and paper, and go to a table and paint.” (April 7, 2014)

Growth is evident, yet this was over a four-year time period. This type of growth can be recognized in the data through analysis of teacher, staff, and parent comments even though such significant growth isn't visible in a nine-week period of data collection in the form of student scores. Therefore, the results are heavily focused on perceived learning by parents and staff, as evidenced by questionnaire responses, teacher notes, and analysis of student artwork over time.

5.3.1 Parent perception of student learning in this program. Parents are valued stakeholders in education. In this setting, their value is significantly more important, as they know their children the best, and often serve as their children's voice. They also see evidence of how learning and growth are applied outside of the school setting. The dominant themes from the parent questionnaire data were:

- an increase in interest and participation in art making (10 of 31 parent surveys),
- an improvement in life skills, i.e. tool usage, direction following, engagement in activities, communication, and independence (10 of 31 parent surveys) and;
- trying new things and improved sensory tolerance (12 of 31 parent surveys).

Interestingly, only four coded segments referred to using art as a form of representation, other than one parent who commented on increased use of detail in his son's work. This suggests either that parents did not care as much about that more traditional aspect of visual arts engagement, or perhaps they are unfamiliar with the current goals of general visual arts education.

5.3.1.1 Increased interest and participation in art. Regarding interest and participation in art, one parent commented that her son “will now get his own materials out on his own and does art by himself instead of mom getting the materials out for him.” (Parent survey, student 5) Other parent comments, when asked what changes they have seen in their child since participating in this art program, included:

- “more willingness to participate in art activities,” (Parent survey, student 12)
- “makes cards at home,” (Parent survey, student 3)
- “better coordination and willingness to try different art activities,” (Parent survey, student 11)
- “increased willingness to try various mediums,” (Parent survey, student 7)
- “likes to help out with my art and other people's art too,” (Parent survey, student 15)
- “wants and has the effort to do art things,” (Parent survey, student 9)
- “he seems to be more patient than he used to be and less hesitant to touch various art materials,” (Parent survey, student 17)
- “increased independence – interest in new activities,” (Parent survey, student 23)
- “wants to draw more often,” (Parent survey, student 27)
- “the ability to create and reproduce,” (Parent survey, student 33) and
- “this is a quality of life action.” (Parent survey, student 4)

Increased interest in art has been a common theme in general in parent responses over the past few years. Parents who comment on this share the desire for their children to have leisure activities that interest them, that are accessible to them, and that allow them to participate in social and community activities. They want their children to have the same opportunities as their nondisabled peers to experience the pride joy of creating, which relates back to the problem of assistants “fixing” artwork for them. Usually, the students know that it is not their work, and certainly parents recognize work that is beyond what their child is capable of producing. The students recently glazed ceramic plates as a Christmas gift. The first layer of glaze was done by students with assistance only helping where physically needed. The next layer involved adding a



Figure 5.1 Student stencil glazing plate

symbol with the use of stenciling (Figure 5.1). While they did participate in the phase of the glazing, the assistants seemed to view this stage as needing to have a more professional finished look, and in many cases, over-assisted in order to make sure the present to go home was “high-quality” enough. Parents are fully aware of their children’s present level of motor skill

development, and recognize when a product does not match that perceived level of development. On the other hand, students were given pizza boxes to decorate and use as gift boxes (Figure 5.2), and teaching assistants were specifically told not to “fix” anything. As a result, TA’s seemed less attached to their vision of a properly finished product with the boxes than with the plates. This is important, as it makes clear the



Figure 5.2 Student-decorated gift boxes

necessity as a teacher of giving clear instructions to the teaching assistants as to how much help

should be given at specific times. Furthermore, as an instructor, I need to remember how important it is to send work home that is authentically the student's as much as is possible. Multiple parents verbally shared that while they appreciated the plates, they cherished the boxes because they could tell that their children had made them, and a few parents sent thank you notes expressing the same sentiment. This demonstrates the notion that arts learning in this setting is about more than the mastery of art facts, skills, or techniques. It is about acquiring the joy of creating and the capacity to express, initiate, and engage in the arts.

5.3.1.2 Improved life skills. The second most frequently coded data category for parent perception of art learning was improved life skills. The following data excerpts from the parent surveys, in response to the question “what skills have you seen this student develop through art class or working with art materials?” exemplify such learning outcomes:

- “improved imitation and direction following,” (Parent survey, student 7)
- improved “sharing and mimicking,” (Parent survey, student 14)
- “he seems to be more patient than he used to be,” (Parent survey, student 17)
- improved skills of “sharing, put in and take out, colors,” (Parent survey, student 18)
- “pays attention better,” (Parent survey, student 20)
- “improved letter and number recognition,” Parent survey, student 7)
- “pride in what she does, better communication,” (Parent survey, student 24)
- “since participating in school art, more interested in writing his name and modeling clay,” (Parent survey, student 17)
- “improved fine motor skills, “ (Parent survey, student 12)
- “learned how to color and cut with scissors,” (Parent survey, student 13) and
- “a bit more OT [occupational therapy] skills and steadiness.” (Parent survey, student 28)

The twice weekly participation in this art program, from a parent perspective, results for some students in improved direction following, sharing, attention, patience, communication, and tool usage; all skills that prove useful in many life circumstances outside of the arts. While these would be desirable outcomes in most educational settings, at the secondary level they are generally incorporated as part of classroom management plans rather than explicitly taught. For students with cognitive disabilities, development of skills such as direction following, sharing, tool usage, and communication, often requires ongoing, integrated instruction. As previously discussed, many of these students struggle with the transfer of learning from one setting to another and rely on assistive technologies and learning supports such as prompting and visual supports. They may have learned how to follow directions in specific classroom activities, yet when they transition to the art room, those skills do not necessarily transfer automatically. They need the repetitive exposure to using assistive technologies and supports in various settings. It would seem that the use of such strategies to teach life skills in an integrated fashion is indeed producing learning outcomes for these students, as this was a dominant theme in the parent surveys.

5.3.1.3 Improved sensory tolerance. The third most dominant theme in the parent perception of learning category was improved sensory tolerance. As previously mentioned, many of the students in this program have sensory processing disorder (SPD). Some display intolerance for specific lighting or auditory conditions. Some are hesitant to touch various materials. Some desire intense sensory experiences, often to the point of overstimulation. Sensory integration and adaptation is a school-wide expectation. Sensory intolerances are limited where possible, and sensory experiences are provided for the purposes of engaging students in multimodal manners and also for attempting to desensitize students who have extreme aversions

to common materials that prohibit them from fully engaging in activities. Examples of parent comments in relation to sensory improvements are as follows:

- “the more she’s exposed to different materials, the more it helps her sensory processing,” (Parent survey, student 16)
- “he seems to be more patient than he used to be and less hesitant to touch various art materials,” (Parent survey, student 17)
- “increased willingness to try various mediums,” (Parent survey, student 7)
- “more sensory materials engage her,”
- “sensory involvement helps willingness to participate,” (Parent survey, student 28)
- “more tolerant of using different materials, sensory improvement,” (Parent survey, student 20) and
- “holding on to things longer, doesn’t pull away from different sensory materials as much.” (Parent survey, student 20)

Data from my teacher notes further exemplifies the sensory-based learning that takes place in this setting:

“The “puppets” project is only being done with the students in the lower functioning classrooms. It is in collaboration with the music teacher, as student will create “self-portrait puppets” on large sticks that will be able to be held up and made to “dance” to the music in their music concert. The focus is on sensory involvement (using various fabric and material textures, ripping fabric, bending and curling pipe cleaners, etc.) and personal choice making (colors, fabrics, placement, personalized items to them). Students seem to most enjoy ripping the fabric, the feel and sound of ripping as well as the gross motor involvement.” (teacher notes, April 7, 2014)

“Stringing wind chimes today. This was a ceramics project. I try to do one clay project every year. Each time I repeat a material or technique, students seem more open to it. We have a lot of students with sensory intolerances, so this seems to be good for sensory exposure. We also have a lot of students who love any sensory involvement like clay or sand or shaving cream. We have worked on the concepts of texture and slabs previously; this was a way to spiral back to that. Many of the kids need deep pressure activities and like to roll the clay or press hard with their palms. I give them lots of tool choice for

texture and have found that my expectations need to loosen up regarding how their textures will look. If they are using tools safely and joyfully engaged, I let them work “messier” than I would normally be okay with. I try to let them do it their way as much as possible, as my goals are appropriate and safe tool usage, and initiation and engagement in arts that can be a lifelong leisure choice. One of my students functions at about a 6mo cognitive age level, and just likes to squeeze the clay tightly in his hands. That’s okay...he is engaged. I used the squeezed clay pieces as his chimes. The hard part is convincing staff to let the projects be the outcome of the KIDS’ work as much as possible and not try to “fix” everything.” (teacher notes, April 23, 2014)

“Tying and rinsing shirts...many of the students do not seem to understand that they are designing a shirt, but nevertheless seem to love playing with the rubber bands, squirting the dye bottles, and playing in the water when rinsing the shirts! Definitely sensory engagement!” (teacher notes, May 12, 2014)



Figure 5.3 Sensory experiences with shaving cream and student-made aqua mats

I find it interesting to consider how these types of sensory learning experiences can challenge traditional assessment measures, which can be problematic for teachers who know such experiences are beneficial to their students, yet need concrete assessment data for administrative support of their program. This will be discussed in the discussion section of this chapter. The next section will examine how staff perceives student learning in this program.

5.3.2 Staff perception of student learning in this program. The dominant themes in the data from staff responses were similar to those in the parent responses. They included:

- increased interest in art,
- improved life skills,

- increased independence, and
- increased in willingness to try new things.

Again, the lowest numbers of comments were in the categories of “representing” in art, creativity, self-esteem, and sensory. It is intriguing that there were a low number of responses by staff related to sensory improvement, when that was a high frequency comment by parents.

Perhaps staff is accustomed to sensory engagement activities as well as adaptations for avoidance of things they think students will not tolerate. This difference could also be a result of staff members’ consistent involvement with the students’ arts and sensory activities, such that they simply do not notice the changes like the parents do.

5.3.2.1 Increased interest in art. Referring to a noticeable increased interest in art, a staff member commented that one particular student “would bite and scratch when she first started coming to art” yet “she now participates without those negative behaviors and often chooses art for noon options.” (Staff survey, student 23) Other data excerpts from the staff surveys further exemplified growth in art interest:

- “attends to tasks longer, spends more time on art projects,” (Staff survey, student 1)
- “he really enjoys art class...the relaxed atmosphere and opportunity to work with different drawing tools,” (Staff survey, student 1)
- “he has begun to request materials from the art room,” (Staff survey, student 8)
- “has picked art for noon options a few times rather than his normal choice,” (Staff survey, student 10)
- “seems to be more interested, makes more choices and more independent,” (Staff survey, student 11)

- “in the beginning, would always get up, not sit and do art work, now gets work done with only sometimes out of seat,” (Staff survey, student 11)
- “increase in participation,” and (Staff survey, student 13)
- “consistently interested in art but becomes interested in trying the new things worked on in class. Becomes serious but content while doing artwork.” (Staff survey, student 15)

A similar data excerpt came from the teacher notes:

“[The student supervisor] brought a tour through. Told them that he sees a progression with students over the years, for example, kids who wouldn’t even touch art materials are now painting independently or kids who would initially refuse to come to art now come willingly and engage in art.” (Daily data, student 17, class 6)

Like parents, staff members often comment on how difficult it can be to identify preferred leisure activities for students, and express the importance of doing so in order to enhance the quality of life for students as they progress beyond their school years.

5.3.2.2 Increased life skills and independence. The second most dominant theme in the staff survey data was the increase in life skill development, including independence. This is a category of learning that would probably be most accurately measured by support staff, as they are working most closely with the students and have the primary responsible of administering a hierarchy of supports. They would be most likely to notice a different in intensity and frequency of supports required for student engagement in art making. Comments in this category, taken from the staff survey question asking what changes or skill development they have noticed, included:

- “more independent and able to work on his own in art,” (Staff survey, student 2)
- “more independent,” (Staff surveys, students 3, 7, 12, 13)

- “makes more choices and more independent,” (Staff survey, student 11)
- “doing much better with art materials from using it to putting away,” (Staff survey, student 2)
- “verbally able to tell the teacher what she needs, more independent,” (Staff survey, student 16)
- “a bit more control with tools,” (Staff survey, student 19)
- “follows directions easier, less needy once re-assured she can do it,” (Staff survey, student 9)
- “has done more independent work, skills have improved in fine motor areas,” (Staff survey, student 12)
- “he is much more accepting of listening to instruction or ideas about his projects. He has developed greater skills. He has broadened his area of interest in things he will draw,” (Staff survey, student 22)
- “ability to make choices. Also the ability to create art independently w/ preferred materials,” (Staff survey, student 20)
- “increased ability to express himself as the year went on, able to work without direct supervision after given instructions,” (Staff survey, student 21)
- “independence, creativity,” (Staff survey, student 21)
- “more able to adapt to new ideas and suggestions in art class. He has broadened his areas of interest,” (Staff survey, student 22)
- “better able to follow a schedule, colors more and chooses different colors, at a beginning level for adaptive scissors, lets her choices be known,” (Staff survey, student 23)
- “has tried many new things, and communicated more,” (Staff survey, student 24) and

- “begins tasks more independently, communicates problems or choices more. Also tries new art bins and really enjoys it.” (Staff survey, student 24)

Further exemplifying growth in daily life skills and independence, in addition to art skills, let’s recap two students’ progress over time. The following excerpt from previously quoted teacher notes describes one student’s (student 25) overall progress:

“I think of one girl who when I started working with her four years ago, would not engage at all unless someone sat with her and continuously prompted her with exactly what to do, where to make a mark, etc. The most she would do is make a single mark on paper when prompted. Now she will come in the art room, get paints and water and brush and paper, and go to a table and paint.” (April 7, 2014)

Furthermore, five years ago, she was not using a scissors or willingly engaging in painting, two of her current favorites. She would only engage for a few minutes, with direct supervision and prompting, whereas now she will work independently for up to 30 minutes, as can be seen in the following data excerpts:

- “painted consistently for 25 min. small brush strokes, overlapping and blending together colors. Often many brush strokes in same place same direction,” (Daily data, student 25, noon 4)
- “One student in particular did not initiate an art activity for the first two years. When she did start an activity, she would only engage with someone sitting next to her continuously prompting her. Now she comes into the art room, gets a paint bin (does wait for me to notice her and get her paper) and paints independently for 30 minutes. She has even occasionally been found in the art room painting, all by herself, when she was supposed to be in another class. Not that it’s good she was where she wasn’t supposed to be, but she chose art, initiated, and engaged independently...that’s pretty cool.” (April 22, 2015)

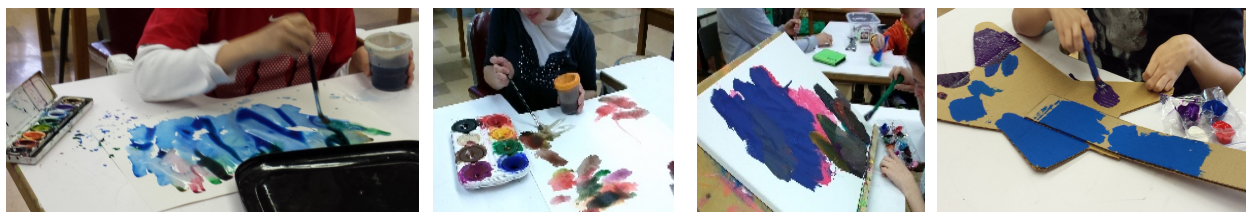


Figure 5.4 Painting series, Student 25

As a nonverbal student, she still often has difficulty communicating what she needs. For example:

- “gets smock. Sits and waits to be asked what she wants,” (Daily data, student 25, class 6)
- “gets bin and brush. Waits for paper,” (Daily data, student 25, noon 1) and
- “waited outside door. Went to wrong seat.” (Daily data noon 1)
- “got stuck cutting...circular and smaller and smaller pieces, mincing images. Will follow marker outline,” (Daily data, student 25, class 2)



Figure 5.5 Student 25 cutting.

This piece ended up in tiny pieces.

