Art education and students with emotional disabilities: high school case studies of postmodern learning, social interaction development, and academic achievement

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ABSTRACT

ART EDUCATION AND STUDENTS WITH EMOTIONAL DISABILITIES: HIGH SCHOOL CASE STUDIES OF POSTMODERN LEARNING, SOCIAL INTERACTION DEVELOPMENT, AND ACADEMIC ACHIEVEMENT

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School of Art and Design
Northern Illinois University, 2017
Kerry Freedman, Director

The purpose of this study was to assess the impact of inclusive postmodern visual arts education for students with ED. The research examines arts learning, social skill interaction development, and general academic achievement. Previous research in the field of special education has focused almost exclusively on behavioral interventions from behaviorist or cognitive approaches for students with ED. Instead, this research focuses on the ability of students to build art skills and change behaviors through constructivist pedagogical approaches.

These mixed-methods case studies were implemented over a period of two semesters with four students, four teachers, and two high schools. From the two data sites, seven sets of data were collected: observations, artwork, interviews with students and teachers, GPA, class rank, and graduation status. A mixed-methods case study allowed for investigation into both the individual experience and the larger group experience while addressing the lack of quantitative research on this population in relation to art education.

The findings from this study indicate that over time the students in visual arts developed fluency and skills in artmaking, which led to confidence in their work and better peer relationships. The artwork students produced illustrates how they observed, interpreted, and represented themselves through visual media. Data from this research suggest that exposure to
art may help students envision other ways of being through learning about their peers and exposure to visual media. The findings from the transcript analysis correlate with the data regarding visual arts participation improving students’ ways of seeing the world and their habits of mind, in that both sets of data indicate that sustained engagement in the arts provides the largest differences in ways of thinking and behaviors.
ART EDUCATION AND STUDENTS WITH EMOTIONAL DISABILITIES:
HIGH SCHOOL CASE STUDIES OF POSTMODERN LEARNING,
SOCIAL INTERACTION DEVELOPMENT,
AND ACADEMIC ACHIEVEMENT

BY
KELLY GROSS
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A DISSERTATION SUBMITTED TO THE GRADUATE SCHOOL
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE
DOCTOR OF PHILOSOPHY

SCHOOL OF ART AND DESIGN

Dissertation Director:
Dr. Kerry Freedman
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CHAPTER 1
INTRODUCTION

Researcher Background

I never had ambitions to become a teacher. As a high school student, I volunteered extensively with the Children’s Center for the Visually Impaired but applied exclusively for design undergraduate programs. As an industrial design major and photography student, one of the most impactful experiences of my undergraduate work was an elective class teaching photography in an alternative high school. With a slumping economy, I decided to give teaching a try and applied for an alternative certification program. In my first year of teaching, in the New Orleans Public Schools, I was RIF-ed after eight weeks when the school board determined there were too many first-grade teachers in our school for the number of enrolled students. When telling me this news, the principal of the school mentioned that there was a group of students who did not have a teacher, and if I was willing to work with them, I could stay at the school. I agreed, becoming a special education teacher for a self-contained class of students with severe emotional and behavioral disorders.

Prior to my becoming their teacher, this group of students had been “watched” by a para-professional in a classroom for students with severe and profound physical and cognitive impairments. Four bright and capable boys had been hidden in a room with non-verbal children with severe physical impairments, filling out worksheets for eight weeks. We spent the next two years together, and during that time, I strived to make their educational experience engaging through hands-on learning. Our school did not have art, music, physical education, or library.
But I found my students could focus better when given time to create, make, and discuss as part of our daily routine. A few years later in New York City, I worked as a teaching artist in public schools, group homes, day facilities, and homeless shelters. The arts were a valued part of the communities in which I worked, and I could see how much the participants enjoyed their experiences.

I later became an inclusive elementary art teacher, but the isolating experience of self-contained settings has always haunted me. Separate self-contained classes seemed to be tracks from which students could rarely escape. Students were not provided opportunities to learn with and/or from non-disabled peers. Below-grade-level curriculum, low expectations, and poor study habits were the norm. Few students were on a path to graduate from high school equipped with necessary social and academic skills. While many students with special needs experience self-contained settings, I chose to focus this study on students with Emotional Disabilities (ED), a population with whom I have had the most experience. The focus of this study combines my experiences as a special education teacher and an art educator to examine the impact of inclusive visual arts classes for students with ED.

**Historical Context of the Study**

Although art education and special education have independently been part of public school education since the late 1800s, art educators only began working with students with special needs in the early 20th century (Michael, 1981). It was not until the 1970s, with the passage of Public Law 94-142, that general art education classes became inclusive settings serving students with and without disabilities (Gerber & Guay, 2006). While the fields of art education and special education remain distinct disciplines, it is the intersection of the two that provides the context for this study. Over the past forty years, art educators have learned to meet
the needs of students with disabilities, but challenges remain in serving specific populations, including students with ED.

**Art Education in Public Schools**

Visual arts in United States K-12 public education dates back to the 1860s when Massachusetts incorporated the teaching of drawing in schools (Stankiewicz, 2001). Through the late 1800s, the inclusion of drawing was urged to develop intellectual, moral, and economic reasoning, along with developing manual training skills for an industrial worker (Efland, 1990). However, this changed at the turn of the century when emphasis was placed on craft and handmade objects, and drawing was taught as a “means for acquiring the knowledge of the elements of beauty” (Efland, 1990, p. 172). Cizek’s Juvenile Art Class, founded in 1903, and the resulting highly acclaimed exhibitions of student work emphasized a curriculum of creative individual expression (Duncum, 1982; Efland, 1990). Influenced by Freudian psychology, educators believed this approach “avoided the imposition of adult ideas on children” (Efland, 1990, p. 222). However, Duncum (1982) found that Cizek’s pedagogy was not nearly as individualistic or naturalistic as suggested.

Following World War II, American schools enacted philosophies of progressive education with a child-centered approach for arts based in creative and therapeutic self-expression. At the same time, the field of art therapy began to emerge, also building on Freudian psychology, with Naumberg’s research at the New York State Institute in the 1940s (Jung, 1994). Initially, there was significant crossover between the fields of art education and art therapy, with researchers such as Lowenfeld (1947) writing about the value of “creative art activity for the healthy and psychological growth and development of the child” (Packard, 1980, p. 11). The pioneering work of Naumberg and Kramer led to the establishment of the *American*
Journal of Art Therapy (1961), the first master’s degree in art therapy at Hahnemann Medical College in the mid-1960s, and the founding of the American Art Therapy Association (1969) (Jung, 1994; Packard, 1980). By the end of the 1960s, art therapy and art education were seen as two distinct fields with separate philosophies, purposes, degree programs, and professional organizations.

Beginning in the 1960s, art educators began to advocate for the arts as a “discipline in its own right” (Efland, 1990, p. 242) and new curricular theories emerged in the following decades (Barkan, 1966). Art education curriculum had fully incorporated the modernist and pro-democratic ideals of individualism and the naturally talented individual (Freedman, 1989). It was perceived that “talent was something you either had or you didn't; it was finite and could be wasted” (Freedman, 1989, p. 110). Instead of inclusive approaches to art education, a cycle emerged in which talented individuals were identified based on the values of White, male, and middle-class culture, thereby leading to the further promotion of individuals and curricula representative of this specific population (Freedman, 1989). Emerging curriculum theories included the teaching of art content (Barkan, 1962; Eisner, 1972), aesthetic education (Smith, 1966, 1989), and arts-in-education (Bloom, 1956; Eddy, 1980). In the 1980s, Discipline Based Art Education (DBAE) became the predominant approach taught in art education preservice programs and K-12 schools. DBAE, developed by the J. Paul Getty Trust, promoted education across four disciplines within the arts: aesthetics, art criticism, art history, and art production. However, DBAE was criticized for making art learning a passive form of engagement, reducing the importance of studio activities, and being elitist (Efland, 1990).

The late 1980s and 1990s represented a shift in thinking about who and what should be included as part of art education. Art educators urged the use of curricula that addressed
multiculturalism (Cahan & Kocur, 1996; Delacruz, 1995; Mason, 1988), folk and popular arts (Congdon & Blandy, 1999; Duncum, 1989; Freedman & Wood, 1999), and social issues (Duncum, 1989; Freedman, 1989; Greene, 1978; Lanier, 1969). Efland, Freedman, and Stuhr (1996) argued that the primary reason for arts education should be to enable students to make meaning of the social and cultural worlds they inhabit. With resistance to the DBAE approach and a cut in the Getty Trust funding in the late 1990s, an era of reconceptualization for United States art education began (Carpenter & Tavin, 2010). Issues of social perspectives and inclusion emerged in art education research, including persons of differing abilities (Blandy, 1994), gender identity issues (Check & Lampela, 1999), and democracy in education (Blandy & Congdon, 1987; Freedman, 2000).

Today, art education curriculum and pedagogy at the secondary level often incorporates postmodern philosophies and aims to engage a diverse population of students in social and cultural issues. Researchers have argued that art education can help students to develop deeper appreciation and understanding of the world around them because it “is about the objects, meanings, purposes and functions of the visual arts students make and see every day” (Eisner, 2002; Freedman, 2003, p. 2). However, a disconnect remains between the perceived role and curricular aims of art education and its implementation in secondary schools. Graham (2009) noted that the AP art portfolio still emphasizes formalist notions of artmaking and accentuates the elements and principles of design. Freedman (2003) explained that most high school classes tend to focus on a single medium, emphasizing the development of technical skills over conceptual skills and failing to recognize the postmodern approach of multimedia. Additionally, although 89% of high schools in the United States offer visual arts instruction (NCES, 2008), only 57% of public schools require visual arts coursework for graduation (NCES, 2010). Out of
those students who choose to focus on visual arts in high school, few end up pursuing careers in the visual arts (Short, 1998). Critics have argued that art education at the high-school level too often focuses on the recognition of a student’s individual talent and the preparation of students for fine arts careers rather than on creating inclusive environments that educate all students to be knowledgeable viewers and expressive producers of visual imagery (Freedman, 2003; Short, 1998).

**Special Education in Public Schools**

Providing services for students with special needs has evolved dramatically over the last 150 years. The history of special education can be found in the individual work of de Leon, Itard and Howe, dating back to the early 19th century (Rosenberg, Westling & McLeskey, 2010). In 1869, the first classroom for children with disabilities (deafness) in regular elementary school was created in Boston (Berrigan, 2011). However, throughout the first half of the 20th century, many children and adults with disabilities were placed in institutions for full-time care, living apart from families in overcrowded sites with limited or no educational experiences.

The rise of the field of psychology and the civil rights movement led to changes in the public perception of how persons with disabilities should be treated. During the 1960s, President John F. Kennedy and Senator Robert Kennedy, whose sister Rosemary had a cognitive disability, advocated for persons with disabilities. This influenced public perception and helped lead to changes in the treatment of persons with disabilities. New approaches in the field of psychology led to “an increased emphasis on what a student CAN do, instead of what he or she cannot do” (Gerber & Guay, 2006, p. 16). Yet in 1970, U.S. schools educated only one in five children with disabilities and many states had laws that excluded children with disabilities such as deafness, blindness, and mental retardation (Disability History Museum, 2013).
In 1975, PL 94-142, the Education for All Handicapped Children Act, was passed and guaranteed the availability of “free and appropriate public education” and “individual education plans” (IEPs) for all students with disabilities (Rosenberg, Westling & McLeskey, 2010, p. 33). This legislative change granted access to public education for millions of children who had previously been excluded while also guaranteeing support for students with disabilities while in school. Currently, approximately 6.7 million school-aged children in the United States qualify as having a disability that interferes with their ability to learn and are serviced by an Individualized Education Program (IEP) (Rosenberg et al., 2010).

As Gardner (1999) points out, most schools address learning using homogeneous approaches. All students are taught the same thing, in the same way, and are assessed in a standardized manner. Special education was the first field to actively acknowledge that not all students have the same strengths. The goal of an IEP is to individualize education for a specific student with disabilities. While an IEP usually contains a section that describes a student’s strengths and weaknesses, the end goal of an IEP is to address deficits in student skills and learning styles. These deficits become accommodated for and remediated to help students learn to function on “normal” levels.

One of the foundations of special education services is the assumption that students with special needs have deficits, and educators have often focused on what students cannot do. Daniels and Hedegaard (2011) wrote that “primary defects such as sensory, organic, or neurological impairments have an impact on the development of perceptual and higher cognitive functions” (p. 13). This focus on what skills students lack or on how they are different is the basis for the deficit paradigm. The deficit paradigm tries to remediate impairments in a way that is removed from real-life contexts (Armstrong, 2008). In contrast, Oliver and Barnes (1998)
assert that when you focus on the strengths of students it is easier to focus on appropriate strategies that will help with remediation. Emerging out of the capability approach, Oliver and Barnes suggest the use of the growth paradigm when working with students with special needs.

The growth paradigm assists a person in learning and growing through a rich and varied set of interactions. Learning theory in the growth paradigm maintains connections with peers in pursuing as normal a life as possible. It uses materials, strategies and activities good for all students and establishes collaborative models (Daniels & Hedegaard, 2011). According to Walker (2001), “there is nothing inherently unequal about difference, but differences can become inequalities” (p. 12). How do we structure learning in art education to provide opportunities?

It is assumed that learners have to construct their own knowledge--individually and collectively. Each learner has a tool kit of concepts and skills with which he or she must construct knowledge to solve problems presented by the environment. The role of the community--other learners and teacher--is to provide the setting, pose the challenges, and offer the support that will encourage construction. (Davis, Maher, & Noddings, 1990, p. 3)

Today special education remains focused on the remediation of deficits. When students exhibit extraordinary deficits in one area that cannot be explained by outside influences, the special education team will determine one or more disability categories for which the student may need to receive services. The Individuals with Disabilities Education Act 2004 (IDEA) defined 13 broad disability categories under which students could receive services. In looking at previous research, the disability category that is often described as having the highest risks for low achievement in school and in the postsecondary setting is students with emotional and behavioral disorders (Rosenberg et al., 2010; Wagner, Kutash, Duchnowski, Epstein, & Carl Sumi, 2005).
**Approaches to Special Education for Students with ED**

Prior to the twentieth century, most people with emotional and behavioral disorders were thought to suffer from illness related to germs or disease that could be cured and treated through medication, shock therapy, or blood-letting (Jones, 1996). During the twentieth century, progress in diagnoses and treatment of children with emotional disabilities included better assessment instruments, new legal statutes, and more comprehensive treatment plans (Reynolds & Fletcher-Janzen, 2007). By the 1960s and 1970s, behavior modification techniques became popular, and efforts were made to deinstitutionalize this population, mainstream students into public schools, and focus on symptoms rather than causes (Jones, 1996). Educators and interventionist sought to “actively manipulate the unacceptable behavior” (Reynolds & Fletcher-Janzen, 2007, p. 826) and maintain order in the classroom by modifying and controlling behaviors through external reinforcement (Jones, Dohrn, & Donn, 2004; Ryan, Reid, & Epstein, 2004).

Researchers have noted that models of behaviorism cannot adequately explain the acquisition of higher level thinking skills or those that require a greater depth of processing, such as abstract conceptualization (Efland, 2002; Ertmer & Newby, 1993). Behavioral theories, and teaching methods based upon those theories, that fail to teach or build understandings of information in a way that is meaningful are problematic. Thorndike (2014) suggested that drilling students does not help and students must practice skills directly in different contexts. By focusing on skill acquisition, teachers may not concurrently be teaching skills such as analysis, application, evaluation, and creation. So while behavior modification has proven to be an effective teaching model based on the theories of behaviorists, further research using behavioral models in subject areas such as art, where objectives aim to address higher level thinking skills, may be inappropriate.
Inclusive Art Education

With the passage of Public Law 94-142 in 1975, there was an increase in mainstreaming and gradually moving toward inclusion of students with disabilities in the general and art classrooms. There were no specific references to arts in the 1975 law; however, a mention of the arts was included in the comments section, which stated that “related services may include services such as artistic and cultural programs and art, music, and dance therapy if they assist a handicapped child to benefit from special education” (Sherrill, 1979, p. 2). Sherill noted that the passage of PL 94-142 “required school systems to offer children with disabilities the same art, music and drama programs they offered to general education students” (as cited in Gerber & Guay, 2006, p. 19). While this may have led to an initial inception of mainstreaming students with special needs in “non-academic” classes, it also meant that some of the earliest educators who were learning to accommodate students with special needs in their classes were art educators. “When art teachers provided these students with opportunities for self-expression and learning about art, they opened the door to broader mainstreaming efforts and broader opportunities for their students” (Gerber & Guay, 2006, p. 19).

IDEA (1997) and the No Child Left Behind Act of 2001 (NCLB) strengthened and further defined the role of art education teachers in working with students with disabilities. Today art education is classified as a core academic subject, and art educators are increasingly involved in the education of students with IEPs. IDEA requires that art educators should be prepared to ensure access to the general education curriculum for all students, be knowledgeable about accommodations, be willing to participate in IEP meetings and to increase awareness of cultural diversity, specifically contributions minority populations, including persons with disabilities, may have made to the arts (Gerber & Guay, 2006). NCLB was the first educational
law that included the arts as a core academic subject, yet the increased emphasis on reading and mathematics in NCLB has often been cited as a cause of reduction in arts programs (Gerber & Guay, 2006). As a result of the legal mandates from PL 94-142 to NCLB, art teachers have had to learn to include and accommodate students with special needs. Art educators have described some of the reasons that access to art education is beneficial for students with disabilities:

The art room gives students a chance to explore their own vision, thoughts and feelings in a non-threatening supportive place, often at their own pace. Art classrooms provide opportunities for hands-on exploration and learning with concrete materials. It is an environment that encourages risk-taking. A student with a history of failures, from letter reversals to inappropriate behaviors, may not want to risk failure and take a chance to solve new problems. Art education encourages individual problem solving and creative thinking. (Gerber & Guay, 2006, p. v)

Who art educators include in curriculum and what they teach have gradually transitioned from a modernist approach to a postmodern approach. No longer is art education solely focused on the gifted White male artists. Today, art education curriculum and pedagogy at the secondary level often incorporates postmodern philosophies and aims to engage a diverse population of students in social and cultural issues. Postmodern approaches to art education embrace the complex and subtle nature of our world, multiple perspectives, and varying forms of visual aesthetics (Efland, Freedman, & Stuhr, 1996; Freedman, 2003). Art education programs that utilize postmodern approaches recognize the importance of varying viewpoints, voices, and abilities. As educators continue to incorporate these approaches in their teaching, they provide opportunities for students with disabilities to become active learners and participants in the art community.

Several art educators have argued that the field of art education needs to reconceptualize how we view, represent and think about disability. Blandy (1991) was concerned about the “dependence of art educators on a functional-limitations orientation” (p. 141). He argued that our
dependence prevented full participation in the arts by all children, youth, and adults. Blandy made general recommendations to the field about ways to create a fully participatory art community:

The first step will be to discard those art education practices that are incongruent with the sociopolitical orientation. We now know that people experiencing disabilities will not be content with their artwork being perceived as ‘curious’ or as a ‘genre’ categorized by such designations as ‘outsider art’, ‘mad’, or ‘l'art brut.’ Such designations emphasize disability rather than ability, dis-similarity rather than similarity. (Blandy, 1991, p. 139)

More recently, Derby (2011) argues that “art educators can make vibrant contributions to disability studies by culturing critical art making curricula that address disability” (p. 94).

Furthermore, Derby felt that the field of art education and disability studies should engage in scholarly conversation together to “enable the pedagogical potential of an inclusive, interdisciplinary space” (p. 106). Others have written about the important contribution of artists with disabilities creating works that contribute to a full and inclusive understanding of our shared lived experience (Hall, 1997; Metcalf et al, 2005; Ware, 2011). Ware (2011) states, “The arts can be of particular value for exploring a unique life experience authored by disability” (p. 195).

Because the No Child Left Behind Act focused on core standards, quantifiable and factual knowledge is valued (Taylor, 2006). Therefore, many interventions for students with disabilities have focused on developing those skills which are best addressed through behavioral and cognitive learning theory. However, art curriculum “should not be thought to be able to be defined by quantifiable chunks, taught systematically in sequential units” (Boughton, 2004, p. 590). Instead, the field needs to explore how we can better create inclusive environments that educate all students to be knowledgeable viewers and expressive producers of visual imagery (Freedman, 2003).
Problem Statement and Purpose

Students with ED constitute .8% of school-aged children, of which 20% are provided education in settings that are not in public schools (NCES, 2016). Approximately 52% of students with ED spend over 60% of their educational experiences in settings apart from non-disabled peers (Jones, Dohrn, & Dunn, 2004). This leads to many students with ED being isolated from classroom settings in which social skills are positively modelled and social interactions with non-disabled peers can occur.

According to Wagner, Kutash, Duchnowski, and Carl Sumi (2005), children with ED are more likely to experience less school success than any other subgroup, including students with other types of disabilities. Approximately one third of students with ED are arrested during their school years, and one half are unemployed three to five years after leaving school (Rosenberg, Westling, & McLeskey, 2010). Students with ED have been found to have low-level social skills, limited self-control, communication difficulties, and low academic achievement (Wagner et al., 2005). Reading comprehension and mathematics calculation subtests for elementary and middle school children with ED indicate significant academic deficits. According to Wagner et al., more than 6 in 10 children with ED (61.2%) score in the bottom quartile of the school-aged population, 51% of students with ED drop out of rather than complete high school, and only 22% of students with ED earn a standard diploma (Jones, Dohrn, & Dunn, 2004; U.S. Dept. of Education, 2005). Following graduation, approximately 10-17% of students attend secondary education, but 60% are incarcerated at least once within five years of leaving high school (Jones, Dohrn, & Dunn, 2004).