When cutting, for instance, she can follow a marker outline, stopping at the appropriate time. Without the visual guide, however, she will continue cutting in a spiral fashion or cut the image into small pieces (Figure 5.5). While she stills needs

adaptations and repetitive practice, her skill development has afforded her greater independence and has expanded her options for art making. She has learned about the joy of creating, which for her, like many students in this setting, is more about process than product, as is expressed in the following data segment:

- “[She] doesn't seem to care about how others view her work. Seems to be much more of an internal enjoyment of art process for her.” (Daily data, student 25, class 7)

The cognitive disabilities of the students, like the above student, in this setting demand a significant amount of repetition and practice opportunity for skill development. Integration of life skills into art making provides such opportunities.

5.3.2.3 Increased willingness to try new

things. The last dominant theme in the staff survey

data was the increased willingness to try new things.

This is exceptionally relevant since many of these students have autism, and subsequently persevere

on one or two preferred areas of interest. They

commonly are resistant to new activities or altered approaches to something they have done

previously. Let's examine growth over time for a second student. This student (student 22), has



Figure 5.7 Circus drawing with people and few animals, Student 22

done line drawings of animals for years (Figure 5.6). He had a consistent style of overlapping side and frontal views, and incorporating specific details, like wrinkles on the trunks of elephants. He was very resistant to

filling areas in or adding backgrounds. He was also

initially unwilling to use art materials other than

markers, crayons, or colored pencils. Over the years, he began to take suggestions to expand his

drawings, for instance drawing farm animals or circus animals instead of jungle animals, and

drawing animals in motion. After a few years, he became willing to draw his animals in alternate

settings, such as riding in a hot air balloon when we made air balloons in art, eventually adding

people and more frequently limiting or eliminating the animals (Figure 5.7). Now he regularly

engages in many art mediums, from paint to clay. He has also become willing work with other

subject matter, such as in the mixed media house project shown below (Figure 5.8).



Figure 5.6 Early animal drawing, Student 22

Upon close examination, outlines of his animals are visible, drawn with markers in the background. He also chose animal fabric for the roof, although surprising he cut through the animals, something he would not have done in the past. In fact, witnessing someone else cutting through the animals on the fabric would have previously sent him into a fit of screaming.



Figure 5.8 Mixed media painting with fabric house, student 22)

Data from multiple sources demonstrates growth in this student:

- “Details! His accuracy is age appropriate but he doesn’t care as long as he gets the details drawn that are in his mind (ex: elephants must have wrinkles on their trunks and toenails).” (parent survey)
- “He is much more accepting of listening to instruction or ideas about his projects. He has developed greater skills. He has broadened his areas of interest and things he will draw” (staff survey)
- “He has become more able to handle mistakes and communicate the need for help. Also much more open to unstructured times/ bin choice. Used to only want big paper and markers or paint to draw animals. Now chooses bracelet loom, tangrams, Play Doh, and others.” (staff survey)
- “Artwork from his first couple years was limited to mostly drawing animals with markers, always in a similar style and often almost the same drawing. His work progressed to drawing his animals in new environments (like at a campfire when we were working on things for our camp day, or in a hot air balloon when we looked at

transportation imagery. Most recently he has been willing to paint and craft artwork without his animals, like painting ceramic bowls, or integrating non-drawn animals like creating his guitar with Modpodge photos of animals incorporated into the guitar design, or adding sculpted animals to his tree of life. (teacher notes May, 2014)

This particular student's progression exemplifies learning in the areas of the visual arts and general life skills. This growth has taken significant flexibility and repetitive instructional strategies, along with patience and time. This student, however, represents the higher end of cognitive functioning among the students in this setting. Many of these students never reach the artistic stage of development at which this student began in this program. Therefore, it is critical to consider learning in this setting that is less standards-based and more therapeutic in nature.

5.4 Adaptive arts and therapy related learning

Visitors to this school, as well as people who know where I work and what I do for a living, often ask if the art program in this setting is art therapy. While this is not actually an art therapy program, nor am I an art therapist, art participation in this environment can be very therapeutic for students. According to the Birmingham Centre for Arts Therapies, "art therapy is a profession of reaching and touching emotions through art work; recognizing feelings and helping to identify them in oneself and others. The goals of art therapy are to move towards healing and growth (Osbourne, 2003)." Osbourne notes that the goals of art education are based on direct instruction, high standards, and skill development, whereas the goals of art therapy are based more on emotions and empathetic communication. Students in this setting often have no verbal means of expressing thoughts and feelings. Many are currently using visual communication systems. The visual arts can be a very effective means of expressing and communicating

emotion. Furthermore, the arts can be used to meet physical and occupation therapy goals, as gross and fine motor skill development is incorporated into arts lessons.

Data from this study demonstrated perceived learning in the area of art as therapy.

Consider the following data segments:

- “he has become inclined to use art as a calming strategy,” (Staff survey, student 5)
- “less verbal in a positive way – words are not as repetitive,” (Staff survey, student 5) and
- “becomes serious but content while doing artwork.” (Staff survey, student 15)
- “uses art in a therapeutic manner. It is calming for him.” (Staff survey, student 22)
- “enjoys [the] motion of art making,” (Staff survey, student 4)
- “he is happy doing art,” (Parent survey, student 15)
- “painting really calms him,” (Staff survey, student 11)
- “comes to art during school-wide events that are too over stimulating, (Staff survey, student 22)
- “seems to like the sensory quality of paint, and will often paint on brush handle, the water dish, or her fingers, very slowly and methodically,” (Staff survey, student 14) and
- “hopefully [he] can learn to cope with his negative/angry emotions and feelings with his drawings.” (Parent survey, student 22)

Furthermore, previous sections included data excerpts representing learning in relation to sensory integration, gross and fine motor skills, communicating preferences, and the development of general life skills, all goals consistent with those of therapy programs. In conclusion, while diagnostic art therapy is not a goal of this program, it would seem that perhaps art therapy strategies could be further researched and integrated here, possibly integrating self-regulation research. All could be easily incorporated into a visual arts program of this nature.

5.5 Discussion

Because this study proposes to examine learning across the disciplines of both art education and special education, this discussion will initially be divided into two sections: visual arts learning in this setting, and adaptive arts learning in this setting. The discussion will conclude with a section that uses the lens distributed cognition theory to examine how learning is realized and assessed in this particular program.

5.5.1 Visual arts learning. It was previously stated that while art skills and concepts are being taught and learned in this setting, they are not necessarily the focus of this study, as that is expected in any public school visual arts program. Traditionally, however, it would be expected that one would see lessons that reflect current research on artistic thinking skills, as well as the chronological age-based benchmarks and standards set by National Coalition for Core Arts Standards. The higher level thinking skills and age-based benchmarks, based on commonly accepted theories of the stages of artistic development, can be problematic in this setting. Therefore, let's first look at what students are currently learning in this program, followed by a look at how that learning connects to the national standards.

Revisiting visual arts learning in this study, the data demonstrated perceived learning in the visual arts related areas of:

- increased understanding of art making as a leisure activity,
- improved art related life skills, such as tool and material usage, direction following, and engagement in art activities,
- increased choice making ability,
- increased interest and participation in art making,
- increased willingness to try new things,

- improved sensory tolerance
- increased therapeutic use of art

These learning outcomes are the result of integrating traditional visual arts learning components with life skills learning and the four overarching goals of this program:

1. Students will make personal choices in the creative art-making process.
2. Students will demonstrate appropriate art tool and material usage.
3. Students will initiate various parts of the art-making process.
4. Students will engage in various parts of the art-making process.

The student learning data results clearly connect with the following two artistic habits of mind (Hetland, 2007):

- Stretch and explore: Learning to reach beyond one's capacities, to explore playfully without a preconceived plan, and to embrace the opportunity to learn from mistakes, and
- Develop craft: Learning to use tools, materials, and space.

As students are repeatedly exposed to new processes and techniques in the art making process, and provided opportunities to explore and practice, many "mistakes" are made along the way that present opportunities for learning and growth. Triangulated data from all three sources showed growth in students' willingness to participate in art making and exploration of tools and materials. Data also demonstrated the importance of assistive technologies, including basic adaptive tools, for growth in ability to use tools and materials. Another artistic thinking skill (Hetland, 2007) represented by the data is:

- Engage and persist: Learning to embrace problems of relevance within the art world and/or of personal importance, to develop focus conducive to working and persevering at tasks.

I find this one particularly interesting in this setting, as one could argue that these students are not doing this since most often they are not considering problems of art world or societal significance, yet they absolutely are learning to embrace problems of personal importance and developing focus and perseverance. It is the ability to adapt these types of learning outcomes to the specific needs of individuals that I believe is so vitally important in settings such as this.

Through a similar adaptive lens, elements of the national core arts standards reflect some of the learning taking place in this setting:

- Enduring Understanding: Artists and designers experiment with forms, structures, materials, concepts, media, and art-making approaches. (Visual arts creating, process component: investigate)
- Enduring Understanding: Artists and designers balance experimentation and safety, freedom and responsibility while developing and creating artworks. (Visual arts creating, process component: investigate)
- Enduring Understanding: People create and interact with objects, places, and design that define, shape, enhance, and empower their lives. (Visual arts creating, process component: investigate)

The data clearly showed that students in this program are learning to experiment with forms, materials, concepts, and art-making approaches. They are learning about balancing experimentation, safety, freedom and responsibility, as they learn how to manage tools, materials and workspaces, although perhaps sometimes at a level that most of us take for granted; for example, learning that we don't eat or throw art materials. While this may sound silly, *not* teaching such basic understanding of materials blocks access to further arts participation.

Next let look at more specific elements of the national standards. The National Core Arts Standards, currently used as the basis for most visual arts programming and assessment, are developed using backward design, in which desired outcomes are determined first, after which lesson are created. Some of the end goals, however, may be far beyond what some students will ever be able to reach given their disabilities. While I am in no way suggesting that teachers should give up on any students, or not set high standards, I am suggesting that goals be realistic and attainable, perhaps linking the students' present level of performance to a corresponding level in the standards, and building from there. I believe that we as teachers are neglecting our students with the most significant needs if we fail to recognize that what they need at a given time may be quite different from that of their same age nondisabled peers. We must take care to be aware of the rights of all people, while not allowing political correctness to take precedence over the needs of individuals. It is politically correct to assume that all students can learn, and that all can reach the learning objectives of a content area, given the use of universal design and sufficient accommodations. Working in this setting has highlighted the fact that while such ideals cannot always be realized, student learning does and did take place in this art program.

Consider the benchmarks in the current National Standards. These benchmarks and assessments are based on Jay McTighe's (2011) concept of cornerstone assessments, which should be curriculum embedded, spiraled through the grade levels increasing in complexity, and authentic and performance based within meaningful, real world contexts. They are designed to be more meaningful than standardized testing formats, in that they are intentionally embedded in authentic and increasingly complex performance based applications. For students with severe cognitive disabilities, however, some of these benchmarks may forever be out of reach. For many others, while they may be able to progress through them, meeting benchmark learning

targets may not occur at the same chronological age as their nondisabled peers. If curriculum is supposed to be age-appropriate, one would expect a middle school aged student to be involved in learning that targets middle level cornerstone assessments, yet what if the benchmarks that precede those have yet to be met?

For example, take a look at one category of the visual arts standards, and its year-by-year goals for student engagement in creating artwork (www.nationalartsstandards.org, June 14, 2015).

Grade level	Learning Target
PK-K	Students will engage in self-directed play with materials.
K	Students will engage in exploration and imaginative play with materials
1	Students will engage collaboratively in exploration and imaginative play with materials.
2	Students will brainstorm collaboratively multiple approaches to an art or design problem.
3	Students will elaborate on an imaginative idea.
4	Students will brainstorm multiple approaches to a creative art or design problem.
5	Students will combine ideas to generate an innovative idea for art making.
6	Students will combine concepts collaboratively to generate innovative ideas for creating.
7	Students will apply methods to overcome creative blocks.
8	Students will document early stages of the creative process visually and/or verbally in traditional or new media.

In my experience at this setting, despite significant accommodations, no students have been able to consistently demonstrate the fourth through eighth grade level targets, at least not in the ways most likely intended by the writers of the standards. In fact, it would be very difficult to know if or how many of these students experience concepts like brainstorming or a creative block. There

are numerous students in this setting, and I am sure many just like them around the world, that although at a high school age level, are still learning about the properties of art materials; still just recognizing cause and effect with tools and materials such as mark making; still at the stage of artistic development where art involvement is far more about the kinesthetic and sensory rewards than the pride of developing a skill or creating a finished product. While age appropriate artistic processes suggested in the standards are modeled in this program, students at the corresponding age level cannot always perform them successfully. We should not expect a student to elaborate on a visual idea before she is at the representational stage of artistic development and has an understanding of a drawn image representing a real object. Putting the cart before the horse, so to speak, is not educationally sound practice. We would think it absurd to expect a student to be successful in calculus before learning addition and subtraction. Why would we find it any less absurd to expect a student to brainstorm collaboratively about design possibilities before he understands the purpose of art materials?

We do students a disservice when we do not allow them to experience each stage of artistic development as they grow, without forcing them into a place they are not physically or cognitively ready for. For example, for students in this setting, as can be seen by the data, grade two objectives such as “experiment with various materials and tools to explore personal interests in a work of art or design,” or “demonstrate safe procedures for using and cleaning art tools and equipment and studio spaces,” are very appropriate goals. The problem is, these goals may take years to accomplish, versus one year in second grade art class. It is common practice in special education to allow more time to complete tasks or goals. It is commonplace to see students with learning differences offered more instruction on one topic than what their nondisabled peers receive, providing necessary repetition, practice, and processing time. It would

appear then to be an impossible mathematical equation to expect that students be given the significant amounts of extra time needed to learn each individual concept or skill, yet simultaneously expect those students to be able to proceed along the sequential curricular path at a pace equal to their peers.

While we need to always expect the most and do everything in our power to help our students succeed at the highest level of which they are capable, we must also provide learning opportunities that afford experiencing success and the pride of accomplishment. In the arts, we need to slow down, let students progress at their pace, beginning at their current level of functioning. As we allow them to become familiar with art materials and begin to experience the joy of creating, even if it looks like a blob of clay to us, we need to celebrate their art involvement and accomplishments through their eyes, rather than our own preconceived ideas about what art should look like.

We can and should teach art skills and concepts, and continue to push students to the next level of learning, without losing site of what art making means to the individual. This is exemplified in the NCCAS section on contextual awareness, where it is stated that contextual awareness, developed through participation in the arts, allows students to absorb meaningful information through the senses, develop openness in apprehension and push boundaries, and communicate more effectively within variable situations and for diverse audiences. All of those benefits of arts learning can be seen in the data for the participants in this setting, albeit sometimes at a very basic level. In conclusion, the concept of chronological age-based benchmarks can be problematic if we expect that good teachers will somehow find a way to ensure that every student, regardless of disability, will successfully navigate through a linear progression of standards and stages of artistic development at a different paces, yet all end up in

the same place. That is a recipe for frustration on the part of both the teacher and the student, hence the need for quality adaptive arts instruction. We must instead, demonstrate flexibility as teachers in how we both interpret and apply the standards to teaching and learning in adaptive settings, putting the needs of the individual first, and more importantly, reconsider how we assess the arts learning by students with severe disabilities. While this study did not specifically address assessment measures, it is an important topic for further study in adaptive arts education, and will be briefly discussed in chapter seven.

5.5.2 Adaptive arts learning

Adaptive arts specialists differentiate between art therapy, which is intended to be more therapeutic and diagnostic, and adaptive arts, which blend art therapy and art education techniques in a environment allowing for exploration of self and tools and materials (Loesl, 2012). Loesl suggests that manipulation of materials develops motor skills and fosters individual creativity, which align with general art education goals of craftsmanship and creativity development. Ample data in this study exemplified the student increase participation in material manipulation. Adaptive arts instruction, however, goes beyond traditional art instruction by allowing students to express differently, often with a sole focus on process versus product, allowing for arts participation in a manner of pure sensory involvement as students learn about the properties of art materials through experimentation.

Data in this study demonstrated a broad range of adaptive arts related learning in the following areas:

- improved life skills, such as tool usage, direction following, engagement in activities, communication, and independence,

- development of preferred arts activities and an understanding of art making as a leisure activity,
- increased choice making ability,
- increased interest and participation in art making,
- increased willingness to try new things,
- improved sensory tolerance, and
- increased therapeutic use of art.