Despite poor academic outcomes, the majority of interventions conducted in the past with students with ED have focused on behavior modifications, often neglecting academic and
skill deficiencies (Ryan, Reid, & Epstein, 2004). However, researchers have begun to address academic and skill deficits of students with ED to increase their engagement in school and with the hope of improving graduation rates (Mooney, Epstein, Reid, & Nelson, 2003). Additionally, researchers have argued that student engagement in class can act as an antidote for the alienation that many students with ED exhibit in school settings. (Jones, Dohrn, & Dunn, 2004).

Postmodern art education curricular and pedagogical approaches could provide engaging choice-based opportunities for students to develop academic and social skills.

Keifer-Boyd and Kraft (2003) found through a case study of an inclusive community arts program that arts education and special education needed to establish a working relationship to help enhance the lives of students both with and without disabilities, and inclusion programs needed to be utilized more often for students with special needs. Visual arts provide a unique avenue for all students to develop skills that may not be taught, understood, or acquired through other discipline areas. According to Mason, Thormann, and Steedly (2004), “It is critical that we gain a better understanding of when, where, and how arts integration makes a difference in the lives of students with disabilities, their teachers, and their schools” (p. x). Although many art educators have focused on the intersection between art education and disability studies (Blandy, 1991; Dalke, 1984; Derby, 2011; Gaitskell & Gaitskell, 1953; Gerber & Guay, 2006; Keifer-Boyd & Kraft, 2003; Lowenfeld, 1934; Mason et al., 2004; Michael, 1981), after examining the literature it appears that few studies have been published that focus on art education and students with ED (Isis et al., 2010; Lepic, 2004; Murray, 2001; Tomaszkiewicz, 1984; Viglione, 2009). The purpose of this study is to examine the development of art skills, art concepts, and social interactions along with GPA and graduation rates for high school students with ED who take inclusive visual arts classes.
Research Questions

This research was based on the following research question:

1. To what extent do postmodern visual arts classes help high school students with ED develop art skills and concepts over the course of a semester?

2. To what extent do high school students with ED who participate in postmodern visual art classes demonstrate an increase in social interactions measured by positive peer-peer and student-teacher interactions and engagement in arts classroom activities over the course of a semester?

3. Do high school students with ED who participate in postmodern visual art classes have higher levels of achievement in terms of GPA, class rank, and graduation rates than students with ED who do not participate in visual arts?
   a) Is there a positive correlation between the number of art classes taken and cumulative GPA for students with ED?
   b) Is there a difference in the mean cumulative GPA for students with ED based upon the number of art classes taken?
   c) Is there a positive correlation between the number of art classes taken and class rank for students with ED?
   d) Is there a difference in the mean class rank for students with ED based upon the number of art classes taken?
   e) Is there an association between the graduation status for students with ED based upon the number of art classes taken?
**Significance of the Study**

Insufficient research has focused on art education for students with ED (Isis et al., 2010; Lepic, 2004; Murray, 2001; Tomaszkiewicz, 1984; Viglione, 2009). It is my hope that through this study I may be able to examine changes and growth in students with ED through the experience of postmodern art education. This study examined the development art skills and concepts for students with ED over the course of the semester. Additionally, it examined changes in social interactions for students with ED who took visual arts classes. Finally, although research has indicated students benefit from taking art classes (Catterall & NEA, 2012; Jensen, 2001; Tishman et al., 2002; Vaughn & Winner, 2000; Wilhelm, 2002), this research sought to expand on that by demonstrating a positive correlation between the number of art classes taken and general academic achievement for students with ED.

**Conceptual Framework**

The framework for this study is based on the theory of constructivism, an epistemological approach to learning. Historically, special education approaches have been rooted in behaviorism, with more progressive approaches incorporating cognitive learning theory. Traditionally, interventions have been developed to teach appropriate behaviors and skills have been taught through a deficit-based approach. In contrast, art education has a long history of valuing children’s art and knowledge as central to the classroom content (Simpson, 2005). This approach, starting in the 1930s, has laid the foundation for postmodern approaches based upon constructivist philosophies. As the conceptual framework for this study relies upon a constructivist approach, in which students are valued as actively engaged in the learning process, the study presents the opportunity to change perceptions of what might constitute effective interventions for students with disabilities. Within constructivism, three relevant theories have
been identified from the literature: social competency, art education and cognition, and postmodern approaches to art education (Figure 1).

![Conceptual framework](image)

**Figure 1.** Conceptual framework.

**Constructivism**

Constructivism is not a learning theory per se, but a philosophical explanation about the nature of learning (Schunk, 2008) in which students develop conceptual knowledge, techniques, procedures, and mathematical thinking through teacher-led scaffolding. While theories such as social competence and art education can be approached from multiple viewpoints, for the purpose of this research they will be viewed through a constructivist lens. Constructivists believe that people construct knowledge through a sequential development of each person’s cognitive abilities as they attempt to make sense of the experiences. The basis for this research can be found in the theories of Bloom (1956), Dewey (1934), Piaget (1953), and Vygotsky (1978), who examined how students develop knowledge and higher levels of thinking through a progression of experiences. Vygotsky’s theory of socio-cultural development recognizes that social interactions are critical and knowledge is constructed between two or more people. Interestingly, a significant portion of Vygotsky’s theories were directly related to the development of individuals with disabilities (Valenzuela, 2014, p. 300).
In constructivist learning theory people move through increasingly complex ways of thinking from recognition to recall, analysis, reflection, application, creation, understanding, and evaluation. Current K-12 education is based on the theories of constructivism in which students develop conceptual knowledge, techniques, procedures, and mathematical thinking through teacher-led scaffolding. Valenzuela (2014) notes that instructional activities under a socio-cultural framework should focus on conceptual development rather than skill development (p. 302). The role of the educator is to develop and increase conceptual knowledge by managing the content of learning activities and leading students to higher levels of thinking.

Art education often employs constructivist approaches. For instance, when helping students understand the color wheel and mixing, art teachers provide students with paints in the primary colors. Students experiment and learn that yellow and blue do in fact combine to make green. This is much more meaningful for students than if they simply are given green paint and told it is a secondary color. A review of the literature suggests that little research has been conducted in the field of special education regarding constructivism and a divide exists between disability studies and special education. Behavioral and cognitive approaches are the predominant methods for research in the field of special education. In contrast, social constructivism is the conceptual framework that defines disability studies. However, based on Vygotsky’s work, advocates of social constructivism have begun a new line of research in special education (Armstrong, 2008; Farrell, 2012; Trent, Artiles, & Englert, 1998). Michaels and O’Connor (1990) argue that teachers must explicitly teach students with disabilities the higher cognitive skills and strategies that are valued and privileged in schools. One study that employed models of sociocultural approaches as part of reading instruction showed student gains to be significant (Bos, Anders, Filip & Jaffe, 1989). Watson (2001), through case study research,
found that using constructivist approaches can help students with learning disabilities develop autonomy. Danforth and Smith (2005) examined an application of a constructivist approach for students with emotional and social difficulties and found that involving many agents of change, including teachers and classmates, helped to influence the world around the child, including the classroom, teacher’s attitudes, and teacher’s practice. In *New Perspectives in Special Education*, Farrell (2012) theorizes that by using a constructivist approach for special education in areas such as music or art, different student views and opinions may be accepted. Researchers in the field of special education are starting to incorporate social constructivist approaches to working with students with disabilities (Anastasiou & Kauffman, 2011; Armstrong, 2008; Farrell, 2012; Trent, Artiles, & Englert, 1998; Watson, 2001).

**Social Competency**

Social competency is described as the ability to maintain successful relationships with other students or peers and adults. Social competency refers to a student’s ability to make judgments about social situations, knowledge of appropriate behaviors, ability to act out these behaviors, and ability to inhibit negative social behaviors (Gresham et al., 2004; Kennedy-Moore, 2011). A lack of social competency is often due to difficulties with specific social skills. Social skills are defined as socially acceptable learned behaviors that allow a student to effectively interact, avoid or inhibit socially unacceptable behaviors, create and maintain satisfying relationships, and be able to adjust behavior to particular situations (Gresham et al., 2004; Kennedy-Moore, 2011). According to Patterson et al. (2006), research indicates that the absence of appropriate social skills falls into three categories: 1) lack of acquisition of the skill, 2) failure to perform an appropriate skill at the correct time, or 3) fluency deficit in which the student has knowledge of the skill and wishes to perform it but fails to do so in an appropriate
manner (p. 24). Social competency can be seen as related to constructivism in that first students must acquire a skill (such as how to appropriately respond to criticism); then students must develop through interaction with their environment an increasingly complex schema that allows them to know when and how to apply that skill in specific situations.

Several studies have pointed to a link between arts education and social skill development. Jensen (2001) noted that fine arts programs are known for “fostering commitment to task and social skill development” (p. 63). Eisner (2002) explained that when students’ artwork is examined in social settings, instruction moves beyond visual qualities and includes social norms, models for behavior, and opportunities to converse and share one’s work with others. The art environment can give students opportunities for developing social skills, which is an especially important opportunity for students with ED who are often placed in highly structured environments.

The first characteristic necessary for generalization of social skills is the integration of social skills into the regular curriculum (Miller et al., 2011; Snider & Battalio, 2011). Fenty, Miller, and Lampi (2008) argue that the most effective method of promoting social skill acquisition is to provide the opportunity to actually perform the skill in context. Art teachers should “explicitly teach understandings, skills, and dispositions that positively affect student learning as a regular part of the art curricula” (Russell & Hutzel 2007, p. 7). Gerber and Guay (2006) concur that art teachers can help students develop the behavioral and social skills expected in classroom settings, including “taking turns, respect for others, working independently, and similar skills” (p. 89). Social skills can be explicitly taught through artmaking, critical discussion of imagery, and social experiences that engage children in collaborative learning activities (Hutzel, Russell & Gross, 2010).
Hutzel and Russell (2007) pose the question for art educators, “What if by teaching you the skills to make art, we could also be teaching them the skills to make wise behavioral decisions?” (p. 6). Research has shown that arts education explicitly teaches social skills tied to behavioral decisions. An important part of arts learning includes group reflection and peer critiquing (Arts Education Partnership, 2004). It is through the critique process that students learn to critically examine images, give feedback, and receive criticism. Unlike subjects such as math, where looking at your neighbor’s paper might be considered copying, students in art are encouraged and expected to look at each other’s work, reference (not copy) visual images, and learn from each other (Eisner, 2002). The classroom norms of art education positively support practice in cooperation, autonomy, and community (Eisner, 2002). Studies have shown that through visual arts and critique students learn how to relate to each other in positive ways (Mason et al., 2004).

**Art Education and Cognitive Development**

Educators and researchers in art education have contended that arts have the ability to develop higher levels of thinking (Craft, 2005; Davis & Gardner, 1992; Dewey, 1934; Efland, 2002; Eisner 2002; Gardner, 1999; Jensen, 2001). In the visual arts, the construction of knowledge lies in the process or research, interaction with materials, artmaking, and expression (Dewey, 1934). Dewey’s writings on educational theory and the arts are also based on the same principles as constructivism. Dewey argues that creating genuine artwork “demands more intelligence than does most of the so-called thinking that goes on among those who pride themselves on being intellectuals” (p. 47). Unfortunately, many educators falsely assume that cognition development is most relevant for language arts and mathematics (Efland, 2002). Instead, art education can have profound impact and significance for all students regardless of
disability (Gerber & Guay, 2006). According to Gerber & Guay, experts in art education, art therapy and special education have researched and written about the learning potential inherent in art experience, describing increases in cognitive, affective social, and psychomotor development.

Publications by Gardner (1999), Eisner (2002), Efland (2002), and Jensen (2001) have more clearly discussed the link between studying arts and the development of cognitive skills. According to Eisner (2002), a quality arts education program is capable of teaching the following skills: attention to relationships, flexible purposing, shaping form to create expressive content, and learning to frame the world from an aesthetic perspective. Efland (2002) describes the ability of the arts to develop cognitive flexibility, which is the ability of “learners to use their knowledge in relevant ways in real world situations” (p. 82). However, the development of an increasing complexity of cognitive skills is not a passive type of learning that exists through completion of simple and mindless crafts. Eisner emphasizes the dual importance of pedagogy and curriculum in developing cognitive skills. According to Eisner (2002), “It falls to those of us in education to try and design the situations in which children’s efforts become increasingly more sophisticated, sensitive, imaginative, and skilled” (p. xiv). It is Eisner’s belief in the artistic activity as a genuine form of inquiry that ties art creation to constructivism.

**Postmodern Approaches to Art Education**

Postmodernism relies on a constructivist point of view (Freedman, 2003; Walker, 2001). It recognizes that artists make their own meaning of the world around them, choose how to represent their reality, and when examining art, viewers may interpret a third reality. Advocates of postmodernism agree that there is no absolute truth as defined in modernism, rationalism, and
behaviorism and instead argue for forms of knowledge characterized by multiple perspectives and cultural diversity (Popovich, 2006).

Postmodern artists embrace concepts formerly shunned by modernists such as collaboration, appropriation, simulation, hybridization, mixing of media, layering, and recontextualization (Barrett, 2006/2007). Postmodernism has also embraced fields of art that were often thought of as less than fine arts, such as visual culture, craft, outsider art, arte brute, folk art, popular culture, comics, and many more. Rolling (2008) commented on this new world where not just the majority socio-culture groups’ values are heralded, but rather

we are said to be in an era when no one paradigm of thought and action is able to dominate, where oppositional paradigms have reached an equivalence that cause them to grate upon one another like great tectonic plates, wearing each other down into localized narratives and constantly rearranging fragments of meaning. (p. 5)

Postmodern approaches to art education embrace the complex and subtle nature of our world, multiple perspectives, and varying forms of visual aesthetics (Efland et al., 1996; Freedman, 2003). Freedman argues that there are five postmodern concepts that can be addressed as part of art education: 1) art as cultural production, 2) temporal and spatial flux, 3) democratization and a concern for otherness, 4) acceptance of conceptual conflict, and 5) multiple readings. Guay (2006) described how postmodern approaches can help develop student interest and skills:

Contemporary art education looks upon student art making processes as a means for students stories to be told, communities celebrated, ideas revealed, values considered and concerns communicated . . . Their art has function and meaning for their world . . art objectives, well chosen, enhance the student’s future, direct attention toward what is worth knowing and develop skills worth having. (in Gerber & Guay, 2006, p. 11)

Postmodern approaches to art education can include practices of visual thinking, visual culture, multiculturalism, social justice, critical pedagogy, and contemporary art practice. Postmodern approaches to artmaking may focus on the exploration and expression of “big ideas”
(McTighe & Wiggins, 1998), reflecting a constructivist approach (Walker, 2001). The postmodern approach to art education, which relies heavily on making meaning through understanding of context, “represents a higher level of thinking than students achieve when instructed in only studio techniques and processes” (Freedman, 2003, p. 54). Although the content may vary in many postmodern art education classrooms, teachers who embrace these approaches aim to help students increase the breadth and depth of knowledge while also developing complex schemas that lead to higher orders of thinking.

**Definition of Terms**

The following definitions will be used throughout this study:

**Art concepts**: Art concepts refer to abstract ideas such as artistic styles, approaches and philosophies. Art concepts tend to be measured in terms of understanding and application rather than a specific skill set. Examples of art concepts can be broad philosophical approaches to art education such as visual culture or social justice or more specific concepts such as symbols or representational identity.

**Art education**: Art education focuses on the development of art skills, art concepts, and knowledge of current and historical artists across many cultures. In art education, student work and process are examined for assessment of learning (Andrus, 2006).

**Art skills**: Art skills refer to the ability to apply and manipulate observational rendering or the elements and principles of design through different art mediums. Art skills have been shown to develop in stages (Lowenfield, 1934), but without proper instruction, development of art skills often stops in the late elementary/junior high years.

**Art therapy**: Art therapy’s primary purpose is therapeutic. Clients use the process and materials to release tension, communicate feelings they may not be able to verbalize, and work through
personal issues. Art products are examined for meaning and used as part of treatment. Rarely is art evaluated in terms of art skills and concepts explored (Andrus, 2006). Rubin (1982) notes that art therapy “must involve both art and therapy” (p. 57).

**Comorbidity:** Comorbidity in an educational setting refers to the diagnosis of more than one disability for a student. Students may have two or more disabilities listed, although the disabilities are usually given weight and referred to as a primary or secondary disability.

**Culinary arts:** Culinary arts refer to hands-on classes at the high-school level in which the students have opportunities to cook with ingredients using kitchen appliances. Culinary arts classes at the high-school level are a combination of learning about food science, health concerns, cultural diversity, and hands-on lab experiences.

**High-school level:** High-school level is defined as grades 9-12. Because students who have disabilities are guaranteed access to public education through the age of 21, high-school level may include a broad range of students with ages from 14 to 21.

**Prevalence:** Prevalence refers to the rate at which a disability occurs in a specific educational setting.

**Social competency:** Social competency is often described as the ability to build and maintain successful relationships with other students or peers and adults. Social competency refers to a student’s ability to make judgments about social situations, knowledge of appropriate behaviors, ability to act out these behaviors, and ability to inhibit negative social behaviors. Socially competent students are accepted by their peers and adults as acting correctly in a variety of situations. A lack of social competency is seen as a major characteristic of students with ED (Wagner et al., 2005).
Social interactions: Special education literature has identified 15 areas of social skills that students should develop and apply correctly to be socially competent. For this research, social interactions will be examined. Data will be collected on three types of social interactions: positive peer-peer interactions, positive peer-instructor interactions, and engagement in classroom activities.

Students with emotional disabilities (ED): There is inconsistency in the term used to classify students with ED. Some texts use the term EBD (referring to both emotional and behavioral disorders), while others use the term ED (referring to emotional disabilities or emotional disturbance). The term ED will be used for this research, as recent texts and federal definitions use the term ED. The current federal definition of students with ED described in IDEA (2004) states students must exhibit one of the following five criteria:

1. An inability to learn that cannot be explained by intellectual, sensory or health factors
2. An inability to build or maintain satisfactory interpersonal relationships with peers and teachers
3. The expression of inappropriate behavior or feelings under normal circumstances
4. A general pervasive mood of unhappiness or depression
5. A tendency to develop symptoms or fears associated with school or personal problems (Cook et al., 2008, p.131)

Methodology

The methodology used was an in-depth descriptive case study that employed a mixed methods approach. Qualitative data (through interviews, observations, and artwork) and quantitative data (through observations, art rubric scores, arts participation, GPA, class rank, and graduation rates) were collected through two parts. Part one of the research was a quasi-experimental study that followed two groups of students with ED, one intervention group and one comparison group, over the course of 14 to 16 weeks, or one semester. This research
occurred at one school site during the fall of 2015 and a second school during the fall of 2016, due to issues of low prevalence. The two public high schools of similar size and student populations acted as the sites for the research. They both serve students in southwest suburban Chicago and are within 20 miles of each other. The intervention group included three students with ED in inclusive high school visual art classes with a postmodern approach. The comparison group included one student with ED in inclusive high school culinary arts classes. The culinary arts class was chosen as a comparison sample class due to the hands-on project-based studio environment, which is similar to visual arts education. The second phase of the study consisted of the collection and analysis of historical data to compare GPA, graduation rates, and attendance for students with ED who have taken art and those who have not. Each school provided transcripts from the past five years from which the data was collected.

This study was limited by five factors: access to appropriate school sites, obtainment of consent to participate, self-reporting by the teacher and student participants, prevalence of disability, and the amount of data available. Due to the limitations, especially concerning the number of students available to participate, multiple sets of data were collected so triangulation could occur. Throughout the research, seven sets of data were collected: teacher interviews, student interviews, artwork, behavioral frequencies, GPA, class rank, and graduation rates. The data was analyzed using coding for the interviews, rubrics and benchmarks for the artwork, and statistical analysis for the behavioral frequencies, GPA, class rank, and graduation rates. Reliability was determined through training and the use of multiple observers and raters of artwork. Validity was established through member checking and the triangulation of data.
**Organization of the Study**

This study is organized into six chapters. This first chapter provides the contextual information and foundation for the significance of the study. It also includes the problem statement, research questions, definitions key terms, and the conceptual framework used to complete the study. The second chapter contains a review of the literature related to the problem and literature that supports the methodological approaches used in the study. Historical and current literature were reviewed from the fields of art education, special education, art therapy, and psychology. The third chapter presents the two pilot studies and discusses the methodology for the research study. The pilot studies were instrumental in developing interview questions and a benchmark system to collect and analyze data for the dissertation research. The fourth chapter offers analysis of data in relation to social interaction development and general academic achievement. The fifth chapter presents data related to art learning collected during the study. Finally, the sixth chapter discusses implications and recommendations to art educators and suggestions for future research.
CHAPTER 2
LITERATURE REVIEW

The purpose of this literature review is to examine how students with ED may benefit from taking inclusive visual arts classes. Research has shown that a quality visual arts education is important because it teaches students skills and ways of looking at the world they do not receive in other academic subjects (Efland, 2002; Eisner, 2002; Jensen, 2001; Seigesmund, 1998; Walker, 2001). In 2010, the National Arts Education Association (NAEA) along with 22 other national organizations, including the VSA (formerly known as Very Special Arts), endorsed the paper *Arts Education: Creating Students’ Success in School Work and Life*, which states that to succeed in today's economy of ideas, students must masterfully use words, images, sounds, and movement to communicate. The arts provide the skills and knowledge students need to develop the creativity and determination necessary for success in today's global information age. (VSA, 2010, p. 2)

The following literature review analyzes research in the areas of learning theory, art education, special education, and social skills as well as the intersection among these fields. The first section summarizes historical and contemporary approaches to special education and art as influenced by learning theory. The second section of the literature review examines characteristics of students with ED in terms of social skill development. The third section presents an overview of critical components of contemporary art education, including development of art skills, conceptual thinking, and social skills. This section also presents literature that examines the correlation between participation in arts and general academic achievement. The fourth section reviews studies conducted with students with ED in areas of
visual arts education. Finally, conclusions from the literature and implications for the development of the methodology for this study will be discussed.