As can be seen, observed learning spans art education, special education, and art therapy outcomes. Art therapy research has suggested that perhaps part of the problem in delivering arts instruction is the difficulty in determining what type of arts experiences are most appropriate for students with special needs (Osbourne, 2003). Is it enough to modify general art education curriculum and provide student accommodations? Is the predominate method of direct instruction with its predetermined assessments of skill development and knowledge acquisition and application always appropriate for these students? As this study has shown, the answer, at least in this case, is no. With the knowledge that many of these students have a significant need to learn social and communication skills, and struggle with identity and rapport, would art therapy be a better choice? Again, the learning results here suggest an approach that combines the goals of each, yet with each, modifications in how learning is fostered, understood, and measured are essential.

Art education and art therapy differ both in methods of delivery and desired outcomes. Art education tends to be more product focused, whereas art therapy is more process focused. Art education goals are primarily skills based, in contrast to the social and emotional development goals of therapy. Delivery of art education tends to be primary through large group

teacher-led direct instruction, followed by performance-based assessments of individual acquisition of knowledge and skill; whereas art therapy leans toward small group or one-on-one less structured and more student-driven approaches, followed by observational assessments of improved well-being. There are, however, at least on paper, some areas of overlap, which are important for the creation of adaptive arts programs. Art therapy practice holds the communication of emotions and feelings as a foundational goal, just as the visual arts standards include communicating expressively about self and surroundings, both visually and verbally.

Data such as the following show the existence of such learning in this program:

- “Communicates problems or choices more,” (Staff survey, student 24)
- “he has become more able to handle mistakes and communicate the need for help,” (Staff survey, student 22) and
- “increased ability to express himself more as the year went on.” (Staff survey, student 21)

If we consider the above learning goals and data examples in relation to the national visual arts standards, we see a connection in the NCCAS website description of lifelong arts goals, under the heading of “arts as means to wellbeing,” where it is stated: “artistically literate citizens find joy, inspiration, peace, intellectual stimulation, meaning, and other life-enhancing qualities through participation in all of the arts.” Additional suggestions on the website for delivering art education content to students with special needs include:

- Promote communicative competence. Students should be able to express their needs, desires, questions and comments about their lives and their world, and
- Present material both verbally and visually, modifying tools and materials, and offering extra time and multiple means of communicating ideas or questions (Malley, 2014).

These would seem to be in alignment both with art therapy goals and with special goals of teaching for self-determination.

Occasionally, however, there seem to be contradictions in the targeting learning suggestions for students with needs. For instance, the same national arts standards source, in its link to guidelines for inclusion, offers the following suggestions (Malley, 2014):

- Maintain high expectations, expecting achievement of grade level standards. If they cannot be met as is, accommodations should be changed, not expectations.
- Use the principle of universal design for learning, assuming a continuum of learning differences and achievement levels, relying on flexible instruction, and preventing “dumbing down” of curriculum. Make learning multi-modal, providing multiple pathways for goal achievement and multiple ways to engage students’ interests and motivations.

Note that these suggestions pertain to skill and knowledge acquisition and make the faulty assumption that if teachers are doing their job, all students can meet grade level expectations.

This is no more true than stating that all students are capable of scoring a 36 on the ACT exam, and when they fail to do so, negligent teaching is at fault. In both cases, it cannot necessarily be assumed that because a specific assessment did not identify learning, that actual learning did not take place. With the students in this particular study, the data showed that learning here takes place over extended periods of time, and often cannot be measured with traditional assessment methods that require the use of written language out-of-context performance assessments, or frequent numerical scoring that measures gross increases in learning from score to the next. Assessing learning in this setting may benefit from the use of a distributed cognition lens, integrating environmental factors such as tools, assistive technologies, communication supports

and teaching assistants, into the delivery and evaluation of instruction and the means of assessment.

5.5.3 Distributed cognition theory, situated cognition theory, and assessing learning.

An important aspect of interpreting the data in terms of student learning for this setting was the triangulation of data from my teacher notes, the daily student data, staff surveys, and parent surveys. Particular discrepancies led to need to view cognition and measured learning in a nontraditional way, in this case, through a situated or distributed cognition lens. For example, in the data for “attitude” toward art, an interesting theme was the difference in responses for parent perception of whether or not they think their child enjoys art at home versus at school. 83% believe their child enjoys art at school, yet only 46% believe their child enjoys art at home, begging the question “why is there a difference?” Is it the type of art projects being offered? Is it access related, for example the availability of adaptive tools or needed guidance and assistance? Is it expectation based, where perhaps the parent assumes the child doesn’t like art so doesn’t offer it or tries only one medium like coloring and doesn’t offer other options when the first is not well received? Is it that arts opportunities at home aren’t developing in complexity and variety as the child matures? Perhaps this difference can be partially explaining by considering distributed cognition theory.

5.5.3.1 Distributed cognition. Distributed cognition theory describes learning as dependent upon more than individual thinking and memory, relying on interaction with tools, materials, spaces and other individuals in the setting. Cognitive processes can be distributed across members of the group, in this case classmates and staff; between internal and external processes, including tools and materials in the environment, and across time where participation in prior art experiences affects future experiences in the same setting (Rogers, 1997). Learning

and functioning in real world settings, like being able to participate in art activities with increased independence, from a distributed cognition perspective would suggest that continued or transferrable learning are dependent upon all of the pieces of puzzle remaining in tact and working together. In this example, perhaps when art activities are introduced at home, without the people and assistive technologies that were integral to arts learning at school, both understanding of and willingness to participate in art making are altered for the students. For these students, the supports are more than convenience; they become an inextricable part of the activity.

An example of this concept from my current teaching would be when a student of mine saw me in the hall, after which he repeated “bin” all the way back to his classroom. I am connected to art bins. Art making for him is inextricably connected to the environment, including both people and objects in the art room. I am inextricably connected to his understanding of using the art bins. In this sense, students learn to create art in this setting, but that learning is dependent upon the space, tools, materials and people involved in prior art making experiences. With regard to the discrepancies between staff and parent perception of students’ attitude toward art, perhaps when parents offer art options at home, without the pieces that have enhanced learning at school, the activities are vastly different to the students. This understanding on my part has resulted in better communication with parents as to how they might set up, present, and adapt arts and crafts activities at home in a manner that is similar to their successful school experiences, for example, providing adaptive tools and placing art materials in labeled bins along with visual examples or directions.

The extensive data in this study linking students’ successful participation in art making to adaptive tools, visual supports and other assistive technologies, along with additional staff

supports, demonstrates the integral need for an understanding of these accommodations as part of learning, knowing and doing in this program. This was exemplified in the many data segments that included verbiage such as:

- “Needs physical supports,”
- “needs help to physically get the materials,”
- “adaptive tools are what make a huge difference,”
- “used the Dynavox really well to communicate art needs and communicate personally,”
and
- “needs visual models and at times hand-over-hand.”

It should then follow that assessment practices keep the distributed learning components in tact when attempting to measure student growth, rather than relying on assessments that assume that knowledge rests solely within the minds of the students, which if they showed any growth at all, would be inauthentic, since the tools and supports are what make engagement and subsequent arts learning possible.

Distributed cognition theorists would suggest that teaching and learning have always been distributed across tools, such as books, pencils, chalk and classroom spaces (Gomez et al., 2010), explaining why learning in this setting is so difficult to measure separate from those tools and people that are part of the process. In the case of students like these who require modified tools and assistive technologies in order to participate at all, the connectedness between teaching, learning and tools is even more significant. When any of the pieces are no longer present, knowledge and understanding seem to disappear. The need for predictability and similar environmental conditions does not equate to an absence of learning, as the data in this study demonstrated. It does, however, suggest that art educators of students with severe special needs would benefit

from delivering instruction and assessing learning from the perspective of distributed cognition, incorporating the necessary tools and supports for students to engage as fully as possible.

5.5.3.2 *Situated cognition.* One could also view learning in this setting through a situated cognition lens. Situated learning posits that learning happens within the context of everyday activities, perhaps without any intent of intentionally teaching and learning specific skills. Learning is situated within authentic activity, context, and culture. Situated learning theorists suggest that learning is inseparable from doing since all learning takes place within a particular social, cultural, and physical context (Lave and Wagner, 1991). Doing in this environment is inseparable from assistive technologies and supports, requiring a distributed cognition lens. Similarly, learning in this specific program, that may not necessarily be evident outside of this environment, could be viewed as situated learning. I posit that arts learning in this particular setting, where art making skills are learned within the context of exploring tools and materials within this given environment, could be viewed through both a distributed cognition and a situated learning lens. Much like unschooled children accurately using math skills to sell their goods on the street (Saxe, 1988), with no formal math training, many of these students learn about the cause and effect of tools and material usage in the context of exploratory play engagement with art materials in this program, resulting in contextual learning distributed across those tools and materials and the supports in place. Consider the following examples of learning about materials through creative play opportunities:

- “enjoys many manipulatives with his hands such as clay, Play Doh, and Model Magic, where he can squeeze and roll the product and use it as a tools with his hands,” (Parent survey, student 20)

- “really enjoyed painting on canvas and the tactile experience of using different materials,” (Staff survey, student 6)
- “had tons of fun playing with the items [Play Doh and Play Doh tools] as clothing accessories with [TA]. Lots of giggles and laughs,”
- “he is so much closer to tying since we made wreaths.” (Daily data, student 11, class 3).

The last data excerpt above demonstrates how learning was greater when situated within a preferred student activity. This is a student who had been resistant to learning to tie, but was motivated to complete a wreath, which required tying. The third example above is from a student who typically resists most teacher directives, such that it would be difficult to assess what he can do with modeling materials by asking him to demonstrate specific modeling skills, like rolling, pinching, forming, or combining elements; Yet when such skills are an essential part of his creative play opportunity, they can be observed and assessed.

While some of the aspects of learning may be transferrable due to their repetitive occurrence across the curriculum, such as the use of drawing tools, others may be specific to this particular arts program, like modeling clay. A student who has learned to come to the art room, take out a painting bin, get paper and water, and go to her assigned work area to paint, may or may not be able to initiate a painting activity at home where the environment and materials set up is completely different. Learning here is situated in the social context of the rules and conventions of this art program, and the people involved who assist students in art making processes. Through a situated cognition lens, learning here is measured in relation student growth in performance in this particular setting, with the setting being inclusive of all of the adaptive tools, assistive technologies, and human support systems. For instance, learning may be measured in terms of increased initiation and engagement in the art making process or choice

making, rather than in relation to specific knowledge or skill acquisition, as in the following data excerpt:

- “used icon page to request paper and crayons.” (Daily data, student 13, class 3)

While on the surface that may not seem significant, this is a nonverbal student who prior to the school year in which this study took place, was not using any means of communication to express needs and wants, and would therefore just sit rather than initiating any art activity. Daily data in this study showed examples of initiation and engagement with supports, and an increase in both was noted in parent and staff responses, based on observation over time.

Learning situated in this setting can also be measured in terms of decreased negative behaviors, allowing for more meaningful participation, without which artistic growth is unlikely. Such learning can be seen in data examples such as:

- “This is a student who would refuse to work and who would bite and scratch when she first started coming to art. She now participates without those negative behaviors and often chooses art for noon options.” (Staff survey, student 23)

For this student, growth in art was more about learning how to communicate wants and needs within the art making process rather than communicating what she *didn't* want by acting out. Such learning is significant because it opened doors of access to arts opportunities meaningful participation. Subsequent art participation may lead to activities in which more specific art skills can be assessed.

5.5.3.3 Assessing learning. In the style of Vygotsky's zone of proximal development, we can examine the measure of success based on what students can do while immersed in the situated/distributed learning context, with the least amount of support necessary. It would then follow that increased learning would require slowly weaning support or adding complexity. We

have established that in this setting, understanding learning by only looking at the mind of the individual, with no regard to the people and artifacts that play a role in the learning process, and the relationship between them and the learner, is impossible (Nardi, 1995). Nardi posits that, “taking context seriously means finding oneself in the thick of particular situations at particular times with particular individuals,” as can be seen in this excerpt from my teacher notes:

“Each time I repeat a material or technique, students seem more open to it. We have a lot of students with sensory intolerances, so this seems to be good for sensory exposure. We also have a lot of students who love any sensory involvement like clay or sand or shaving cream. We have worked on the concepts of texture and slabs previously; this was a way to spiral back to that. Many of the kids need deep pressure activities and like to roll the clay or press hard with their palms. I give them lots of tool choice for texture and have found that my expectations need to loosen up regarding how their textures will look. If they are using tools safely and joyfully engaged, I let them work “messier” than I would normally be okay with. I try to let them do it their way as much as possible, as my goals are appropriate and safe tool usage, and initiation and engagement in arts that can be a lifelong leisure choice. One of my students functions at about a 6mo cognitive age level, and just likes to squeeze the clay tightly in his hands. That’s okay...he is engaged. I used the squeezed clay pieces as his chimes.” (April 23, 2014)

As good teachers do every day, this demonstrates the importance of being in the thick of things, really knowing the students, and taking the context of individual’s environmental, physical, and cognitive needs seriously. The creation of quality educational programming demands a thorough understanding of how the targeted students learn and demonstrate growth. For example, referring back to students’ sometimes unique ways of participating in art making as a sensory experience rather than for the sole purpose of producing a finished piece of artwork, what if a student chooses to engage with art materials in a manner other than the teacher intended? What if a student’s joy of creating, a goal of arts education, rests in the manipulation of the materials rather than the completion of a product, and subsequently, meaningful arts participation for that particular student results in growth and learning in areas such as initiation, engagement, and sensory processing rather than in mastery of art terms, skills and techniques? Should the art experience be considered a valid and desirable approach to learning meaningful enough to be

include in a student's IEP? Is such adapted or therapeutic programming sufficient, replacing traditional arts learning? Is it congruent with traditional arts learning in that the student is producing art based on his own preferences and capabilities? Perhaps more problematic, how do teachers and administrators accurately and meaningfully measure growth and evaluate teacher practices? In this setting, meaningful assessment learning and growth occurs over long periods of time, measuring student actions such as frequency and duration of student initiation and engagement, increased demonstration of willingness to participation, by holding tools longer, making personal choices more readily, and expressing interest whether verbally or through body language. Learning is based on growth rather than mastery.

5.5.4 Summarizing thoughts. The NCCAS guidelines for using the national arts standards states, "Federal law [IDEA] does require that *all* schools that receive federal funding must provide services to meet the individual needs of students with special needs or disabilities and provide access to the general curriculum, which may include arts instruction (nationalartsstandards.org, June 14, 2015)." The wording "may include" leaves one wondering why the wording is there at all. Note it does not say, "should include" or "must include." Why not? I have heard many times in my career, when I go to battle for the inclusion of arts programming for students with special needs, that art is not in their IEP's. Why isn't it? Who took out? How was it determined that arts experiences would not be beneficial for those students? Who is making those decisions? If their nondisabled peers have a right to an arts education, why is it acceptable for students with disabilities to have their arts education opportunities removed from their individualized education plans without their consent? Is it in part perhaps because there has not been enough collaboration between art education and special education, such that special education teachers understand the ways in which experiences in the

arts can help meet goals that are equally important in special education, like self-regulation and self-determination, as well as many life skills objectives? Is it because all too often students with special needs are included in arts classrooms where there are inadequate assistive technologies and accommodations in place for arts learning to be perceived by the special education staff as meaningful and valuable? If it were to be assumed that all students *should* or *must* have the arts included in their education, how should arts programming then be adapted to meet the needs of vastly diverse students?

In their book, *Understanding by Design*, authors McTighe and Wiggins (ASCD, 2005) refer to the importance of teaching to enduring understandings, or big ideas; those that are valuable long after the details of the learned concept have been forgotten. These are the concepts that adequately answer the question, “why is this worth teaching to this student at this time?” If we hope to provide the most meaningful arts curriculum to all students, we must embrace the fact that not every student has the same learning needs at the same time, and that perhaps our engrained methods of educational delivery and assessment are not effective for all students. Adaptive arts should be just that, arts experiences adapted to truly meet the needs of the students for which it is designed, standards or no standards, requiring more research and resources in this area. Malley notes that, “responsive and pro-active inclusion of students with disabilities in arts education is paramount to their overall well-being and success (p15),” yet clarifies the need for continued research on how to best provide arts instruction to students with significant learning differences:

“More evidence is needed on the effects of particular instructional contexts, such as the amount of time spent in general versus specialized settings on skill acquisition and maintenance. Further, there is a current need to examine (a) how evidence-based practices typically used in special education settings are best implemented within general education, (b) how certain methods of instruction by general educators might be effective

for students with extensive support needs, and (c) how principles of UDL can best be utilized and augmented with more intense direct instruction.” (Rydnak, et al., 2013)

Even with additional research in this area, educational paradigms are difficult to change. As noted by Osbourne, general education teachers teaching students with special needs, often in setting where they feel over-stretched and under-resourced, are likely to be so accustomed to adult-led direct instruction, informed by behavior analysis theory, that it would be difficult for them to recognize how some students may be better served by a more therapeutic, child-led approach (Osbourne, 2003), such as quality adaptive arts programming.