Research that focuses on art education and students with ED is limited. For the purpose of the literature review, studies that included groups of students with labels, such as ADHD, that would be classified as ED or described as having behavioral difficulties have been included in some parts of the literature review. In the field of art therapy, many studies have been conducted that connect artmaking with changes in behavior for students with ED. However, these studies have, for the most part, not been included in this literature review because they represent a psychological intervention rather than educational one and are not generalizable to art education.

**Learning Theory and Its Application in the Fields of Special and Art Education**

The following sections examine learning theory and its current applications in fields relevant to this study. The first section describes behavioral learning approaches as the framework for deficit-based interventions in special education. The second section describes applications of behavioral learning theory in special education. The third section outlines cognitive learning theory as a more progressive approach to deficit-based learning. The fourth section presents constructivism and socio-cultural learning theory. The final section describes applications of constructivism in art education.

**Behaviorism and Its Impact in Special Education**

Educational approaches that incorporated behavioral learning theory emerged in the 1960s and 1970s and remain a predominant method for many approaches to remediating deficits in students with special needs. The roots of behavioral theory can be found in the work of Pavlov and Skinner (Maag, 2014). In Skinner’s (1953) view, individuals are more likely to respond to stimuli based on their prior conditioned responses. Skinner believed that the most effective
instructional practices are based on behavioral theory (Maag, 2014) and that the causes of learning are environmental events rather than internal events like thoughts, beliefs, and feelings. Behavioral theorists view learning as a change in the rate, frequency of occurrence, or form of behavioral response (Schunk, 2008) and suggest that all living things share similar principles of learning; therefore, results from research conducted with rats and monkeys can be applied to children (Jones, 1996).

Behavioral learning theories are based on the underlying epistemological model known as logical positivism (Maag, 2014). Most older learning theories are behavioral and arose out of the desire to make psychology an objective observable science (Schunk, 2008). Behavioral theories emphasize the forming of associations between stimuli and responses through the selective reinforcement of correct responses (Schunk, 2008). Behavioral theories are best suited to explain simpler forms of behavior and learning such as those that involve associations and memorization of facts. Researchers who use behavioral theories stress the role of the environment, how stimuli are arranged and presented, and how responses are reinforced (Baer, Wolf, & Risley, 1968; Skinner, 1938). According to Schunk, the reinforcement of consequences make the response more likely to occur, whereas punishing or ignoring an incorrect response makes it less so.

Conditioning theories are a type of behavioral theory. Skinner’s operant conditioning theory is the best known conditioning theory. Behavioral therapy and modification are closely aligned with respondent operational conditioning. Behavior modification refers to the systematic application of behavioral learning principles to facilitate adaptive behavior. In the 1970s and 80s most research related to changing behavior for students with disabilities focused on the operant learning principle (Schunk, 2008). The three most researched techniques for increasing positive
behavior were behavior contracting, token economies, and group-oriented contingencies (Maag, 2014). More than 90% of teachers of students with ED use some form of a token economy system that relies on extrinsic motivation to improve behaviors (Rosenberg et al., 2010). Research has found that the use of external reinforcers, such as rewards, can improve not only behavioral but also academic achievement (Cameron & Pierce, 1994).

**Applications of Behavioral Learning Theory in Special Education**

Behavioral psychologists view inappropriate behaviors as “learned behavior that can be changed by the use of applied behavioral analysis” (Jones, 1996, p. 95). Applied behavioral analysis (ABA) is an operant conditioning approach that is the predominant method for working with students with autism and other students with social and behavioral difficulties. ABA is considered the gold standard for treatment in North America (McPhilemy & Dillenburger, 2013). The goal of ABA is to improve socially significant behaviors and/or increase communication skills and learning while also demonstrating that the interventions employed are responsible for the behavior. Behavior analysts focus on the environment, in particular antecedents and consequences, and are interested in making significant changes in student behavior (Weiss, DelPizzo-Cheng, LaRue, & Sloman, 2009). “Significant changes are those that make a notable and real impact on the individual’s quality of life and are acknowledged and embraced by their caregivers, family and friends” (Wiess et al., p. 431). Today ABA therapies often include the use of reinforcement procedures, naturalistic teaching strategies, and technologies that enhance generalization, maintenance, spontaneity, fluency, responsibility, and independence (Wiess et al., 2009). Some people are critical of ABA, as they feel it seeks to correct a person with autism and that the desired behaviors are driven by societal expectations.
Direct instruction (DI) is a second approach to learning derived from behaviorist theory that is commonly used with students with disabilities (Ledford, Lane, Elam, & Wolery, 2012; Trent, Artiles, & Englert, 1998). In DI models, teachers and students have constant interaction. Teachers deliver prompts and reinforcement for specific behaviors in an isolated setting away from peers. Like Skinner’s (1938) theory, DI relies upon the use of reinforcement of the correct answer. According to Ledford et al. (2012), DI is widely researched and commonly recommended for teaching students with disabilities. Additionally, DI has been shown to be the most effective reading instruction method for students with learning disabilities, with significant and large effect sizes compared to other reading instructional methods (Ledford et al.; Swanson & Hoskyn, 1998). Part of the reason strategies like DI are so effective is that they explicitly teach specific skill sets (Klingner & Vaughn, 2000). Like Skinner’s (1938) theory, DI relies on reinforcement of the correct answer. Chali (2000) found that teacher-centered approaches like DI are more effective than a student-centered approach for academics in elementary schools, especially for students with low socioeconomic status.

Research showing results about the effectiveness of DI compared to other methods of focused literacy instruction are mixed. Many studies have supported DI as an effective tool, especially for low-income students (Chali, 2000; Mathews, 2003; Swanson & Hoskyn, 1998). Ledford et al.’s (2012) study that examined the use of prompting DI in small group settings found that students with disabilities were not only able to acquire skills but were also able to generalize those skills at high rates of a mean of 89.5%. However, it should be noted that tests that analyze students’ reading abilities rarely measure higher level thinking skills. Standardized multiple-choice tests focus on the ability to decode, understand, and recall information. As DI mainly addresses the teaching of these skills, students would perform well on standardized tests
that measure these abilities. Other studies suggest that DI is not as effective as some would like to believe. When examining the effects of DI, the U.S. Department of Education (2005) found no significant difference in oral language, print knowledge, and cognition for students who received DI instruction. Other researchers (Vaughn & Schumm, 1996; Watson, 2001) have found that the use of highly prescriptive or teacher-directed forms of learning run the risk of promoting passive attitudes in students with learning disabilities.

One of the biggest problems in special education is teaching students to maintain and generalize skills. ABA has been extremely successful in changing behaviors for students with autism, and studies have shown skills are being maintained and generalized (Weiss, DelPizzo-Cheng, LaRue, & Sloman, 2009). This may be because ABA and DI do not usually address academic or higher level cognitive skills. Additionally, these approaches cover each skill individually; they do not teach students how to learn appropriate skills but rather teach a set of rules for a particular skill. As researchers have noted, models of behaviorism cannot adequately explain the acquisition of higher level thinking skills or those that require a greater depth of processing such as abstract conceptualization (Efland, 2002; Ertmer & Newby, 1993). So while ABA and DI have proven to be an effective teaching model based on behaviorist theories, further research using these models in subject areas such as art where objectives aim to address higher level thinking skills may be inappropriate. Behavioral theories and teaching methods based on theories that fail to teach or build understanding of information in a way that is meaningful are problematic. By focusing on skill acquisition, teachers may neglect to concurrently teach skills such as analysis, application, evaluation, and creation. Yet researchers have found that teachers must explicitly teach students with disabilities higher cognitive skills and strategies (Michaels & O’Connor, 1990).
Cognitive Learning Theory

The transition from the behavioral model to the cognitive model represents a methodological change rather than a theoretical shift because both approaches rely on a deficit approach. While behavioral models stress the acquisition of rules, cognitive models stress the acquisition of information. Cognitive learning theorists view the mind as a repository of such things as schemata, beliefs, values, discrimination, and expectations (Ertmer & Newby, 1993; Schunk, 2008). Cognitive theories appear to be more appropriate for explaining complex forms of learning such as solving word problems, drawing inferences from text, and writing essays (Schunk, 2008). Cognitive theories suggest that transfer or generalization occurs when learners understand how to apply knowledge in different settings. Cognitive learning theories acknowledge the role of the environment in learning but also stress that the way learners process information is very important. Therefore, according to cognitive learning theory, teachers need to consider how instruction affects students’ thinking.

The process of cognitive skill modeling is usually incorporated as part of the standard lesson structure in the K-12 setting. It is the method most commonly used for introducing new skills in classrooms today. In a cognitive lesson structure, the teacher models the appropriate skill while students observe, then the teacher checks for understanding during guided practice, and finally students practice the skill independently. Unlike behaviorism, cognitive learning theories emphasize making knowledge meaningful and taking into account learners’ perceptions of themselves and the environment. However, Schunk (2008) claims that researchers have felt that cognitive learning theory has failed to capture the complexity of human learning.
Constructivism and Socio-Cultural Learning Theory

Social cognitive theory is one subset of cognitive learning theory that is centered on the belief that human learning occurs in a social environment. In social cognition theory, learning and performances are distinct processes. A central part of social cognition theory is that students or people learn through observing others about the usefulness and appropriateness of behaviors (Schnuck, 2008). According to theorists of social cognition, students observe the performance of a behavior and the consequences of that behavior; then they remember the sequence of events and use this information to guide subsequent behaviors (Bower & Hilgard, 1981). In other words, people do not learn new behaviors solely by trial and error. Instead, social cognition theorists believe that a significant portion of learning occurs through the replication of what we see others doing (Bandura, 1977). Evidence of this theory can be found in the way young children are focused on mimicking parents or older siblings in their play, actions, and dress. As children become older, this mimicry becomes more subtle but nonetheless is an essential part of learning.

Another essential part of social cognition theory is Bandura’s (1977) theory of triadic reciprocation. In Bandura’s theory a direct correlation exists between a person’s perceived self-efficacy and behavioral change (as cited in Schunk, 2008). Research has shown that many students with learning disabilities have low self-efficacy, and this may in turn have a greater effect on how teachers perceive a student’s capability rather than her or his actual performance. Daniels, Lauder, and Porter (2009) argued that “through mastering cultural tools, learned through compensatory techniques, children with disabilities should be able to overcome both primary and secondary defects” (p. 13). As Schnuck (2008) notes, social cognitive theory incorporates modeling, self-efficacy, and self-regulation.
The learning theories of Vygotsky (1978) and Piaget (1953) have had major influences on constructivist theory. Strictly speaking constructivism is not a learning theory, but a philosophical explanation of the nature of learning (Schunk, 2008). Unlike behaviorism and cognitivism where rules and knowledge are acquired, in constructivist approaches individuals construct knowledge. Because individuals can construct their understanding of the world in many different ways, no one theory is said to be true.

Most constructivist theorists agree that humans construct knowledge through a sequential development of their cognitive abilities as they attempt to make sense of their experiences and interact with the world and peers around them (Bruner, 1990; Vygotsky, 1978). This scaffolding moves through increasingly complex ways of thinking from recognition to recall, analysis, reflection, application, creation, understanding, and evaluation. In recent years constructivism has been applied to K-12 public schools approaches for teaching and learning (although it can be seen in older models of Reggio Emilio’s and Montessori’s approaches). In constructivist classrooms, teachers structure situations so learners become actively involved in content though the manipulation of materials and social interaction.

“Social-cultural theory, also known as social constructivism, describes learning as more holistic and relative, emphasizing the strengths and knowledge students bring to the classroom while enabling students to make meaning of the social and cultural worlds they inhabit” (Efland, Freedman & Stuhr, 1996; Greene, 2005; Gross & Gross, 2016 p. 37; Trent, Artiles, & Englert, 1998). Vygotsky’s (1978) theory of socio-cultural development recognizes that social interactions are critical and knowledge is constructed among two or more people. Furthermore, Vygotsky argues that what students are capable of learning, their Zone of Proximal Development (ZPD), expands “in collaboration with more capable peers” (p. 89). A social constructivist would
argue that children create understanding through observation and social interactions and expectations as well as their creation of knowledge through the experience of play (Bruner, 1990).

Research has found evidence supporting the use of capability approaches such as constructivism or multiple intelligences when working with students with disabilities (Armstrong, 2008; Farrell, 2012; Trent, Artiles, & Englert, 1998). Watson (2001), through case study research, found that using constructivist approaches can help students with learning disabilities develop autonomy. Students are more likely to interact with physical materials and address multiple modalities and intelligences when using constructivist approaches.

**Constructivism in Art Education**

Greene (2005) argues that constructivist thought in art education can lead to “look[ing] for keys to unknown doors.” (Chapter Seven, para. 41). In art education, constructivist approaches and implications remain mainly theoretical, with most researchers arguing for the need to approach curriculum and pedagogical development from a constructivist framework (Greene, 2005; May, 2011; Simpson, 2005). However, several art educators have written about the effects of shifting curriculum toward a constructivist approach and the impact on student learning (Hesser, 2009; Prater, 2001).

Based on the theories of Dewey (1934), Froebel (1912), and Vygotsky (1978), Simpson (2005) argued that art education provides opportunities for students to use constructivist approaches to develop linkages of ideas through active involvement. Simpson asserted that constructivism emphasizes students’ learning experiences. Simpson stated that “encouraging students to become involved in the reading of paintings” helps them develop deeper level understandings and personal identification with the artwork (p. 53).
May (2011) views the teacher as a facilitator of learning rather than the source of knowledge. May examines the potential for constructivist approaches to knowledge building using a rhizomatic approach as described by Deleuze and Guittari (1987). In this model of knowledge building, the teacher is no longer the central focus nor is the curriculum centered on one central idea. Rather the teacher, as the curriculum developer, identifies and uses “neighboring ideas” (May, 2011, p. 36). May points out that art educators have been arguing for some time that curricula should be reflexive and respond to the needs of contemporary society. In reflecting on her own experiences teaching an online studio course, May found that “knowledge and subjectivity emerged in this circular process of critical inquiry” (p. 37). May argues that art educators have the ability to use constructivist approaches to encourage critical inquiry among participants.

Through a qualitative case study focused on giving students control of their learning, Hesser (2009) explored the applications of constructivist pedagogy in a secondary art room. In discussing the reasons for this approach, Hesser noted that constructivist classrooms become less common as students age, yet they are shown to be the richest learning environment (Fosnot, 2006). Hesser also pointed out that critics of constructivist approaches worry that learning outcomes are questionable and often lead to the abandonment of standards. Hesser implemented a collaborative student-driven unit and found that although many students struggled with the unit, stating that it was hard to work in groups and they felt a lack of direction, the students were able to produce high-quality pieces that were research based. Additionally, he stated that this sort of approach required greater flexibility and empathy but was worth it. As a result of this research, Hesser stated that further implementation of the approach would be worthwhile as part of a secondary classroom.
Students with ED

Characteristics and Interventions

Because it is difficult to differentiate between emotional and behavioral disorders, in this research the term emotional disabilities (ED) is used as an overarching classification and includes students identified as emotionally disturbed, socially maladjusted, psychologically disordered, emotionally impaired, behaviorally impaired, behavior disordered, and seriously emotionally disturbed (Jones, 1996; Jones, Dohrn, & Dunn, 2004; Reynolds & Fletcher-Janzen, 2007). No universal definition of emotional disturbance exists, but the term is used to refer to behavior that is significantly or extremely different than normative behaviors of a particular age (Jones, 1992). To be identified as ED and receive an IEP, the Individuals with Disabilities Education Act of 2004 states students must exhibit one of five criteria listed in the definition (Cook et al., 2008, p.131). Once a student is classified as ED, it is important to provide a more specific psychiatric diagnosis to facilitate effective treatment (Reynolds & Fletcher-Janzen, 2007). Estimates of the proportion of the school-aged population likely to qualify as having EBD are as high as 20%, but the actual proportion of students served hovers around one to two percent (Jones et al., 2004; Walker, Ramsey, & Gresham, 2004). This suggests that the disability of ED is severely under-identified in school-aged children. Teachers report they spend half of their classroom time dealing with behavioral issues, and administrators report they can spend up to 25% of their time working with a single student with ED (Jones et al., 2004).

Although students with ED come from every racial, ethnic and socio-economic group, researchers have found a number of common variables within students with this classification. Males are more likely than female students to be identified as having ED during K-12 education (Reynolds & Fletcher-Janzen, 2007). Black students are more likely to be identified than White
students, often due to different behavioral norms from different cultural groups (Reynolds & Fletcher-Janzen, 2007). Students from families with low socioeconomic status, low parental education levels, or who are victims of sexual and/or physical abuse are also more likely to receive a disability classification of ED (Brigham & Hott, 2011; Reynolds & Fletcher-Janzen, 2007). Nationally, 70% of students classified as ED live in households with an annual income of less than $25,000 (Jones et al., 2004). Students with mild-moderate ED often have comorbidities such as learning disorders and IQs that fall in the “dull normal range” (Jones, 1992, p. 70). This population is often referred to as “defeated learners,” meaning they have developed a sense of inferiority and failure based on a combination of extensive school failures and family situations in which they do not receive reinforcement for their efforts (Jones et al., 2004, p. 40). Each student is an individual with unique characteristics that fall outside of predetermined labels and should be treated as such. Most people with behavior disorders have difficulties in the metacognitive operations to direct the learning process and to monitor and control behavior, significantly interfering with social competency (Jones, 1992).

According to Jones (1996), “The most widely used classification system for learners identified as behaviorally disordered is the Diagnostic and Statistical Manual of Mental Disorders” (p. 104). Quay (1986) found four patterns of deviant behavior in students with ED: conduct disorder, anxiety-withdrawal, immaturity, and socialized aggression. Additionally, students with ED are often classified as having externalizing or internalizing behaviors. Externalizing behaviors tend to be more quickly identified in schools due to their disruptive nature (Jones, 1996). Conduct disorders and socialized aggression in children can both be classified as externalizing disorders (Jones, 1996). Children who have conduct disorders defy authority, get into fights, are easily distractible, are unable to persist at tasks, and often disrupt
classes (Jones, 1996). Children with socialized aggression share many of the same characteristics, but also are marked by truancy, theft, and a feeling of pride in belonging to a delinquent subculture (Heward, 2003). In contrast students with internalizing disorders are generally not disruptive or cause classroom management problems, which includes the classifications of anxiety-withdrawal and immaturity. The anxiety-withdrawal classification includes students who are shy, reclusive, sensitive, easily depressed, and/or feel anxious (Jones, 1996). Students who may be classified as anxiety-withdrawal often have above average IQs and come from families of higher socio-economic backgrounds (Jones, 1996). The immaturity classification refers to children who are inattentive, sluggish, uninterested, lazy, tend to daydream, and show a preference for younger playmates (Jones, 1996). A later system of classification further delineated the categories into six rather than four by including psychotic behavior and motor excess (Quay & Peterson, 1987). According to Brigham and Hott (2011), “As our knowledge base evolves and educators respond to continued changes in society, the understanding of EBD as well as its classifications and interventions will need to change as well” (p. 153).

Prior to the late 1700s, the causes of emotional disturbances were usually attributed to magic or possession by a spirit, and causes were treated using witch doctors, priests, and medicine men (Jones, 1996; Peterson, 1991). During the 1800s the dominant theme in treating mentally ill or behaviorally challenged persons was “gaining ascendancy over the individual or rendering them subservient and obedient by almost any means” (Jones, 1996, p. 90). The treatment of children was quite severe (Brigham & Hott, 2011). Following the establishment of mental hospitals for the mentally ill due to the advocacy of Dorothea Dix, the first schools for mischievous and disruptive children were established in the United States in 1870 (Jones, 1996).
One of the major historical problems for this population has been their educational placement, as institutions devoted to individuals with cognitive impairments were not appropriate nor were prisons (Jones, 1996). By the 1960s behavioral psychology and behavior modification became the predominant methods for treatment of persons with behavior disorders (Jones, 1996; Reynolds & Fletcher-Janzen, 2007).

Cognitive behavior modification approaches have been applied to a wide variety of behavioral issues, including externalizing and internalizing disorders. They appear to have the greatest effect in areas such as anxiety disorders and depression, but they have also been used to teach appropriate behaviors to students with EBD (Brigham & Hott, 2011). Although the biological approach emerged in the 19th century, as scientists in these fields develop and refine their understanding of neurobiology related to human behavior, the implications for the field of ED are often quite noticeable. Some conditions related to students with ED once considered an indicator of emotional imbalance (e.g., epilepsy) are now properly understood as biophysical disorders that can be managed by medication. Medical intervention is increasingly viewed as important in conditions such as attention deficit/hyperactivity disorder, depression, or anxiety disorders (Pennington, 2002). Often medications are provided in conjunction with behavioral or cognitive–behavioral educational approaches. (Brigham & Hott, 2011).

Social Skills Development

Students with or at risk for ED can be characterized as having severe deficits in social competence. Teachers and parents rated 48% of students identified as ED as having social skills at or below the 16th percentile (Cook et al., 2008, p. 131). Greshem, Cook, Crews, and Kern (2004) state that one of the primary reasons students are referred for special education evaluation, and subsequently classified as ED, is based on their social competence deficiencies.
Through an analysis of literature, Patterson et al. (2006) concluded these deficits have been shown to be the result of cultural differences, unclear or inconsistent expectations in home or at school, developmental issues, lack of motivation, or lack of opportunity to exhibit appropriate skills.

Social skills are defined as socially acceptable learned behaviors that allow a student to effectively interact with others and to avoid or inhibit socially unacceptable behaviors (Gresham et al., 2004). Examples of social skills include ignoring distractions, asking for help, introducing yourself, listening, and negotiating (Gresham et al., 2004). Merrell and Gimpel (1998) indicated that there have been 15 definitions of what makes up social skills based on the diverse definitions of the construct of social skill, leading to a wide array in the nature and types of social skill interventions used to remediate social skill deficits of children and youth. Social skills training (SST) is a type of intervention routinely implemented with students identified as ED as a means of improving their social competence (Cook et al, 2008). Rather than relying on behavior management to acknowledge good behavior or punish bad behavior, SST programs have been developed to teach appropriate skills.