Chapter 6 Results: Pedagogical Considerations for Balancing Structure and Creativity in this Setting

The website for the national arts standards states that the integration of creative *practices* is fundamental for the learning the creative *process*. Creativity in the arts is said to take place in learning environments that encourage students to engage in the practices of imagining a mental image or concept, investigating through exploration and examination, constructing a product by combining or arranging a series of elements, and reflecting by thinking deeply about his or her work. It is further stated that creative practices “require intense cognition that can be developed through arts engagement (www.nationalartsstandards.org, June 14, 2015).” What then does the prerequisite of “intense cognition” imply for creativity development in students with significant cognitive disabilities, such as the student participants in this study?

Furthermore, research suggests that students with cognitive disabilities function better in educational settings that are structured and predictable (Stokes, 2004), and that creativity thrives in educational settings with open-ended learning opportunities. Is it possible then for students with severe intellectual disabilities to develop creativity in educational settings? This chapter seeks to examine the data in this study related to the research question, “What does student learning in this setting suggest about the balance between predictable structure and open-ended opportunities for creativity development?”

6.1 The Emergence of Creativity

For the purposes of data collection in this study, creativity was defined as the demonstration of creating something new or original *to the maker*. I do *not* mean the creation of something novel or unique from a global perspective, as in an invention or new product. I see it in the data when students experiment on their own with materials in a manner other than was modeled or used previously; when a student suggests, requests, or uses a varied approach; or

when a student discovers or develops a new skill, technique or form of expression. A sub category, the one that was scored on the daily data spreadsheet, was “create from personal experience or imagination.” Interestingly, but not surprising, there were very little data coded for creativity in this study, especially in the triangulated parent and staff survey data. This, however, can at least in part be explained by a lack of explanation of creativity within the staff and parent questionnaires.

Additionally, the emphasis on creating structure and predictability is so dominant in this particular setting that truly open-ended opportunities for creativity are very limited. It would appear, based on survey responses, that the development of creativity is not a high priority for parents and staff members in this school environment. There were only six surveys out of the total 46 parent and staff surveys that even made mention of creativity or imagination. They are as follows:

- The student “learned that he is a great drawer and uses his imagination,” (Staff survey, student 1)
- She developed the skills of “motor skill, strength to complete task, independence, creativity, being able to focus for longer periods of time,” (Staff survey, student 3)
- She demonstrated an “increase in eagerness to complete art projects, increase in freedom to express creativity,” (Staff survey, student 9)
- “I see more creativity in him,” (Parent survey, student 15)
- He developed skills of “independence, creativity,” (Staff survey, student 21) and
- “She appears to have no interest in math or reading (at least taught in the traditional way) and seems to be more attentive the creative way.” (Parent survey, student 32)

Of the two parents and four staff members who commented on creativity, none defined it, rather all used the term creativity in a very general sense, seemingly referring to doing things one's own way or based on one's own thoughts and desires versus teacher directed. The daily student data included a scoring category of "creates from personal experience or imagination." Score correlations to specific elements of classroom structure did not seem significant, but the comment sections provided some insight. As can be seen below, these data excerpts regarding creativity and imagination are mostly in reference to making personal choices or expressing personal interests. Examples of the expression of personal interests include:

- "only when given choices I know he is interested in, like Disney movies," (Daily data, student 1, class 1)
- "sports, Badgers," (Daily data, student 3, class 3)
- "colors of things he likes," (Daily data, student 5, noon 4) for example, yellow for Pooh Bear,
- "chose fishing images," (Daily data, student 6, class 1)
- "verbalized wanting 'sparkles'," (Daily data, student 6, class 2)
- "color and texture choices, wanting ribbon," (Daily data, student 7, class 2)
- "asked us how to write 'My finding Nemo aquarium' on his guitar," (Daily data, student 8, class 1)
- "personal choices, but characters or movies," (Daily data, student 9, class 2)
- "CCR and fire colors," (Daily data, student 10, class 2)
- "picked red and green because he likes Christmas," (Daily data, student 10, class 3)
- "Disney and travel," (Daily data, student 11, class 1)
- "shirt fireworks [tie dye pattern, related to fire]," (Daily data, student 10, class 8)

- “will occasionally draw pictures of things he is asked to draw. Usually prefers coloring pages and lays random areas of color on top,” (Daily data, student 11, class 4)
- “preferences like colors and materials,” (Daily data, student 13, class 2)
- “picked boards with animals she liked,” (Daily data, student 14, class 1)
- “when encouraged, picked animals on his guitar and his favorite color, pink,” (Daily data, student 15, class 1) and
- “likes purple and pink and pictures of self.” (Daily data, student 16, class 1)

Integration of student interests is widely believed to enhance learning for all learners, yet child-led learning approaches are not predominant in many areas of special education, particularly with students with autism. Educational programs continue to rely heavily on adult led pedagogies based primarily on behavioral analysis (Osbourne, 2003). In this art program, however, integration of personal interests is foundational for the development of self-determination skills, a school-wide goal, and for identity development. Making personal choices is also foundational for creativity development, as the simplest level of the creative process. We can see evidence of choice making in these data excerpts:

- “picked knitting bin and sat with [another student]. Couldn’t figure out but she and [the other student] talked and problem solved and cut up the string trying to make a cat.”
(Daily data, student 9, noon 5)
- “make me a cat [said to a peer working with him],” (Daily data, student 15, noon 5)
- “made extra chime into necklace,” (Daily data, student 15, class 3)
- “starting to add details [to his painting], apartment and lizards,” (Daily data, student 15, noon 1) and

- “had trouble narrowing for theme. Combined Six Flags, motorcycles, and boating.”

(Daily data, student 21, class 1)



Figure 6.1 Student with knitting bin

I want to describe one of these events in greater depth because it stands out for its complexity and clear demonstration of creative process. Two students were problem solving how to use a particular art bin, knitting tools and materials, culminating in them using the materials in manner other than was intended by the teacher. This particular student chose a knitting bin and brought it to a table where another student was working (Figure 6.1). Rather than ask for

help on how to knit, the two students talked and manipulated the yarn and string, turning and looking at it, until one suggested making a cat. They proceeded to cut and wrap string until they had a very loose form of a body and a head, which seemed to satisfy both as a representation of a cat.

The first student proudly took it with her, saying that they made it for one of their classmates. This example demonstrates open-ended choice making in the form of a student choosing an art bin during free art time, as well as collaborative creative problem-solving as the two students tried to figure out how to use the materials. Lastly, this exemplifies students using materials in a novel way, a recognized element of creativity. This would seemingly fit Sawyer’s description of little “c” or individualist creativity, where one creates a new, original mental combination of existing thoughts and concepts, in this case knitting materials and the representation of a cat. Sawyer notes that little “c” creativity only needs to be new to the creator, versus a creative product that is novel to the world (Sawyer, 2011). Lowenfeld would also recognize this as

creativity, based on his definition of creativity as an independent and imaginative approach to the work of art.

Of great importance in this setting, as demonstrated by the example above, is the allowance of unstructured art opportunities within an environment that is structured enough to allow students to independently make choices about and access various tools and materials. In this case, the structured use of art bins during free art time over the course of a few years, always listed as part of students' visual art class schedule, and with art bins labeled and placed in predictable locations, has opened the door to students beginning to make personal choices about the types of art they would like to do during their own time. The bins put some constraints on their choices, as there are generally only about 25 bins to choose from, each with limited supplies. The bin set up and labeling is familiar to students, as bins are used in the classroom as well, and provides necessary environmental structure.

6.2 The Importance of Structure

Many students with intellectual disabilities struggle with complex directions and tasks with multiple steps, therefore benefitting from tasks being broken down into smaller steps (task analysis), and working in shorter durations with more frequent breaks (Kern, Childs, Dunlap, Clarke, Falk 1994). They may also struggle with communicating both what they know and what they don't understand (Billingsley, 2013). Visual schedules and visual communication boards, discussed in previous chapters, can be helpful (Hume, 2007), as can having clear endings to tasks and clear steps that students can check off. Systematic instruction, derived from the principles of ABA (applied behavior analysis) has also been shown to be effective in both inclusion and special education settings, especially with students with developmental delays, ASD in particular (Billingsley, 2013). This includes instructional strategies such as consistent class format, task

analysis, the use of visual daily and in-task schedules, and prompting (Crosland, 2012), all of which have been implemented in this research study setting.

6.2.1 Clear task start and finish. A successful strategy for structure in this environment has been the use of lessons or tasks with a clear and finish, helping students understand how to start and how to know when the task is complete. While a defined task seems to contradict the notion of open-ended opportunities, for many students who are just beginning to discover art making tools and skills, such structure is a necessary beginning to their art making and creative growth. The following data excerpts from both daily student data and staff and parent surveys demonstrates the use of this strategy to facilitate predictability in this setting:

- “gave him a start/finish marker set up and prompted while looking at paper. After modeling 2 colors, spent next 5-10 seconds with next few marker colors, needing prompts to put cap on and pointing to put in finish bin,” (Daily data, student 2, class 4)
- “Used finish bin which encouraged him to do more coloring using more colors,” (Daily data, student 5, noon 4)
- willingness to participate depends on having “something motivating to [her] like Frosty or with a definite start and end – she likes completion,” (Parent survey, student 23)



Figure 6.2 Student using start and finish marker baskets

My teacher notes further express the need for clearly defined tasks:

“Working on grid mosaics (2” colored paper squares placed on grid on large paper) As I think about it, it seems too simple, like there is not enough “art content” yet for the 2 classes of students with autism, it is very engaging. I have found that these students initiate more quickly and remain engaged longer when there is a clear “task” with a clear beginning and end. The troubling part about that is that creativity is more about open-ended problems. Art teachers try to get students to make choices about their art and make decisions about what to add, when it is “done”, etc.” (April 22, 2014)

6.2.2 Pattern and repetition. Another means of creating structure and predictability within the creative art making process, the integration of pattern and repetition in lessons, has also proven successful, as can be seen in the following data segments:

- “seems to really like patterns and predictability,” (Daily data, student 4, class 1)
- works best when “knows where her table is at, the schedule is at her table and help her know what is expected of her,” (Staff survey, student 16)
- “likes structure. [He] is particular about his art. He can be perfectionistic and will crumple up art if he isn’t happy. He is more of an independent worker with his art and rigid with what is acceptable to work with,” (Parent survey, student 22)
- “works best with repetition,” (Parent survey, student 23)
- “did best with dots evenly spaced for placement of rhinestones,” (Daily data, student 1, class 2)
- “So the grids [Figure 6.4]...they seem to really like the pattern, repetition, and predictability, yet I still get to encourage choice making and design and develop fine motor and visual attention skills, and tool usage (glue sticks).” (Teacher notes, April 22, 2014)



Figure 6.3 Lessons incorporating pattern and repetition

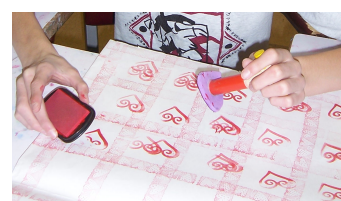


Figure 6.4 Grid mosaic lesson

The data from all three sources shows evidence of students participating more willingly and successfully with structure and predictability of both classroom space and instructional delivery. The data excerpt below, from my teacher notes, further exemplifies how learning improves and negative behaviors decrease as lessons become more familiar and predictable:

“Glazing these was much better than previous glazing session as well. We have started the last three years glazing bowls for a community “Soup Bowls” project. The first year a number of bowls were thrown or broken. Brushes were broken or chewed. Tables and hands were painted on. This year, no bowls were broken. Most are doing better with brushes and sponges and understanding them as art tools. This year I even took the transition kids to a local pottery painting shop to be able to use the skill in the community. They had a great time and did great, and got to incorporate life skills of shopping, paying, waiting as well (teacher notes, April 23, 2014).”



Figure 6.5 Glazed bowls for community soup bowls fundraiser

In addition to using clearly defined tasks and pattern and repetition to increase predictability, teachers can use task analysis to break lessons down into smaller steps.

6.2.3 Task analysis. Students with intellectual disabilities in this setting have benefitted from task analysis, or breaking down complex directions into simpler steps, which are then numbered and combined with visual images on a task schedule (Figures 6.6 and 6.7). The following data segments, triangulated between daily data, staff surveys, and parent surveys, demonstrate this:

- “frustrated if he thinks it’s too hard, needs [task] broken down and encouragement,”
(Daily data, student 10, class 5)
- “he is very structured, so works better with specific tasks and visual schedule,” (Staff survey, student 12)
- “likes to have choices broken down,” (Staff survey, student 17)
- “simple directions – hands on learning” help learning (Parent survey, student 24)

- “works better with visual schedule with step-by-step instructions,” (Staff survey, student 2)
- “needs step-by-step supervision for clean up,” (Daily data, student 25, noon 3)

While task analysis within lessons facilitates predictability, a consistently structured class format is equally important. This includes the consistent use of multimodal instruction in the form of verbal instruction paired with written and visual supports.



Figure 6.6 Daily Art Class Visual Schedule



Figure 6.7 Visual Task Schedule

6.2.4 Consistent class format. In addition to step-by-step instructions and the use of visual supports, students here also benefit from structure in the form of consistent class format, including seating arrangements, labeling of supplies, and use of workspace, and daily work schedules. The following data segments exemplify the use of labeling, spatial arrangement and consistent class format in creating structure and predictability:

- willingness to participate is dependent on “structure, designated spot, clear written instructions,” (Staff survey, student 1)
- “helps to have one spot for art,” (Parent survey, student 15)

My reflective teacher notes further elaborate on both the importance of and the challenges of maintaining classroom structure:

- “Seating arrangements are so important, both for personalized needs like table height or wheelchair access, and for predictability. Kevin came in today and headed for his seat. The table had been turned perpendicular to its normal placement in the previous class and hadn’t been turned back. Kevin saw it and froze, turned and glared at me, and literally didn’t seem to know what to do. His anxiety level skyrocketed. I visually showed him that it was still HIS table by pointing to the unique holes in his table. I asked if he wanted it moved. He said yes. Once moved back, he was fine. This unpredictability is known to be problematic for students with autism.” (teacher notes, May 15, 2014)
- “This student loves stamping or using bingo dotters within a grid, so this had a similar grid approach. This particular student with autism seemed to hate art for the first couple of years, other than when we did stamping in grids. Now he also likes model magic, fabric (loved tying fabric strips on to wire to make a wreath...again, very repetitive so he knew what to do, and visually clear finished state.” (teacher notes, May 16, 2014)
- “I am more aware since data collecting of when students are initiating/engaging or just seem more happily involved in the art process. The hardest time is always getting started. Transitions are difficult for many of my students. It seems smoothest when we repeat the same procedures for multiple classes (ie stamping on grids or glazing bowls) where the visual directions and supplies are the same for a few classes. Many of the students, those with autism in particular, seem to need the predictability. Negative behaviors seem to occur more when they perhaps don’t know what is expected of them. They have been most engaged on projects where there is a grid to fill or a pattern to be finished (grid mosaics, stamping).” (Analytic memo, June 14, 2014)

It took a year of trial and error to figure out how to create a class structure that created enough predictability to reduce student anxiety and increase initiation, but not so much that freedom of choice and development of independence were limited. The data has clearly shown that structure and predictability foster student learning and participation in this setting. The next sections will examine how choice making, the first step in moving from rigid structure to a more open ended class structure, enhances growth and learning in the participants in this study.

6.3 Creativity and Choice Making

As discussed in the literature review, research in the field of engineering, examining how

to create artificial decision-makers capable of open-ended criteria selection for creative decision making (Skulimowski, 2011), suggests that the simplest example of creative decision making would be choosing between limited optimal options. This could be an important consideration when examining creativity in students with severe cognitive disabilities. If choosing between limited options is the most basic level of creativity development, it would follow that more advanced levels of creativity would be unattainable in persons lacking this basic skill. That, and the fact that it is an essential component of self-determination, is why choice making was chosen as an overarching goal of this particular arts program. While choice making is vital to creativity development, for programming purposes, it would be helpful to examine it in relation to artistic development as well. Therefore, let's first consider visual art creating at its most basic level.