While SST programs were shown to be effective in the acquisition of skills, Gresham et al. (2004) noted that the problem with many SSTs was a failure to teach students to perform these skills correctly and appropriately. Instead Gresham et al. argued that students need “reinforcement and practice” with social skills to gain social competence (p. 43). Additional literature analysis by Maag (2006) indicated that SST should be “implemented over a period of six-nine months in order to optimize maintenance and generalizability of these skills” (p. 13). According to Patterson et al. (2006), to help students develop social competence, educators should integrate skills into the daily curriculum and provide students with opportunities to
demonstrate those skills in various settings. For many students with ED, their opportunity to make decisions in classrooms can be extremely limited. Teachers often feel they cannot handle students with ED and lack the expertise and skills to address extreme behaviors (Rosenberg et al., 2010). Rosenberg et al. stated that “approximately one-third of all students with ED spend more than 60% of their time outside general education classes” (p. 187). Because many students with ED have limited ability to develop positive relationships and work collaboratively with others, teachers often respond by developing classroom cultures in which students with ED have limited contact with each other and the other students (Jones et al., 2004). Kern, Bambara and Fogt (2002) noted that behavior problems are met with an increasingly rigid system of behavior management. By placing students in these restrictive environments, autonomy is limited and adults make choices for the students (Harper, 2007).

In examining the literature, many researchers argued there is little opportunity for students with ED to practice and develop choice-making skills in their regular classroom. According to Kohn (2000), “The way a child learns how to make decisions is by making decisions, not by following directions” (p. 153). Researchers (Gresch, Hasselhorn, & Bogeholz, 2013; Levy Nahum et al., 2010) have found that explicitly teaching students decision-making strategies and implementing project-based learning can have significant effects on students’ decision-making capabilities. Teachers who supported students’ autonomy reported students with higher self-esteem who were more oriented toward mastering content (Harper, 2007). According to Jolivette, Wenby, Canale and Massey (2001), classroom learning environments of students with ED generally do not promote positive environments or success and instead are teacher centered with students being overly dependent on the teacher. Making choices can affect behavior in a positive manner because it takes into account student preferences, it increases the
predictability of the student environment, and it allows students to engage in positive interactions with teachers (Jolivette et al., 2001; Munk & Repp, 1994). Kern et al. (2002) also found that simple curricular changes to whole classroom curricula, including choice making opportunities and incorporating student interest, positively influenced student performance. This research has been further supported by Skerbetz and Kostewicz’s (2013) findings that demonstrated incorporating assignment choice for students with ED who are in mainstreamed settings increased behavioral and academic outcomes.

**Critical Components of Contemporary Art Learning**

**Development of Art Skills**

Modern theories of drawing development were based on the foundational stage theories of Luquet (1927/2001) and Piaget (1953). Although Luquet’s stage theory of drawing development is one of the oldest theories of artistic development and has been referenced by researchers in the field, his work was not translated to English until 2001 (Jolley, 2010), which has limited the direct influence he has had on many practicing art educators. However, Piaget was heavily influenced by Luquet, who incorporated stage theory into his own work (as cited in Jolley, 2010). The influence of Piaget’s theories of stage development can be seen in multiple theories of the development of art skills and concepts (Harris, 1963; Jolley, 2010; Kellogg & O’Dell, 1967; Lowenfeld, 1947). In theories of artistic development, unlike Piaget’s developmental stages, children do not jump from one skill or stage to the next, but instead changes are gradual and the lines between stages can be blurred.

Lowenfeld’s (1947) theory of artistic development was aligned with constructivist philosophies because he emphasized the importance of the artist’s relationship with the environment and the ability to use senses to provide contact with the environment. Lowenfeld
described artistic development as consistent in all children regardless of culture and claimed that
ingSTRUCTION has little influence on the developmental stages. Lowenfeld identified five natural
stages of artistic development that end at the age of fourteen, arguing that at this time students
are at an age when a “real interest in visual art can take place” (p. 41). The period of decision
described by Lowenfeld for 14- to 17-year-olds is defined by purposeful learning in art in which
students will only continue to develop artistic skills if they have the opportunity and desire to do
so. One of the critiques of Lowenfeld’s research is that like other artistic theories, there is an
assumption that pictorial realism is the end point of children’s graphic development (Jolley, 2010).

Several studies have shown that Lowenfeld’s (1947) theories remain applicable today
when examining drawing development in children from Western cultures. Alter-Muri (2002)
conducted a case study to compare drawings of European children to Lowenfeld’s stage theory.
Although the study included a small sample size (156 drawings and five countries), Alter-Muri
concluded that Lowenfeld’s stages theory may be applicable to European demographics. A
larger study that examined 346 drawings of second- and fourth-grade students in the United
States found congruence between Lowenfeld’s stage theory and the drawings the children
produced (Deaver, 2009).

Efland (2002) points out that both Lowenfeld (1947) and Piaget (1953) developed stage
theories, but it is important not to equate their theories as Lowenfeld’s took into account the
emotional aspects of development. Instead, Efland believes Arnheim’s (1969) views on
children’s artistic development are much more closely tied with Piaget, as they are both
cognitive processes. Arnheim defined cognition in *Visual Thinking* as “all means of mental
operations involved in the receiving, storing, and processing of information: sensory perception,
memory, thinking and learning” (p. 13). But Efland also criticized Arnheim for his aversion to using written explanations or discussions for understanding works of art, as it does not fit with a postmodern approach that recognizes context and individual making of meaning. Efland (2002) states, “The work and what it means are not wholly evident in the form nor can they be found in the organizing principles that guide visual perception” (p. 45).

Like Lowenfeld, Kellogg and O’Dell (1967) believed that all children move through distinct stages of drawing development with many similarities across cultures. Kellogg and O’Dell’s developmental drawing theory was based on a qualitative analysis of a collection of student created images from around the world. Kellogg and O’Dell’s drawing theory had more nuanced stages than Lowenfeld’s but covered a much shorter age range that includes six stages for 2- to 7-year-olds. Kellogg and O’Dell argued that children in all cultures use common symbols such as suns, mandalas, and rays along with the development and focus on the human form and images to support their argument. One limitation of the research and theory put forth by Kellogg and O’Dell is the lack of explanation of sampling and methodology, and this created opportunities for later researchers to argue against the universal theories described by Kellogg and O’Dell.

Universal theories of drawing development have been used to support the measure of intelligence through visual images created by children. Most notable are the Goodenough’s (1926) Draw-A-Man test and the Draw-A-Person (DAP) test developed by Naglieri (1988). Jolley (2010) commented that the updated Harris (1963) and DAP tests showed only modest correlations with the Wechsler Intelligence Scale for Children-Revised, varying between .40 and .64 (Harris) and .51 (DAP) and cannot be used as an accurate diagnostic tool for intelligence in most children. Further research by Cox and Cotgreave (1996) found that when comparing
drawings of children with mild to severe learning disabilities, they were developmentally similar to younger typically developing children. This would suggest that students with normal IQ levels but certain types of disability produce drawings that are not consistent with age level peers and that if they took the Harris or DAP test would be labeled with inaccurate IQ levels.

Critics of these theories and tests used to describe and measure children’s artistic development also argue that they are culturally insensitive (Efland, 2002; Jolley, 2010; Wilson & Wilson, 1979, 1981). Research by Paget (1932) and Cox (1993, 1998) indicate there is not a universal way of drawing the human figure. Wilson and Wilson (1981) found significant differences between American and Egyptian student drawings when comparing art skill development and the influence of culture. Jagoda (1981) concluded that in Papua New Guinea schooling can be influential in teaching students perspective drawing, describing qualitative differences between those children who did and did not attend school. Jolley (2010) noted that Western-educated children are asked to draw from life, whereas Chinese-educated children are taught through copying drawings, and there are marked differences in the quality of drawings between young children in these two cultures. Finally, media can have a huge influence on the style of children’s drawings, as seen in the exaggeration of eyes and use of heart-shape faces as a result of Manga in the Japanese culture (Jolley, 2010; Wilson & Wilson, 1999). Although there are many theories concerning stages of development of children’s drawings and several scales that have been used to evaluate drawings, no one theory can be said to be universally true or culturally relevant to all children.

Development of Conceptual Thinking Through Art

Efland (2002), Eisner (2002), and Gardner (1999) argued that art education is a highly cognitive process and can develop conceptual thinking skills. As art education has moved away
from a disciplined-based approach (DBA) and toward postmodern theories, the focus of what is being taught in classrooms has changed. “Big ideas” are one tool art educators can use to help students develop critical thinking by expanding artmaking beyond technical skills to conceptual concerns and engaging students in deeper levels of thinking (Walker, 2001). McTighe and Wiggins (1998) explained that enduring understandings refer to getting at the big ideas or important understandings that educators want students to retain after they have forgotten many of the details. For art educators, this means the art curriculum is often focused on the ability to “understand ‘big ideas’ about people, the world we live in, art, artists and the creation of arts” (Gerber & Guay, 2006, p. 9).

In highly structured subject areas, such as mathematics, concepts can be applied consistently across examples, and problems have only one correct solution (Short, 1998). In contrast, a constructivist viewpoint and discipline such as art education recognizes many correct answers. Yet research suggests that students must explicitly be taught skills such as interpretation for art learning to occur. Research by Wolf (1988) found that art students who did not receive specific instruction in looking at artwork were only able to interpret artwork in terms of likes and dislikes. Kyle (1990) found that through teaching students to analyze form, view sculpture, and develop appropriate vocabulary, they showed a significant increase in spatial visualization skills between pre-and posttests. Metcalf, Gervais, Dase, and Griseta (2005) described the ability of the arts to provoke thought and challenge preconceived notions as transforming for those who participate in artmaking and viewing. Siegesmund (1998) argued that through art, students become reasoning perceivers, increasing their knowledge of the world (as cited in Gerber & Guay, 2006, p. 12).
Art education also addresses development of cognitive and conceptual skills through the process of creating artwork. Burton, Horowitz, and Abeles (2000) found that certain cognitive skills such as elaboration, fluency, originality and the ability to take in multiple perspectives and layered relationships are activated by learning in the arts. Walker (2001) described the role of problem solving and conceptual skills in deciding what to paint: “How is the paint to be applied? How are the woman’s form and her hat to be portrayed?” (p. 49). These conceptual issues such as choice of color, form, and representation are intentional choices by artists. When describing the importance of editing in art creation, Eisner (2002) argued that although we naturally connect editing with writing, it occurs in all art forms, “It is through the process of editing that we pay attention to relationships, details and ‘making the work, work’” (p. 6). Winner et al. (2006) found that there are eight types of studio thinking that happen in the arts. Out of the eight dispositions described, the authors consider six to be “general habits of mind” that have “the potential to transfer to other areas of learning” (Winner et al., 2006, p. 1). These six dispositions are observing, envisioning, reflecting, expressing, exploring, and engaging and persisting. Although it is argued that these skills are used in many disciplines, the authors point out that “the transfer from arts to academic hypothesis remains just that-- a hypothesis to be tested” (Winner et al., 2006, p. 7).