6.3.1 Creativity and art making at the earliest stages. Parents and teachers often begin drawing instruction with young children by modeling mark making on paper, and allowing children to experiment kinesthetically with materials like crayons and markers until they develop the awareness of cause and effect, recognizing that they are controlling the marks developing before their eyes. Creation starts with imitation and experimentation. The importance of experimentation and material exploration can be seen in the early level national standards as well, such as:

- students will engage in self-directed play with materials, (VA:CR:PK-K) and
- students will engage in exploration and imaginative play with materials. (VA:CR:K)

Exploration and experimentation in art making expand the quantity of tools and materials with which students are familiar, from which they can learn to identify preferences and begin to make choices. If we consider creativity in developmental stages as we have the stages of artistic development, making choices would be a prerequisite for coming up with new ideas or creating

novel products. This is the beginning of the creative process, creative thinking in its earliest form. Therefore, one of the goals of this program is exposing students to a variety of tools, materials and techniques, in order to build up options from which they can make choices.

6.3.2 Creativity and trying new things. The success of expanding student options for creative choice making is dependent upon their exposure to new tools, materials, and techniques, and their subsequent willingness to try new things. Data segments from this study related to experimenting and trying new things are as follows:

- skills developed include an “increased willingness to try various mediums,” (Parent survey, student 7)
- “always willing to try new things,” (Daily data, student 11, class 4)
- skills developed include “better coordination and willingness to try different art activities,” (Parent survey, student 11)
- skills developed include “improved fine motor, colors, more willingness to try different art activities,” (Staff survey, student 12)
- “is happy doing art. Likes to try new things in art,” (Parent survey, student 15)
- “seems eager to show his work and try new things,” (Staff survey, student 15)
- “more able to adapt to new ideas and suggestions in art class. He has broadened his areas of interest,” (Staff survey, student 22)
- “increased independence – interest in new activities,” (Parent survey, student 23)
- “has tried many new things and communicated more,” (Staff survey, student 24)
- skills developed include “communicates problems or choices more, Also tries new art bins and really enjoys it,” (Staff survey, student 24)
- “usually willing to try new things with help.” (Daily data, student 25, class 7)

A significant theme in the above data is the overall willingness to try new things for most students. As was determined earlier though, new experiences have been more successful when integrated into a familiar lesson structure with adequate support and predictability, such that student know what is expected of them despite the newness of the activity. I have also found that introducing new things in small increments helps, such as repeating a familiar painting lesson, and introducing a few new painting tools.

A few data segments, however, highlight the resistance or hesitance by some students of trying anything new:

- “new activity, needed modeling and prompting to start,” (Daily data, student 25, class 2)
- “I would not consider her to be open to trying new things, She generally says “no way” initially, and needs to be encouraged to try something new,” (Staff survey, student 23)
- “new activity. Looked concerned,” (Daily data, student 17, class 2) and
- “unwilling to look at other options of bin choices.” (Daily data, student 1, class 6)

These excerpts remind us that while students may be willingness to try new things under the right conditions, without an understanding of what is expected and what will happen, fear and frustration can set in, requiring the use instructional strategies such as modeling, priming, prompting, and encouraging.

6.3.3 From trying new things to choice making. While we have established that exposure to a variety of tools materials, and techniques can provide foundational options for choice making, the concept of personal choice making itself has appeared confusing for students in this setting, those with autism in particular. This may be in part due to their tendency toward the concrete rather than the abstract, and the perhaps overused instructional strategies of multiple-choice questions, where there is only one correct answer, as means of assessment.

Students seem programmed to know they must pick an option presented, often choosing predictably as with one student who always chooses whatever is offered on her right side, or another who also answers with the last verbal option given. This not genuine choice making, rather it is rote responding to a recognized routine. Such responses could demonstrate a lack of understanding of choice making. The students appear to believe they are being asked for the correct answer rather than their opinion, which is problematic when the desire is to engage them in creative art making based on personal choices. Consider the following from my teacher notes:

“A teacher told me today, “It’s so cool the stuff you do with these guys. They used to hate art but now they love coming, and it’s so hard to figure out things these guys like to do in their free time.” We talked about how they had seemed to struggle with the concept of art. It seems to me that these students are given so much structure to help them function, that they really have trouble adjusting to a lack of structure. They are frequently given multiple choice question to test for understanding, so when ask suggest they pick a color, or a bin, or a theme...they appear frustrated as if they don’t know the “right” answer. It has taken years of exposure to choice making in art, even simply choosing between 2 colors, to get them to understand that art is something they GET to do, and choices are theirs, with no wrong answer. One student (#1) still really struggles with that. He will say ‘you tell me’ and will only choose after I say a few times ‘What do YOU want. There is no right answer. What do YOU like?’” (teacher notes, April 22, 2014)

To ensure that student choice making is genuine, teachers must be acutely aware both of communication preferences and limitations, and response patterns. Many times, understanding of communication patterns guides the structure of the lesson. For instance, a class of students with multiple and profound physical and intellectual disabilities, all of whom are nonverbal, were beginning a painting unit in which they would learn about a famous artist, then work hand-over-hand with teaching assistants to replicate a famous painting by that artist. As discussed in a previous chapter, one student was chosen to select the artwork (Figure 6.8). This particular student is in an advanced stage of Canavan’s disease, and has no use of her limbs, nor is she able

to speak. She can, however, smile, laugh, and blink to signal “yes.” The data excerpt below explains how choice making opportunities were provided for her:

- “chose this painting from 10 famous works. Blinked yes initially to it, picked it again through process of elimination,”

(Daily data, student 4, class)

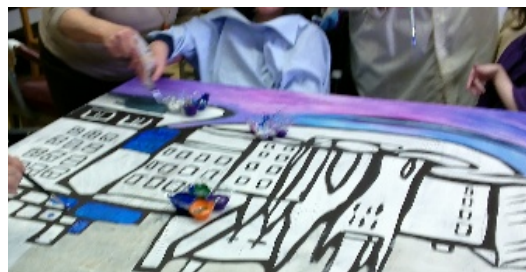


Figure 6.8 Student working hand-over-hand on William Johnson group painting

This structured method of communicating preferences, integrated into the structure of the lesson, was employed allowing her to choose between 10 preselected images. Structured processes for choice making are necessary for providing opportunities for genuine choice and creative decision-making, as are patience and a willingness to communicate on their terms.

6.4 Unconventional approaches to art making.

Returning to the notion of trying new things and choice making as foundational for developing creativity, one cannot consider creativity in this setting without considering how individuals approach art making in personal or unique ways. Data related to experimentation with materials and students’ personal approach to art making include:

- “chooses art for noon options every day, and usually chooses to paint. Seems to like the sensory quality of paint and will often paint on a brush handle, the water dish, or her fingers, very slowly and methodically,” (Staff survey, student 14)
- “enjoys many manipulatives w/ his hands such as clay, Play Doh, and Model Magic where he can squeeze and roll the product and use it as a tool with his hands,” (staff survey, student 20)

- “loved making gloves out of the Play Doh and having [staff member] squeezing it onto his hands.” (Daily data, student 26, noon 2)

Students here do not always use art materials or tools in a conventional manner. Often, the joy they experience is much more process than product oriented, usually involving sensory satisfaction. As a teacher, it would seem natural to stop them and correct their “behavior,” yet if it is an individual, heart-felt approach to art making, one that leads to a genuine joy of creating and a better understanding of the properties and uses of tools and materials, why should these unconventional approaches necessarily be re-directed?

Often, as explained earlier, staff members assisting students have a vision of what they believe a finished product should look like, and quickly jump in to “correct” the students approach and “fix” the art product, as is explained in the memo below:

“Working on embellishing guitars today with one of the lower functioning classes. Music teacher wanted this class to make guitars for props for the music concert. The students really aren’t getting to do much of anything, since if I walk away to work with another student, the assistants take over. The assistants are really enjoying this but are doing way too much of the choice making and actual creation. I know they think they are helping make it “look better” but I struggle with how to convince them that it is more important to let the students actually participate and have some say.” (teacher notes, April 25, 2014)

This overreach prohibits the development of creativity on many levels. First, it teaches the students that there is one correct way to make art, which is completely contradictory to the creative process, which by definition seeks new and unique approaches. Second, the work becomes that of the assistant, not of the student, giving the student the message that he is not capable of making art, or at the very least, that his work isn’t good enough; a discouraging message that would likely lead to less willingness to participate in the arts and squelch the joy of creating for this student. And lastly, many historical artists have found their fame making art in unconventional manners. Consider the fact that one of the most commonly recognized names in

field of art history, Vincent van Gogh, created paintings that were unacceptable in the eyes of the art community at the time, yet today are some of the most valuable works of art in the world. His painting techniques were unconventional. They broke the rules and standards of painting, and in doing so, ultimately changed the world of art. Creative results are not necessarily easily recognized or accepted as positive change.

The concept of creativity development, including unconventional approaches to art making and perhaps unintended uses of tools and materials, leads us back to how we might balance open-endedness and structure in this setting in order to provide the necessary predictability and understanding to promote willing participation, while simultaneously providing productive opportunities for creative exploration of art tools, materials, and techniques.

6.5 Balancing Structure and Opportunity for the Development of Creativity

It has been established that structure helps these particular students function better in this program. Evidenced-based instructional strategies such as the provision of supports including visual schedules, consistency in class format, and the use of a hierarchy of prompting increases these students' willingness to participate. Assistive technologies, including augmented communication devices and adaptive tools, allow for both greater and more successful participation in visual arts learning. Creativity development beyond basic choice making remains as the tricky learning component.

6.5.1 Balance in class format. Since creativity, by definition, is the creation of something new, for a student to demonstrate individual creativity, he must be provided with opportunities to experiment, explore, and investigate tools and materials in open-ended ways in order to open the door to possibilities of combining them in novel ways. Yet, too much open-

endedness has been shown to lead to confusion and frustration in students with intellectual disabilities, as is the case in this setting. The answer in this setting lies in providing such open-ended opportunities within a structured instructional plan and physical environment. The following data examples demonstrate this balance:

- “looks forward to art class because she is able to work more independently even though the task is more directed,” (Staff survey, student 3)
- willingness to participate dependent on “structure of instruction, keep time down to a minimum,” (Staff survey, student 13)
- willingness to participate dependent on “art materials and the way students make their own choices in doing art the way they want. Coming in to structure and earning free art is very rewarding.” (Staff survey, student 24)
- “adaptive tools are what make a huge difference for this student and being able to express herself with less restrictions than other classes,” (Staff survey, student 3)

Class format remains consistent, always starting with a teacher directed art lesson, with instructions broken down step-by-step and delivered through modeling and corresponding visual task schedules. Seating arrangements are consistent, as are student preferred tables, chairs and assistive technologies such as slant boards and modified tools. Specific tools and materials needed for the given task are always in a bin on the left side of the student work area upon arrival. Workspaces are labeled with students’ pictures, and daily art schedules are in the center of their worktable. The daily schedule includes daily routines that are part of school-wide social and communication goals, a step for completion of the daily art skill, and a step for bin choice, which is the less structured, “free art” time (Figure 6.6). Step three, which states, “I can finish my art skill,” leads to a visual task schedule for the structured lesson steps (Figure 6.7).

The consistent use of these visual schedules fosters independent initiation for students who may not understand verbal instructions or who need additional processing time. It also facilitates independent work and self-assessment, as students fold over or move down visual icons as they decide that each step is completed. This method of class structure greatly reduces anxiety and frustration, as students know what to expect during the class period. Most importantly, regarding creativity development, this structure allows for the introduction of new skills and techniques within a predictable lesson structure. Furthermore, without the teacher-led



Figure 6.9 Art Bin Station

daily lessons introducing new materials or techniques, many of these students would persevere on one preferred activity, never trying anything new, consequently severely limiting any creative growth

or arts learning. Finally, when the daily art skill is finished, students choose an art bin (Figure 6.9). This is the most open-ended part of class, where students choose the art materials and tools they would like to use for the remainder of the class period. This portion of the class routine, also used for noon options, took many months to teach, slowly introducing students to the contents of each bin and the process of getting up, examining all the bins on the shelf, choosing one, taking it back to their work area, opening it, using it, cleaning it up, and putting it away. As can be seen in the data excerpt below, the seemingly simple task of free art choice contains many steps that need to be taught and learned in this setting before it can be a positive and independent learning experience for the students.

“Noon hours have become much more productive this year. A year ago, I started an art bin station, where there are about 2 dozen art bins with different materials inside. They range from Play-Doh to sensory materials to building blocks, to paints to drawing activities, and more. Students use the bins in class after their class activity is complete and at noon hour. It was difficult at first to teach them that they could choose an activity for fun (it wasn’t a *task* they had to do). Now many students who choose art for noon hour come in and independently choose a bin and begin working. This was non-existent when I started the art program. One student in particular did not initiate an art activity for the first two years. When she did start an activity, she would only engage with someone sitting next to her continuously prompting her. Now she comes into the art room, gets a paint bin (does wait for me to notice her and get her paper) and paints independently for 30 minutes.” (teacher notes, April 22, 2014)

These art bins are used every day during noon options, a 30-minute period after lunch where students choose between several options, including walking outside, using the playground equipment, participating in music room activities, hanging out in the sensory or motor rooms, playing in the gym, or coming to the art room. The following memo further demonstrates the positive experience of this open-ended art opportunity:

“Noon hour options also usually go quite smoothly, as students CHOOSE to be there, and get to choose what they work on when they come. For a while, one of our most difficult students always came to art for noon options, as it was “the only place that he doesn’t have behavioral issues.” So is this because art itself is therapeutic for him? Is it because he gets to choose what he does? Is it the classroom environment (lighting, space, music, etc.)? Is it the rapport/expectations with the teacher?” (analytic memo, June 14, 2014)

6.5.2 Creativity development and teacher-student rapport. The above memo also refers to rapport, which while discussed in previous chapters, fits here as well. If creativity is dependent on risk taking and trying new things, an environment where students felt safe enough to do so is important. Therefore, rapport matters, in that students need to be able to trust that it is okay to make a mistake, try something different, or have something not work as expected or planned, a difficult thing to teach these students, those with autism in particular. For example, a student highlighted in previous chapters seems to visualize his finished artwork before he begins. If the results deviate in any way from his original vision, to him it is “ruined” and he will subsequently

crumple it up and throw it away. As this student has become more comfortable with making mistakes, he is learning that he can fix them, try again, or perhaps accept the “mistake” as something better than he had originally intended. These experiences are also developing a willingness to broaden his interests and try new things, resulting in more involvement in creative processes and more creative finished products. Like most students in this setting, he requires an extra dose of support and encouragement to guide his creative processes. Just as distributed cognition helped make sense of learning in this environment, perhaps the concept of distributed creativity fits here as well, as there is ample evidence of “collaborating groups of individuals collectively generating a shared creative product (Sawyer & DeZutter, 2009).” In fact, creative involvement in this program is distributed between students, teachers, teaching assistants, art resources, tools, materials, and assistive technologies. The resulting creative products would never come to be with the absence of any of them.

6.6 Discussion

As quoted earlier:

“Art expression in its purest form is an expression of the individual's interaction with life. In order to create this personal statement, an artist requires significant freedom of thought, feeling, and mode of expression. Although many aspects of life allow for creative behavior, the arts are especially appropriate for creative development because of the value placed on divergency, uniqueness, and individuality (Day, 1982).”

The participants in this setting represent diversity and uniqueness at a level perhaps even beyond what Day had intended. Author Daniel Pink states that creativity thrives when there is intrinsic motivation, via autonomy (the urge to direct our own lives), mastery (the desire to get better at something that matters) and purpose (the desire to do something for a bigger purpose) (Pink, 2006). His described attributes of creativity, which he says everyone has and can develop, as design, story, symphony, empathy, and play. All of these students have a story. All have

preferences and desires that need to be identified so they can be explored and shared through the arts. The creative process for these participants, even at the earliest stages of limited choice making, may require the involvement of other people and assistive technologies, but it remains the creative process. Participation in the arts, however, goes beyond crafting and creating. Arts participation fosters identity development and enhances communication skills as students learn about the world around them and their place in it by engaging with tools and materials, discovering personal preferences, and communicating through their own artwork (Halverson, 2013).

These important learning opportunities should be available to all, regardless of disability. Teachers of the arts hold in their hands opportunities to reach students who are all too often excluded from expressive and creative experiences that arts programming can provide. For students with language deficits or communication differences, the world of visually imagery can be the key to both receptive and expressive language growth opportunities. Most importantly, visual arts participation gives these students access to the joy of creating that their nondisabled peers may take for granted.

The obstacles to programming, such as time limitations, lack of training and resources, lack of administrative support, etc., need to be overcome by teachers who understand that with the right balance of structure and creative opportunity, combined with a willingness to learn and grow and make both mistakes and discoveries alongside their students, all students can successfully engage in the art making process.

Chapter 7 Professional Implications

7.1 Implications for Art Education

Art teachers frequently find themselves teaching students with a wide range of disabilities, either in an inclusive setting or in smaller special educational settings. Yet most art teachers have little to no training in special education. There are limited resources available to assist in the development of physical space, curriculum, and instructional strategies for the wide range of needs of these students. Furthermore, many of the resources available are prescriptive “dumbed-down” art lessons rather than age-appropriate and developmentally appropriate approaches to creating and teaching art. Most assume a level of physical and cognitive functioning that is higher than that of most severely disabled students. Many sources imply that art is only art if there is cultural, recognizable “meaning” behind it, which some cognitively disabled students, much like nondisabled children in the scribble or kinesthetic stage, are not yet capable of. That should not invalidate the art they produce. Researchers in the field of art education need to deeply consider how art should be taught and assessed for students with severe disabilities. What counts as art? How can we break down the artistic process into its most basic components to better teach and foster artistic expression and growth in all students? What should arts programming look like for students with severe disabilities? How can therapeutic approaches best be incorporated into universally designed arts lessons? What constraints must be considered in developing such a program? What individual strengths and limitations must be considered? What teacher strategies and dispositions must be considered and what is the impact of various approaches? How does funding and advocacy affect programming? And most importantly, how can teachers of the arts do a better job of providing access and personally rich opportunities in the arts for all students, regardless of ability level or educational placement? Art teachers have

had students with special needs in their classrooms for decades, and will continue to see more disabled students with more severe disabilities. It is imperative that research, teacher education and resource availability in special education and the arts increase in both quantity and quality if we hope to give equal access in the arts to all students. My final thoughts, therefore, for art education are as follows:

- 1) The field of art education prides itself on valuing difference, respecting and including diversity. We cannot then neglect our most challenged learners, as teachers or researchers, even when they are placed in overflowing classrooms with little guidance for instructors as to how they learn best and participate most meaningfully. Every spark deserves to be flamed. Every soul deserves to be nurtured to reach its fullest potential.
- 2) Our included students may have very different learning needs than their typically-abled peers, but that does not mean that they cannot or should not have equal opportunities for arts participation.
- 3) Art teachers must be prepared, through adequate training, resources, and support, to accommodate and modify, using universal design principles when possible. Many adaptive tools and other supports can help all students, while providing necessary support for students with disabilities. Teachers must also be flexible and creative, ready to reinvent tools and spaces that fit the needs of students with learning or accessibility differences. It is our duty as teachers to figure out how to make arts learning meaningful and accessible to *all* of our students.
- 4) Education training needs to include methods for teaching students with disabilities, including soft skills such as patience, listening, reading body language, and a willingness to build communication channels with nonverbal students.

- 5) Assessment in the visual arts seems to be a decades-old challenge, yet in an age of data-driven instruction and teacher accountability, assessment has become extraordinarily important. Teachers are being asked to use various data collection methods, including scoring projects with rubrics, paper and pencil knowledge tests, verbal critiques, as evidence of student learning. While these methods can be extremely helpful in assessing knowledge and understanding of students who perform well in verbal or written formats, they pose a challenge for others, including students with disabilities. Furthermore, mastery levels may not be attainable or appropriate for some students with severe disabilities. As I stated earlier, it cannot be assumed that because a specific assessment does not identify learning, that actual learning did not take place. Alternate assessment measures must be considered, focusing on both product and process, also taking into consideration functional life skills and alternate purposes for art making, such as motor skill development, tool and material usage, and communication and collaboration skills developed through the art making process. These students may appear to have learned little or nothing based on standardized measures like written tests or verbal critiques. Better measures would be observation based, measuring such things as initiation and engagement frequency and duration, choice-making skills, increased enjoyment of appropriate arts participation. We must demonstrate flexibility as teachers in how we interpret, apply and assess the standards in teaching and learning in adaptive settings, putting the needs of the individual first. This requires time allotted for teachers to really get to know students as individuals, including their unique communication methods, and time for collaboration with colleagues.

- 6) Teaching art can at times be overwhelming with huge caseloads of students, materials and tools to inventory, and often multiple buildings to travel between. Students with disabilities added to already full classes can appear to be an obstacle to good teaching when a teacher is ill prepared to work with them. It is imperative for teachers to understand that it's okay initially to not know everything about how to teach such students, or to be apprehensive at first about how to work with students who are very different than you as a teacher or students with whom you have worked in the past. It's not okay, however, to stay there. Ask questions of parents, special education teachers, physical and occupational therapists. Read books and journal articles. Collaborate with those who do have experience with those students. Art teachers know the arts, they may know the students better and understand the complexities of their disabilities. Yes, it takes time, but together we can reach all students.

7.2 Implications for Special Education

“Children with multiple handicaps and severe or profound disabilities tend to receive fewer services and are discriminated against to a greater degree than other children with disabilities. At school, their least restrictive environment is often in a site or classroom segregated from their peers with mild or no disability (Strax et al., 2012).” Although there are great efforts in place, including federal laws such as the IDEA (2004), advocating for students with disabilities to be placed in learning environments with their nondisabled peers, such placement does not always happen. Even when it does, students with special needs may not be offered an “appropriate” education based on their individual needs if left to learn with an assistant, or put in a class with a teacher who does not have the training and experience to adapt curriculum appropriately while still allowing students to reach their full potential. Students with

disabilities are often pulled out of arts classes in order to receive remedial instruction in “core academic” subjects. These students are therefore not offered the same opportunities as their nondisabled peers, especially in non-core areas like the arts. Many of these students and their parents lack the necessary resources and knowledge to advocate for themselves and their children. Students are at the mercy of the adults in their lives to advocate for them, and parents are at the mercy of the educational system. In fact, as a result of a study on summer employment opportunities for transition students with severe disabilities, the authors stated that “what educators and other adults do or do not do on behalf of students with severe disabilities may be at least as, if not more, important than the skills that these students do or do not possess (Carter, 2010).”

Students with cognitive disabilities experience and understand the world differently. As Temple Grandin, professor, author, and inventor with autism, has said, they are different, not less. The arts can provide an awesome opportunity to explore and express their world, learn about themselves and the world around them, explore and develop their self-identity and improve their quality of life by developing communicative and expressive skills that are useful in their daily lives (Halverson, 2013). Furthermore, many functional and academic skills can be learned through the arts, which is especially beneficial for students who are more kinesthetic and visual learners. Students in segregated settings similar to the site of this study are often not offered any arts learning opportunities. Research supporting sensory sensitivities or lack of imaginative abilities in some disabled students may seem to suggest that arts programming is not appropriate. Yet research in art education and the learning sciences suggest that arts learning is a developmental process, a continuum on which every student has a current placement and a growth opportunity. Arts common core correlates with stages of artistic development, further

suggesting the appropriateness of offering arts learning to ALL students, regardless of disabilities. As Susan Loesl suggested, students with disabilities need the arts as much as if not more than their nondisabled peers (Loesl, 2012). Researchers in the field of special education need to deeply consider how arts programming can enrich the lives of their students, connecting with core curriculum, expanding on it, and providing educational experiences that connect with students in ways that language barriers become less of an obstacle to meaningful participation.

My final thoughts for special education are as follows:

- 1) Students participation in K-12 art programming rests on the contents of their IEP's.

Consideration needs to be given to why art is so frequently pulled out of programming for students with special needs, when it may be one of the few places they experience success and self-confidence, often without any consultation with teachers of the arts.

Perhaps there needs to be more collaboration between Special Education and Art Education programs at the university level, where research is done, theories are developed, and future teachers are trained.

- 2) We must honor the continuum. IDEA requires that students be placed in the least restrictive environment, based on a continuum of options ranging from their home school in an inclusive classroom, to pullout resource rooms, to self-contained classrooms, to special schools and hospital or inpatient settings. The continuum was established such that provisions are available to meet the individual academic, social, medical, and safety needs of all students. Yet when students are removed from general education placements, teachers in alternate settings must have the necessary training, resources and supports to provide for a vast range of learning differences.

- 3) Researchers in the field of special education may perhaps benefit from a greater understanding of arts-based learning and how arts participation can be beneficial to students with disabilities, those with sensory processing disorders, communication differences, and visual and kinesthetic primary learning modes, in particular.
- 4) While there is ample evidence in special education of the perceived importance of visual instructional delivery and visual learning and communication supports, there seems to be little evidence of the fields of special education and art education working together to develop visual arts based learning programs for students with special needs, or at the very least provide training for special education teachers on the potential value of arts-based learning for their students. The visual arts could also be used as a means of assessment, whereby students could use art products to demonstrate knowledge of understandings in other areas. Further research needs to be conducted in this area.
- 5) While there is also a plethora of resources on creating structure and predictability in the classroom, especially for students with autism, there needs to be more research done on how such structured programming can be weaned, and how it can be incorporated without the loss of opportunities for individual preferences and opinions to emerge and be shared. For example, perhaps special education and art education could come together to create guided, or structured, open-ended programming, such as that used in the students in this study. The overall format of the class or lesson is structured, with the open-ended aspects integrated in to predicable time slots or spaces. The world is full of openness and unpredictability. If we want our students to be able to function as independently as possible in the community, teaching them how to handle a lack of

structure and predictability is to their benefit. The arts may provide safe avenues to teach such skills.

- 6) We cannot lose site of the importance of providing choice opportunities. Choice is foundation to self-determination, motivation, self-regulation, behavior management, and creativity development. Art programming, again, is loaded with choice making opportunities.

7.3 Implications for the Learning Sciences

While there seems to be significant research in the field of learning sciences based on typical cognitive development as it applies to education, there appears to be a lack of research, from a learning sciences perspective, on what arts learning looks like in individuals with cognitive disabilities. This is especially the case for students with low incidence or severe disabilities. It would seem that in order to better understand the full scope of teaching and learning, we would need to go beyond researching how most students, or typical students learn, and closely examine what the obstacles to are learning for our atypical learners. Students with severe cognitive disabilities can be the most difficult to understand and teach, in part because their disabilities may prevent them from being able to respond in predictable ways. Grappling with how the impaired brain processes and responds would seem to be an opportunity to better understand cognition on the whole. This is especially the case with creativity development and education. There would seem to be a need for research that examines what the creative process looks like in individuals with intellectual disabilities and autism. A better understanding of how new ideas are processed and developed in such individuals would inform the field education, art and special education in particular, in providing optimal instruction in creative thinking skills for all students. My final thoughts for the learning sciences are as follows:

- 1) Learning sciences focus on how humans develop and learn. It is natural then, that they would focus on typical developmental stages and learning processes. However, to fully understand the human brain and its capabilities, it would also seem natural to examine how the atypical learner develops and learns. While there are courses on abnormal psychology and adaptive education, it would be helpful if there were additional research on atypical learners at the most severe end of the spectrum. Autism rates, for example, have increased to a rate of 1 in 150, according to the CDC. Many of these students are very bright and capable individuals who desperately need those involved with their lives to take the time to understand how they see the world and process information, and then teach them the social and communication skills necessary to develop and interact with others to their fullest potential. Communication in particular is a huge obstacle for these students. More research in the learning sciences, perhaps in the area of digital media and adaptive technologies, could possibly combine proven methods such as task analysis, social stories, and visual modeling, with interactive or progressive technologies that students could learn to use more independently both in and outside of the school setting.
- 2) Students with severe disabilities often have significant learning difficulties, especially within our current educational system that requires students to learn as part of large group, primarily verbal and written, instructional methods. Yet, these individuals learn and develop uniquely, requiring more readily accessible information about severe disabilities and their affects on the learning process. Teachers need more science behind our trial and error approaches to working with these atypical learners, in the form of pragmatic educational resources and training. It would also seem that a

better understanding of learning and brain development in individuals on either end of the spectrum would help us better understand all learners, and significantly improve our ability to incorporate universal design in all programming.

7.4 Final Suggestions for Further Research and Collaboration

How can research in the arts and special education, where thinking and learning look different and produce different results, inform bureaucracies that believe in high stakes testing, standardized curricula and assessment, and the production of robotic-like graduates who all look and act alike? How can disability studies research inform such teaching and testing that instead of nurturing and accepting individual difference, expect educational systems to equalize and “normalize” everyone? “The standardized expectations for all students, the assigning of their academic performance (for example from low to high as a 1, 2, 3 or 4), and uniformity of a lockstep curriculum appear at odds with educating a multicultural, diverse population in every sense of the word (including students with disabilities) (Strax et al., 2012).” The arts are a discipline that values difference, that appreciates uniqueness, that allows for exploration and self-expression. Special education and the arts seem like such a natural fit, yet more research needs to be done, in collaboration with disability studies and the learning sciences, to determine how to best deliver arts curricula to students with disabilities, especially in inclusive settings where differently-abled individuals are learning with and from each other.

7.5 Researcher’s Wish List

The late Eliot Eisner so eloquently said, “The arts enable us to have experience we can have from no other source and through such experience to discover the range and variety of what we are capable of feeling.” This is so true for all of us: students, teachers, artists, and anyone willing to open their hearts and minds to the joys of creating. It is my wish that we, as the adults

on whom young people depend for developing and providing access and participation in rich and meaningful educational art experiences, come together from our individual academic fields, and work together to ensure successful educational experiences for all. This would require more combined arts experiences in both K-12 and university levels, and collaboration between arts programs in visual arts, music, theater, dance, and media arts. There could be great cross-curricular benefit from more programming at the university level for learning through the arts versus solely in and about the arts. Students with learning differences could perhaps benefit from a better developed understanding of the validity of arts knowing and expressing, possibly resulting in more measuring of content knowledge through arts products versus standardized testing and written language. This is currently happening with a great deal of success at places like the Lab School of Washington D.C., where students with learning differences learn core subject matter through arts-infused learning.

My wish would be for more pre-service instruction on teaching and learning for students with learning differences, especially for teachers of the arts since art classes are often the first place students are included after self-contained programming. This would also require a deeper look at how we deliver arts instruction in a time where technology can completely alter the way we teach and learn. For example, can we still do whole group instruction effectively? Should we? How can technology be used to deliver and reinforce content, to differentiate instruction, to provide repetition, practice, and extended learning, such that teachers with limited time and resources can best meet the needs of the vastly different students who educations they hold in their hands? Everyone has a “learning difference” in that we all have preferences and abilities that may demand a range of learning contexts, instructional approaches, and assessment strategies. If those with knowledge of teaching and learning across content areas could have

more opportunity to collaborate, research and teach together, we could see promising results for all students, but for our most challenged learners in particular.

Appendix

Staff survey

Questions:

8. How long have you worked with this student?
9. In what capacity have you worked with this student?
10. What indicators have you seen regarding this student's interest in art making?
11. What changes, if any have you seen?
12. What factors about art class seem to make a difference in this student's willingness to participate in art (positive and/or negative)? For example, room arrangement, noise levels, music, art materials, format and structure of instruction, amount of choice offered, etc.
13. What skills have you seen this student develop in this environment?

Parent survey

Questions:

1. Does your son/daughter enjoy art materials or art activities at home?
2. If so, what types of art activities or materials?
3. In your opinion, does your son/daughter enjoy art class at school?
4. Have you seen any changes since he/she began participating in art class at school?
5. What seems to make a difference in this student's willingness to participate in art activities (positive and/or negative)? (For example, art materials, work environment, sensory involvement, frequency and types of choice offered, etc.)
6. What seems to help this student learn in an art-making environment?
7. What skills have you seen this student develop through art class or working with art materials?

Individual Student Art Learning: Original Daily Data Sheet

Name _____ Date _____

Assessor _____

RATING: 5 – mastered, able to problem solve or ask for help if change occurs
 4 – able to complete on own in routine situation with indirect supervision or visual supports
 3 – emerging or inconsistent performance, needs direct supervision
 2 – requires partial physical assistance/cueing
 1 – tolerates physical assistance
 0 – will not tolerate
 N/O not observed
 N/A not applicable

	OBSERVED SKILL	Rating	Comments
1	Navigates room (finds work area, finds needed supplies, finds clean up needs)		
2	Initiates art making activities		
3	Follows sequence of instructions, may use visual task schedule		
4	Engages appropriately in teacher-directed art skill activity		Specific skills demonstrated:
5	Engages in self-selected art activity (bin or free art choice)		Specific choice made:
6	Communicates needs/wants/preferences by making open-ended choices (e.g. choosing an art bin) about his/her art making process.		
7	Makes limited choices (e.g. choosing between 2 or 3 options)		
8	Communicates needs/wants/preferences by expressing needs for space, break, materials or help.		
9	Uses tools and materials safely and appropriately		
10	Controls tools/materials (fine motor skills)		Specific tools or materials:
11	Shares about his/her work (e.g. describes, explains, points out favorite parts, etc.)		
12	Responds appropriately to work of others (classmates or historical/cultural example)		
13	Tries new things, willing to experiment with materials, tools and techniques		
14	Creates from imagination, personal experience or personal preference		

Personal Contextual Factors (Mood, health, prior incidents or antecedents):

Classroom Context Factors (Noise/stimulation, Behaviors, Room arrangement, Instructional):

Other comments:

Consent/assent forms:

UW-Madison

Kelley DeCleene, Student Researcher

Fairview South Art Teacher

kdecleene@wisc.edu

Dear Parent(s) or Guardian(s) of _____,

I am your child's art teacher at Fairview South. I am also currently a doctoral candidate at the University of Wisconsin-Madison, pursuing a PhD in Art Education. While I have always loved teaching art, I have found a passion for teaching art to students with special needs, and helping them access the arts and experience the joy of creating. For my dissertation research, I would like to study the links between what the research says is best practice and current theory in Special Education, Learning Sciences, and Art Education.

I believe that arts experiences are valuable for every student, and every student, regardless of disability, should have equal access to good arts programming. The purpose of this work is to examine more closely student participation, successes, and struggles in their current art programming, in order to facilitate better program development for future art classes. There are extremely limited resources for teaching the arts in schools like Fairview South, so this is much needed research.

Attached you will find two documents:

- 1) a consent form requesting your participation as a parent by filling out a brief questionnaire; and asking for your permission for your son/daughter to participate by allowing data collected in art class and from other staff members who work with your son/daughter, to be used for research purposes,
- 2) an assent form for your son/daughter to sign if capable of assenting. (if he/she is not, you may still choose to give consent for participation)

Your participation and consent for your child to participate are voluntary. Your decision has no bearing on the services he/she receives at Fairview South.

Please feel free to contact me with any questions.

Thanks for your consideration,

Kelley DeCleene

UW-Madison Student Researcher

Fairview South Art Teacher

UNIVERSITY OF WISCONSIN-MADISON
Research Student Participant Information and Parental Consent Form

Title of the Study: Visual Arts Education for Students with Significant Disabilities: Examining the intersection between Art Education, Learning Sciences and Special Education.

Principal Investigator: Erica Halverson
 email: erhalverson@education.wisc.edu

Student Researcher: Kelley DeCleene
 email: kdecleene@wisc.edu

DESCRIPTION OF THE RESEARCH

You and your son/daughter are invited to participate in a research study about what students in a specialized school for students with disabilities learn in and through a visual arts program. This research is needed, as resources are very limited in this area.

You have been asked to participate because your son/daughter currently participates in art classes at Fairview South School and is able to communicate preferences regarding his/her art projects and processes. The study will include seven to eleven individual students who each participate in art classes at Fairview South and are capable of communicating about their artwork and art making processes and preferences.

The purpose of this research is to find connections between art education best practice, special education best practice, and learning sciences theory, in order to develop art programming that best meets the needs of individual students in this setting.

Research will be classroom based. Students will participate in regular art programming. Data will be collected on student initiation of art making, engagement in the art making process, choices about the art process and product, as well as learning progress and skill development. Classroom teaching, learning and data collection will be similar to classes where no research is being conducted (in other words, class and progress monitoring will proceed as normal). Your consent allows use of student assessment data and student-created artifacts, regularly collected in class, to be used for research purposes. Data from the IMAFP school assessment used regularly in art class will be also be used for research purposes. Staff members at Fairview South who work with your child will also be asked to provide information about your child.

Your son/daughter is occasionally video taped and photographed during his/her regular participation in art class. Your consent will allow video and photo data to be used for research purposes. The only people who will view videos or photos for research purposes will be Kelley DeCleene and Erica Halverson. Data used for research purposes will be retained for 7 years after the research project is complete.

WHAT WILL MY SON'S/DAUGHTER'S PARTICIPATION INVOLVE?

If you give consent for your son/daughter to participate in this research, he/she will participate in art class as usual. Observational data will be collected regarding his/her art making process and products, as is regularly done in art class, and will be used for research purposes. All sessions are regularly scheduled art classes. There will be no extra time required for students.

WHAT WILL MY PARTICIPATION INVOLVE?

If you decide to participate in this research, you will be asked to fill out a brief questionnaire about what you believe your child learns, enjoys and benefits from related to arts programming. This should take about 15 minutes. Data used for research purposes will be retained for 7 years after the research project is complete.

ARE THERE ANY RISKS TO ME OR MY SON/DAUGHTER?

We don't anticipate any risks to you or your son/daughter from participation in this study, although there is always potential for a breach of confidentiality if records are broken into or stolen. To best prevent such an occurrence, data will be stored in locked cabinets and on pass code protected electronic devices.

ARE THERE ANY BENEFITS TO ME OR MY SON/DAUGHTER?

While no direct benefits are guaranteed, all students can benefit from data driven decisions used to create the best art programming for students.

HOW WILL CONFIDENTIALITY BE PROTECTED?

Your questionnaire will be returned in a sealed envelope. While there will probably be publications as a result of this study, your son's/daughter's name will not be used. Only characteristics will be published.

WHOM SHOULD I CONTACT IF I HAVE QUESTIONS?

You may ask any questions about the research at any time. If you have questions about the research, contact Principal Investigator Erica Halverson at erhalverson@education.wisc.edu. You may also call the student researcher, Kelley DeCleene at kdecleene@wisc.edu.

If you are not satisfied with response of research team, have more questions, or want to talk with someone about your rights as a research participant, you should contact the Education Research and Social & Behavioral Science IRB Office at 608-263-2320.

Your son's/daughter's participation is completely voluntary. If he/she decides not to participate or to withdraw from the study it will have no effect on any services or treatment he/she is currently receiving.

Your signature indicates that you have read this consent form, had an opportunity to ask any questions about your son's/daughter's participation in this research and voluntarily give consent to participate. It also indicates your agreement that your child is capable of giving assent to participate. If you do not believe your son/daughter is capable of giving consent, but still give your consent for his/her participation, please initial here_____.

You will receive a copy of this form for your records.

Name of Student Participant (please print):_____

Signature of parent or legal guardian

Date

UNIVERSITY OF WISCONSIN-MADISON
Research Participant Information and Assent Form

Ms. Kelley, your art teacher is studying how kids learn about and make art.

Ms Kelley will teach art like usual during your art classes.

She will take pictures of your art and write stories about how you make art.

You get to be part of the stories by doing your art in art class.

In the stories Ms. Kelley writes, she will not tell anyone how you did, she will just talk about the art you made and how you made it.

You will come to art class and make art like usual no matter what you decide.

Do you have any questions about this?

Can Ms. Kelley Write about your art making in the art stories?

You can ask Ms. Kelley questions about it at any time. Ms. Kelley likes questions.

You can also ask your parents about it and they can ask Ms. Kelley.

I want my art making to be in Ms. Kelley's stories.

Name of Participant (please print): _____

Date: _____

UW-Madison

Kelley DeCleene, Student Researcher

Fairview South Art Teacher

kdecleene@wisc.edu

Dear teacher/teaching assistant of _____,

I am the art teacher at Fairview South. I am also currently a doctoral candidate at the University of Wisconsin-Madison, pursuing a PhD in Art Education. While I have always loved teaching art, I have found a passion for teaching art to students with special needs, and helping them access the arts and experience the joy of creating. For my dissertation research, I would like to study the links between what the research says is best practice and current theory in Special Education, Learning Sciences, and Art Education.

I believe that arts experiences are valuable for every student, and every student, regardless of disability, should have equal access to good arts programming. The purpose of this work is to examine more closely student participation, successes, and struggles in their current art programming, in order to facilitate better program development for future art classes. There are extremely limited resources for teaching the arts in schools like Fairview South, so this is much needed research.

Attached you will find a consent form asking if you would be willing to participate as a staff member who works with a student in my art classes by participating in a brief interview about this student's art experience and allowing data collected to be used for research purposes.

Your participation and consent to participate are voluntary. Your decision has no bearing on the treatment you receive or you're your job duties or responsibilities in class.

Please feel free to contact me with any questions.

Thanks for your consideration,

Kelley DeCleene

UW-Madison Student Researcher

Fairview South Art Teacher

UNIVERSITY OF WISCONSIN-MADISON
Staff Research Participant Information and Consent Form

Title of the Study: Visual Arts Education for Students with Significant Disabilities: Examining the intersection between Art Education, Learning Sciences and Special Education.

Principal Investigator: Erica Halverson
 email: erhalverson@education.wisc.edu

Student Researcher: Kelley DeCleene
 email: kdecleene@wisc.edu

DESCRIPTION OF THE RESEARCH

You are invited to participate in a research study about what students in a specialized school for students with disabilities learn in and through a visual arts program. This research is needed, as resources are very limited in this area.

You have been asked to participate because you have worked directly with a student who participates in art classes at Fairview South School and is able to communicate preferences regarding his/her art projects and processes. The study will include seven to eleven individual students who each participate in art classes at Fairview South and are capable of communicating about their artwork and art making processes and preferences. It will also include seven to eleven parents and seven to fourteen staff members who will be asked to complete questionnaires or participate in interviews.

The purpose of this research is to find connections between art education best practice, special education best practice, and learning sciences theory, in order to develop art programming that best meets the needs of individual students in this setting.

Research will be classroom based. Students will participate in the regular art programming. Data will be collected on student initiation of art making, engagement in the art making process, choices about the art process and product, as well as learning progress and skill development. Classroom teaching, learning and data collection will be similar to classes where no research is being conducted (in other words, class and progress monitoring will proceed as normal).

You will be asked to complete a brief questionnaire about the students with whom you work. You may be in photos or video clips taken of the students with whom you are working. Your consent will allow video and photo data to be used in this research. The only people who will view videos or audio for research purposes will be Kelley DeCleene and Erica Halverson. Data used for research purposes will be retained for 7 years after the research project is complete.

WHAT WILL MY PARTICIPATION INVOLVE?

You will work with students as you usually do when no research is being conducted. You will also be asked to complete a brief questionnaire about the students with whom you work.

ARE THERE ANY RISKS TO ME? We don't anticipate any risks to you from participation in this study, although there is always a risk of a breach of confidentiality if records are broken into or stolen. In order to best prevent such an occurrence, data will be stored in a locked cabinet and on pass code protected electronic devices.

ARE THERE ANY BENEFITS TO ME? While there are no direct benefits to you and no benefits are guaranteed, all students can benefit from data driven decisions used to create the best art programming for students; and better programming can allow for more successful classes and few behavioral concerns.

HOW WILL CONFIDENTIALITY BE PROTECTED?

While there will probably be publications as a result of this study, your name and students' names will not be used. Only student characteristics and interview data will be published.

WHOM SHOULD I CONTACT IF I HAVE QUESTIONS?

You may ask any questions about the research at any time. If you have questions about the research after you leave today you should contact the Principal Investigator Erica Halverson at erhalverson@education.wisc.edu. You may also call the student researcher, Kelley DeCleene at kdecleene@wisc.edu.

If you are not satisfied with response of research team, have more questions, or want to talk with someone about your rights as a research participant, you should contact the Education Research and Social & Behavioral Science IRB Office at 608-263-2320.

Your participation is completely voluntary. If you decide not to participate or to withdraw from the study it will have no effect on your work environment or your relationship with the teacher/researcher.

Your signature indicates that you have read this consent form, had an opportunity to ask any questions about your participation in this research and voluntarily consent to participation. You will receive a copy of this form for your records.

Name of Participant (please print): _____

Signature

Date

National Arts Common Core Standards

NOTE: This is a brief sample. The full draft document can be viewed at:
<http://nccas.wikispaces.com/Visual+Arts+Standards>

Creating Art

Pre-K:

- Engage in self-directed play with materials.
- Collaboratively explore the world using a variety of descriptive visual attributes.
- Engage in focused mark making.
- Engage in self-directed creative making.
- Share art materials with others.
- Tell about art the student created.

Kindergarten:

- Engage in imaginative play with materials.
- Discuss experiences to generate ideas for making art.
- Engage in focused making of a work of art or design.
- Collaboratively engage in creative art making in response to a problem.
- Care for art materials and equipment.
- Create art that tells a story about a life experience.

1st Grade:

- Engage in collaborative imaginative play with materials.
- Develop an idea for making art based on a personal or family story.
- Constructively explore uses of materials in creating a work of art or design.
- Observe and investigate to make a work of art or design.
- Explain and demonstrate safe use of materials and equipment.
- Artistically demonstrate and explain what happened before and after an event shown in the student's artwork.

2nd Grade:

- Collaboratively brainstorm multiple approaches to a problem.
- Examine the environment to generate ideas for making a work of art or design.
- Create art or design with various materials and tools to explore personal interests.
- Formulate a question and investigate it using an artistic process.
- Demonstrate efficient and safe procedures for cleaning equipment and spaces.
- Make a work of art or design to communicate an idea.

3rd Grade:

- Elaborate on an imaginative work.
- Communicate with others to generate and collect ideas for making a work of art or design.

- Create personally satisfying work using a variety of artistic processes and materials.
- Select methods and tools to make personally meaningful artwork.
- Demonstrate an understanding of the proper use of materials for a variety of purposes.
- Elaborate visual information in the student's narrative artwork.

4th Grade:

- Brainstorm multiple approaches to a problem for art making.
- Conduct research to support making a work of art or design.
- Collaboratively construct an artwork that is mutually satisfying to the makers.
- Make use of available resources, tools and technologies for investigating student's ideas.
- Utilize tools in a manner that prevents danger to self and others.
- Design and produce a work that clearly communicates a personal message.

5th Grade:

- Combine ideas to generate an innovative idea for art making.
- Use formal and conceptual vocabularies of art and design to see surroundings in new ways.
- Manipulate forms, materials, and compositional elements to make meaning in a work of art.
- Explain and demonstrate diverse methods of aesthetic investigation and choose an approach to an artistic problem.
- Care for and utilize tools to promote quality craftsmanship.
- Design and produce a work that clearly communicates information of ideas.

6th Grade:

- Collaboratively combine ideas to generate innovative ideas for creating art.
- Experiment with unfamiliar materials and objects to generate new ideas and directions for art making.
- Persist through and learn from challenging artistic investigations throughout the art making process.
- Formulate an aesthetic investigation of personally relevant content for creating art.
- Explain implications for the environment of conservation, care, and clean up of materials and equipment.
- Select and organize images and text to make clear and compelling presentations.

Coding Definitions

Access

By “**access**” I mean the ability for students with disabilities to be able to participate fully, and I see it in the data when adaptations are made that allow students to more fully participate. I see a lack of **access** when a student is unable to participate because of his or her disability. The sub-code “**hand-over-hand**” fits because it can be the only means of using tools and materials when use of limbs is impaired. The sub-code “**assistive technology**” fits because assistive technology, both high-tech and low-tech, can help students interact with tools, materials, people, and instruction.

Hand-over-hand

By “**hand-over-hand**” I mean a method of assistance where a staff holds on to a student's hand in order to allow a student with limited mobility access to participation in the art-making process. “**Hand-over-hand**” is a sub-code of “**access**.”

Assistive technology

By “**assistive technology**” I mean an item, product or piece of equipment, whether purchased commercially or custom made, that is used to increase, maintain, or improve the functional capabilities of children with disabilities (as defined by IDEA 2004). “**Assistive technology**” is a sub-code of “**access**.” The sub-code “**adaptive tools**” fits because access can be limited or denied when a student cannot use a traditional tool due to his or her disability.

Adaptive tools

By “**adaptive tools**” I mean tools such as scissors or paint brushes that are modified to provide access for students with disabilities. “**Adaptive tools**” is a sub-code of “**assistive technology**.”

Attitude

By “**attitude**” I mean the student's perception of and interest in art, as well as his or her willingness to participate.

Behavior

By “**behavior**” I mean actions by a student that require redirecting or disciplinary responses, and I see it in the data when there are comments referring to inference or lack of participation due to “**behavior**.” A sub-code of “**behavior**” is “**OCD**.”

OCD

By “**OCD**” I mean a student display of obsessive-compulsive behaviors. I see it in the data when a student is excessively perfectionistic, unable to stop in the middle of a task, or visibly frustrated by inexact results or procedures. “**OCD**” is a sub-code of “**behavior**.”

Communication

By “**communication**” I mean any means of conveying personal needs, wants, opinions, responses, or reactions. I see it in the data in various forms, including verbal, non-verbal, sign

language, body language, use of gestures, use of visual supports or assistive technologies, or behavioral responses. A sub-code of **“communication”** is **“visual supports.”**

Visual supports

By **“visual supports”** I mean any visual means of expressive or receptive communication assistance. I see it in the data where there is a use of icons, pictures, visual schedules, or video modeling used to convey information to students and allow non-verbal students to respond. **“Visual supports”** is a sub-code of **“communication.”** A sub-code of **“visual supports”** is **“visual schedules.”**

Visual schedules

By **“visual schedules”** I mean step-by-step directives represented in a visual format with pictures or icons. I see this in the data with the use of art class visual schedules used in all classes every day, art skill in-task schedules used with specific art skills/projects, and first-then visual schedules. **“Visual schedules”** is a sub-code of **“visual supports.”**

Creativity

By **“creativity”** I mean the demonstration of creating something new or original **to the maker**. I do NOT mean the creation of something novel or unique from a global perspective, as in an invention or new product. I see it in the data when students experiment on their own with materials in a manner other than was modeled or used previously; when a student suggests, requests, or uses a varied approach; or when a student discovers or develops a new skill, technique or form of expression.

Create from personal experience or imagination

By **“create from personal experience or imagination”** I mean the category used and scored in daily student data collection referring to the above definition of **“creativity.”**

Curriculum

By **“curriculum”** I mean any instructional content, including lesson plans, student learning goals, and student instructional activities. Sub-codes include **“special education curriculum”** and **“art education curriculum.”**

Special Education curriculum

By **“special education curriculum”** I mean any instructional content, including lesson plan and learning target strategies based on special education research and best practice. Sub-codes include **“predictability,” “repetition,” “transition”** and **“age appropriate.”** **“Special education curriculum”** is a sub-code of **“curriculum.”**

Predictability

By “**predictability**” I mean the extent to which students can accurately determine what will happen in their environment and what will be expected of them. I see it in the data when procedures are repeated such that students seem to more readily understand, participate, and function with increased independence. “**Predictability**” is a sub-code of “**special education curriculum.**”

Repetition

By “**repetition**” I mean the repeating of procedures, tasks, skills, images, lessons, and concepts that allow students to become familiar with them, increasing “**predictability**”. I see it in the data lessons are repeated across several classes or spiraled in the curriculum. I also see it in individual activities such as stamping patterns “**repetition**” is a sub-code of “**special education curriculum,**” as well as a visual arts concept.

Transition

By “**transition**” I mean programming for the 18-21 year old students preparing to make the transition from school to work and community programs. “**Transition**” is a sub-code of “**special education curriculum.**”

Age appropriate

By “**age appropriate**” I mean curriculum content that is similar to that of same-age non-disabled peers. This is included as a code because it is generally related to interests and abilities at a given age level, yet it becomes less clear cut with students whose expressed interests are those typical of a much younger age group. “**Age appropriate**” is a sub-code of “**special education curriculum.**”

Art Education curriculum

By “**art education curriculum**” I mean any instructional content, including lesson plan and learning target strategies based on art education research and best practice. Sub-codes include “**create,**” “**connect,**” and “**respond.**” Those sub-codes fit because they are the categories for the national art education standards.

Create

By “**create**” I mean producing visual artwork of any kind, or participating in the art-making process at any level, from exploring tools and materials to designing and producing a finished product. “**Create**” is a sub-code of “**art education curriculum.**” Sub-codes for create include “**variety,**” “**pattern,**” and “**process vs product.**”

Variety

By “**variety**” I mean the use of or exposure to a range of options, for example, giving students a wide array of materials with which to work. Variety is also a term for an element of design, used when the artist wants to add complexity and interest to a visual artwork. “**Variety**” is a sub-code of “**create.**”

Pattern

By “**pattern**” I mean repeated design elements used in a predictable, mathematical manner. Pattern is also a term for an element of design. “**Pattern**” is a sub-code of “**create.**”

Process vs product

By “**process vs product**” I mean focusing on what a student learns, gains, or values as a result of engaging in the process of art making, independent from any created finished product. “**Process vs product**” is a sub-code of “**create.**”

Connect

By “**connect**” I mean relating artwork and artistic ideas to personal meaning or societal contexts. “**Connect**” is a sub-code of “**art education curriculum.**”

Meaning making

By “**meaning making**” I mean engaging in the artistic process in a manner meaningful to the maker. This could include giving personal meaning to an artwork, using artwork to convey meaning, or simply engaging with art materials in a manner that has personal value to the participant. “**Meaning making**” is a sub-code of “**connect.**”

Respond

By “**respond**” I mean expressing, verbally or nonverbally, an understanding or evaluation of an artwork. “**Respond**” is a sub-code of “**art education curriculum.**”

Respond to works

By “**respond to artworks**” I mean expressing, verbally or nonverbally, an understanding or evaluation, or even recognition of an artwork. “**Respond**” is a sub-code of “**respond,**” and is a coding term using in daily student data collection.

Present

By “**present**” I mean sharing of one’s own artwork or sharing interpretations or opinions on the artwork of others. “**Present**” is a sub-code of “**art education curriculum.**” A sub-code of “**present**” is “**share work.**”

Share work

By “**share work**” I mean showing others or telling others about one’s own artwork. “**Share work**” is a sub-code of “**present,**” and is a coding term using in daily student data collection.

Engagement

By “**engagement**” I mean involvement in the artistic process. Involvement could include physical participation, eye gaze or watching the artistic process, willing hand-over-hand involvement in the artistic process, or choice making or expressing of personal opinions regarding the art-making process. “**Engagement**” is a coding term used in daily student data collection. Sub-codes include “**attention,**” “**follow sequence/ visual schedule,**” and “**sensory.**”

Attention

By **“attention”** I mean the student’s taking notice of, or attending to, the person or process involved with in art making. I see it in the data when references are made to students’ attention span or mental or visual engagement in a task. **“Attention”** is a sub-code of **“engagement.”**

Follow sequence/visual schedule

By **“follow sequence/visual schedule”** I mean the use of visual pictures or icons to independently follow a predetermined schedule of events, tasks, or steps. It is seen as a category in the daily student data. **“Follow sequence/visual schedule”** is a sub-code of **“engagement.”**

Sensory

By **“sensory”** I mean experiences, reactions, or behaviors related to the physical senses of seeing, hearing, tasting, touching or smelling. I see it in the data when a student responds unusually or noticeably to sensory exposure such as light, sound or tactile experiences. This includes responses to things in the environment that the typical person is unaware of, such as the buzz of fluorescent lighting. **“Sensory”** is a sub-code of **“engagement.”**

Environment

By **“environment”** I mean the surrounding and conditions in which a student is participating in art. Sub-codes include **“encouragement,” “music,” “noise,” “space,” “structure,”** and **“rapport.”**

Encouragement

By **“encouragement”** I mean support and positive feedback given to a student. **“Encouragement”** is a sub-code of **“environment.”**

Music

By **“music”** I mean any form of music being played in the background in class. **“Music”** is a sub-code of **“environment.”**

Noise

By **“noise”** I mean any sounds that affect a student’s learning environment. Noise includes music, voice level and tone, sounds from heating and lighting and classroom speakers, vocalizations of students, sounds produced by movement of furniture or tools. Noise may be inside or outside the classroom, so long as students can hear it. **“Noise”** is a sub-code of **“environment.”**

Space

By **“space”** I mean the student’s physical surrounding. Space includes size of room, arrangement of furniture, distance between students and surrounding people and objects, visual boundaries, and personal space. **“Space”** is a sub-code of **“environment.”**

Structure

By **“structure”** I mean the predictable arrangement of lessons, tasks, space, tools, and materials. **“Structure”** is a sub-code of **“environment.”**

Rapport

By “**rapport**” I mean a harmonious relationship wherein both parties understand and trust each other. “**Rapport**” is a sub-code of “**environment.**”

Expectations

By “**expectations**” I mean the beliefs about what a student can or should achieve, accomplish, engage in, or be exposed to. I see it in the data when parents or staff members express their opinions about students’ goals or abilities. Sub-codes include “**staff perception**” and “**parent perception.**”

Staff perception

By “**staff perception**” I mean opinions about students’ preferences, goals, or abilities expressed in surveys, interviews, or daily data. “**Staff perception**” is a sub-code of “**expectations.**”

Parent perception

By “**parent perception**” I mean opinions about students’ preferences, goals, or abilities expressed in the parent surveys. “**Parent perception**” is a sub-code of “**expectations.**”

Experience

By “**experience**” I mean previous contact with or observation of art related materials, processes or activities. I see it in the data when parents refer to art-making experiences at home, in the community, or in previous schools.

Experimentation

By “**experimentation**” I mean the process of exploring materials or tools for the sole purpose of learning about them, and with little regard for the creation of a product. A sub-code of “**experimentation**” is “**try new things.**”

Try new things

By “**try new things**” I mean the willingness to use an unfamiliar tool or material, to explore a new sensory experience, to learn a new concept or technique, or to engage in an unfamiliar activity. “**Try new things**” is a sub-code of “**experimentation.**”

Initiation

By “**initiation**” I mean the act of beginning something. It is a student daily data collection category. I see it in the data when references are made or scores are associated with a student’s willingness or ability to independently begin a task or activity. Sub-codes of “**initiation**” include “**find area,**” “**find/get supplies,**” and “**begin activity independently.**”

Find Area

By “**find area**” I mean a student’s willingness and ability to independently locate and get to their own workspace. It is a student daily data collection category. I see it in the data when

references are made or scores are associated with a student's willingness or ability to independently find his or her assigned workspace. **"Find area"** is a sub-code of **"initiation."**

Find/get supplies

By **"find/get supplies"** I mean a student's willingness and ability to independently locate and get to the supplies they need at the moment. It is a student daily data collection category. I see it in the data when references are made or scores are associated with a student's willingness or ability to independently find and gather needed supplies. **"Find/get supplies"** is a sub-code of **"initiation."**

Begin activity independently

By **"begin activity independently"** I mean a student's willingness and ability to independently begin engagement in a task or activity. I see it in the data when a student starts an art activity independently based on use of visual schedules, understanding of class procedures, or knowledge of class routine. **"Begin activity independently"** is a sub-code of **"initiation."**

Instruction

By **"instruction"** I mean the methods and techniques used by teaching staff to foster student learning. It does not include curricular content, rather it is the means by which content and goals are delivered. Sub-codes of **"instruction"** include **"learning styles," "motivation," "wait time," "prompts," "timing,"** and **"understanding."**

Learning styles

By **"learning styles"** I mean each student's unique way of learning based on preferences, abilities, and disabilities. It can include styles such as verbal, auditory, written, kinesthetic, logical, sensory, social or intrapersonal. **"Learning styles"** is a sub-code of **"instruction."**

Motivation

By **"motivation"** I mean a student's desire or willingness to do something, or the means by which teaching staff fosters a desire to do something. **"Motivation"** is a sub-code of **"instruction."**

Wait time

By **"wait time"** I mean the time delay in instruction that allows for sufficient cognitive processing time of a directive or question. **"Wait time"** is a sub-code of **"instruction."**

Prompts

By **"prompts"** I mean cues or clues given to a student who seems to be stuck or lacking understanding. Prompts include gestures such as pointing, picture clues, multiple choice options, presentation of original directive in a different manner, physical nudges, and full physical assistance. **"Prompts"** is a sub-code of **"instruction."**

Timing

By **"timing"** I mean the choice of when a particular task or activity is presented or conducted. I see it in the data when responses to an activity are unusual due to the "timing" as

related to other events, such as vacation days, medication cycles, meals, fire drills, active or passive activities, etc. **“Timing”** is a sub-code of **“instruction.”**

Understanding

By **“understanding”** I mean general comprehension of a directive, request, or concept. **“Understanding”** is a sub-code of **“instruction.”**

Skill development

By **“skill development”** I mean the development of the ability to do something. Sub-codes of **“skill development”** include **“learning outcomes,” “art skills,” “life skills,” “material/tool usage,”** and **“motor skills.”**

Learning outcomes

By **“learning outcomes”** I mean the student learning goals for each lesson as well as the actual skills learned that might not have been intended as learning outcomes. **“Learning outcomes”** is a sub-code of **“skill development.”**

Art skills

By **“art skills”** I mean the ability to use specific art tools and materials and apply art concepts. **“Art skills”** is a sub-code of **“skill development.”**

Life skills

By **“life skills”** I mean the skills that are necessary or preferable for full participation in daily life. They include problem solving, decision-making, literacy, numeracy, communication, coping with stress and emotions, diet and healthy living, self-care, and interpersonal relationships. **“Life skills”** is a sub-code of **“skill development.”**

Material/tool usage

By **“material/tool usage”** I mean the ability to safely and appropriately use a variety of tools and materials. This includes traditional art materials such as paints, brushes, and modeling materials, as well as more general use tools, such as scissors, pens, and pencils. **“Material/tool usage”** is a sub-code of **“skill development.”**

Motor skills

By **“motor skills”** I mean physical body movements carried out when the brain, nervous system, and muscles are working together. **“Motor skills”** is a sub-code of **“skill development.”**

Fine motor

By **“fine motor”** I mean small, controlled movements of the hands and fingers. **“Fine motor”** is a sub-code of **“motor skills.”**

Gross motor

By **“gross motor”** I mean large movements of the arms, legs, or entire body. **“Gross motor”** is a sub-code of **“motor skills.”**

Self-determination

By **“self-determination”** I mean the control over one’s own life and advocacy for one’s own preferences and desires. Sub-codes of **“self-determination”** include **“independence,” “preferences,” “self-expression,” “self-regulation,”** and **“self-worth.”**

Independence

By **“independence”** I mean the ability to do something without assistance. **“Independence”** is a sub-code of **“self-determination.”**

Preferences

By **“preferences”** I mean personal desires and choices, or things that are enjoyed or appreciate more than other things. I see it in the data with students’ preferred activities, favorite colors or tools, or desired working environments. **“Preferences”** is a sub-code of **“self-determination.”** A sub-code of **“preference”** is **“choice.”**

Choice

By **“choice”** I mean the act of selecting between options. **“Choice”** is a sub-code of **“preferences.”** Sub-codes of **“choice”** are **“limited choice”** and **“open-ended choice.”**

Limited choice

By **“limited choice”** I mean selecting between a small number of predetermined options. I see this in the data when students are given visual choices, for example, picking one of four presented color choices. **“Limited choice”** is a sub-code of **“choice.”**

Open-ended choice

By **“open-ended choice”** I mean selecting between an unlimited number of options. I see this in the data when students choose a free art activity and can choose a familiar art bin of specific art tools and materials or request a desired material or activity. **“Open-ended choice”** is a sub-code of **“choice.”**

Pride

By **“pride”** I mean a feeling of pleasure or satisfaction a student feels or expresses based on his or her accomplishments. I see it in the data when a student expresses pleasure from created artwork, either verbally or nonverbally. I also see it when parents or staff say that a student has willingly shared their artwork with them. **“Pride”** is a sub-code of **“self-worth.”**

Self-expression

By **“self-expression”** I mean the expression of a student’s own thoughts, feelings, or ideas. **“Self-expression”** is a sub-code of **“self-determination.”**

Self-regulation

By **“self-regulation”** I mean the ability of a student to control his or her own emotions, reactions, and impulses. **“Self-regulation”** is a sub-code of **“self-determination.”**

Self-worth

By “**self-worth**” I mean the sense a student has of his or her own value as a person or as a valued part of a community. “**Self-worth**” is a sub-code of “**self-determination.**” A sub-code of “**self-worth**” is “**pride.**”

Pride

By “**pride**” I mean a feeling of pleasure or satisfaction a student feels or expresses based on his or her accomplishments. I see it in the data when a student expresses pleasure from created artwork, either verbally or nonverbally. I also see it when parents or staff say that a student has willingly shared their artwork with them. “**Pride**” is a sub-code of “**self-worth.**”

Therapy

By “**therapy**” I mean the use of art to heal, sooth or calm, or express or cope with feelings in a healing manner.

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