Art Education and Academic Achievement

Several studies have shown a positive correlation between visual arts education and student performance in other subject areas. Tishman, MacGillivray and Palmer (2002) conducted a case study using modern art to train a group of 162 students, nine and ten years old, to look closely at works of art and reason about their visual understanding of the art. The results of the study showed that as children increased their ability to draw inferences about artwork,
those skills transferred to their reasoning about images in science class (Tishman et al., 2002). A second study, by Wilhelm (2002), used visual arts to help boys who were in special education become more sophisticated and less reluctant readers. The participants of the study were encouraged to use visual forms of expression to convey their comprehension of the reading assignment. After spending nine weeks on a course in visualization training, the students started to take a more active role in reading and began to interpret text rather than merely passively reading it.

Additional research has examined the correlation between participating in visual arts classes and standardized testing. Vaughn and Winner (2000) found that SAT scores tended to increase linearly; the more art classes students took, the higher the SAT score. Scores increased gradually with each year of arts in the zero to three-year range yet jumped dramatically for those students who studied four or more years. Notably, students who took four years of arts coursework outperformed their peers who had half a year or less of arts coursework by 58 points on the verbal portion and 38 points on the math portion of the SAT (Vaughn & Winner, 2000). The College Board reported similar results. Students who took studio, art appreciation, and art design scored an average of 47 points higher on math and 31 points higher on the verbal portion of the college entrance exam (Jensen, 2001). A fourth and more recent study by Catterall, Dumais, and Hampden-Thompson (2012) supports a strong association between arts involvement and general academic achievement. The researchers analyzed statistical data from several national data sets and found that student groups with high arts engagement in high school had significantly higher GPAs and graduation rates. However, it remains unknown if students scored higher on these academic measures due to taking art or if students who are high achievers
placed a higher value on arts education, and researchers have suggested that further inquiry into this relationship is necessary (Catterall et al., 2012; Jensen, 2001; Vaughn & Winner, 2001).

**Developing Social Skills Through Art**

SST can be implemented with a “published curriculum or by making appropriate modifications to present classroom practices that are anchored in various conceptual frameworks” (Patterson et al., 2006, p. 24). This is especially important when considering developing social skills as an aspect of art education. Jensen (2001) noted that fine arts programs are known for “fostering commitment to task and social skill development” (p. 63). As discussed earlier, art education often focuses on teaching students big ideas, examining the world around students, and developing subtle ways of thinking. Art education often does this through open-ended projects and pedagogical approaches that allow students greater physical and mental freedom in the classroom than might exist in other subjects (Gerber & Guay, 2006). Eisner (2002) explained that when students’ artwork is examined in social settings, instruction moves beyond visual qualities and includes social norms, models for behavior, and opportunities to converse and share one’s work with others. The art environment can give students opportunities for developing social skills, which is an especially important opportunity for students with ED, who are often placed in highly structured environments.

Opportunities for choice making and social skill development exist within the art classroom that may not exist in other classroom settings. Gerber and Guay (2006) state that art teachers can help students develop the behavioral and social skills expected in classroom settings, including “taking turns, respect for others, working independently, and similar skills” (p. 89). Mason, Thormann and Steedly (2004) found that choice promotes autonomy, “as they [students with disabilities] decide how paint goes on canvas – they are honing the highly critical
capacity of decision making” (p. 41). Mason et al. found many art teachers felt offering choice and opportunity within the context of creating art prepared students to make better choices in the future.

Several studies have been conducted that show a link between the development of social skills and participation in the visual arts. Thalia’s (2011) case study of high school students compared the social-cognitive skills of students who took visual arts versus acting classes. At the end of the year, students who took visual arts classes showed correlation of theory of mind with empathy and adaptive emotional regulation. Thalia concluded that over the course of a year, high school “arts and music students’ social-cognitive skills became more linked” (p. 101). Research by Cohen and Gainer (1995) demonstrated that art integration can be a highly effective way to improve reading and classroom behavior. Cohen and Gainer found that integrating arts into subject-area learning helped increase student’s interest in learning about the concepts. Additionally, students who exhibited disruptive behaviors were challenged and engaged in creative endeavors.

Mason et al. (2004) performed a large-scale multicase study to better understand the arts’ impact on learning for students with disabilities. The study involved 10 sites, 16 focus groups, 60 teachers, interviews with administrators, and nine art exhibits. One of the findings from the study was that the “arts can help someone with a major disability express anger, frustration, fear, confusion and unhappiness most of the time” (Mason et al., 2004, p. 36). The authors shared the experience of one art teacher:

One of the autistic students was nonverbal at the beginning of the year. He’s starting to speak in short sentences like “Hug me” or “I’m going.” His teacher suggested that there was a strong connection between arts activities and the student’s development, “There is always a link between exposure to arts and learning because if a student finds success in one area, that often transfers to another. (Mason et al., 2004, p. 40)
When examining the issue of choice in the art classroom, Mason et al. (2004) found “participant teachers mentioned that offering students choice and opportunity, within the context of creating art, prepared students to make better choices in the future” (p. 41). Mason et al.’s research suggests that a correlation exists between art education participation and the development of social skills.

**Art Education and Students with ED**

Literature that focuses on art education and students with ED falls into two categories. The first area analyzes the visual characteristics of artwork produced by students with ED. This research has been mainly led by those with an art therapy or psychological background (Cox & Cotgreave, 1996; Jolley, 1995; Koppitz, 1968; Munley, 2011). The second area examines art education as a means to improve behaviors related to students’ disabilities. Research by art educators has mainly fallen into the latter category (Lepic, 2004; Murray, 2001; Viglione, 2009). Additional research by art educators has focused on related populations such as incarcerated youth, students in alternative schools, and at-risk youth. While this literature has crossover implications and may contain students with ED, for the purpose of this literature review, only studies that specifically describe the population as ED have been included.

Psychologists and art therapists often use children’s drawings to gain insight into their emotional state. However, a small body of research with art therapy and art education focuses primarily on visual characteristics of drawings produced by children with ED. Koppitz (1968) found human figure drawings (HFD) of students with ED tended to contain asymmetry of limbs, small figures, short arms, big hands, hands cut off, and omission of nose. Jones (1985) also found that students with ED tended to draw tiny figures with hands cut off. Additionally, Jones
(1985) found that the HFD lacked necks and visually had legs together. A small case study compared the drawings of boys with ADHD, a diagnosis that often falls into the ED disability, to a control group of boys without ADHD (Munley, 2011). The researchers found that the drawings produced by students with ADHD had less prominence of color, fewer details of objects and environment and reduced line quality (Munley, 2011). A study of students with ED aged 10-13 who were mainstreamed for at least one hour a day found that their human figure drawings suggest significantly more negative self-concepts than those of students without disabilities, demonstrating signs of anxiety, impulsivity, insecurity, and inadequacy or guilt to act correctly as well as tenseness about sexual matters and aggressiveness (Jones, 1992). These studies suggest qualitative differences between drawings produced by students with ED and those without ED (Jolley, 1995; Koppitz, 1968; Munley, 2011).

Art therapy has been shown to make improvements in social competency in the K-12 setting for students with ED in the K-12 setting (Isis et al., 2010; Pfieffer, 1994). One study has examined the effects of an art therapy program on the social competency of students with ED (Pfieffer, 1994). In that study, the art therapist worked with a group of 10 students over eight months to teach them how to respond appropriately to social problems. At the time of the program, students were being evaluated for medication and receiving additional therapy. Students mainly worked one-on-one with the therapist to create drawings. Pfieffer found that all 10 of the students showed improvement in social competency to a varying degree, with two students being able to be mainstreamed for part of the day at the conclusion of the intervention. Problematically, because the students were also receiving other interventions, it is unknown to what extent the art therapy intervention alone impacted student behavior. Although the study was completed using an art therapy approach in a self-contained setting, the results suggest that
arts-based education can be used to increase social competency for students with ED, but further research in this area is necessary. Isis et al. (2010) discussed the benefits of an art therapy program run through the Miami, Florida, schools for students with ED. An evaluation of the art therapy found that students with ED who were originally identified as difficult for a regular art teacher made excellent progress when working in art therapy. Isis et al. argued for the important place of art therapists as part of the district/school team in working with students with ED. However, the article was limited by a lack of information to support the claims, and there is no mention of methodology or data collection to this program’s effectiveness, making it difficult to generalize for other ED populations.

Two case studies of art education for students with ED also support the ability of the arts to help students find success in school. In a study that examined an arts infusion program that served students with academic and behavioral issues, Viglione (2009) argued that a “great deal of students may meet more of their potential if given an educational design that promotes the arts and creates a climate of respect, supporting their learning styles and functional levels and allowing students to move forward academically” (p. 17). Viglione described the type of learning that occurs at the school through the arts and concluded that infusing education with arts challenges students to think more abstractly, thereby “gaining a deeper understanding of the world around them” (p. 19). Lepic (2004) found through a small case study of four students labeled with behavior disorders (BD) that “art classes offer positive experiences for the BD student” (p. 177). The primary conclusions of both case studies suggest that the researchers found evidence to support the arts benefitted students with ED; however, the conclusions would be strengthened if the data were described in further detail.
Two studies have measured differences in student behavior as a correlation to participation in visual arts classes. In a small case study, Tomaszkiewicz (1984) showed that focused skill instruction in a visual arts photography class led to meaningful changes in behaviors for students with emotional and behavioral disturbances. Five students who participated in the project showed improvement in their behavior in three areas: 1) decreased truancy and absenteeism, 2) increased completion of daily tasks, and 3) decreased frequency of verbal and/or physical abuse by students with ED. Behavior data were collected using week-long frequency intervals for pre and post intervention (the photography class). While the conclusions of the study were promising, stating that students with ED showed change in these areas, the data to substantiate this claim were minimally provided in the article, limiting the ability of other researchers to replicate and generalize this study. Cummings and Visser (2009) completed a case study of refugee children with social, emotional, and behavioral difficulties who participated in arts workshops over a period of six months. The researchers sought to examine whether participation in arts workshops made an impact on the social interactions of the children as measured through observation of social skills. The children were placed in mixed groups so they could learn from peer modeling, and throughout the workshop they showed significant improvement in social participation and art process, suggesting they benefitted positively from the experience (Cummings & Visser, 2009). This limited body of research suggests that students with ED may produce artwork qualitatively different than peers and those who participate in arts have been shown to have an increase in positive behaviors and social competency.

**Conclusions from the Literature**

Rolling (2008) believes that we are in an era when no one paradigm of thought is able to dominate. For those who firmly believe in constructivist approaches, it is naïve to fail to
recognize the effectiveness of some behavioral and cognitive approaches. Yet educators who embrace behavioral approaches because of their effectiveness in teaching basic skills often fail to recognize the drawbacks of these approaches. Behavioral, cognitive, and capability approaches to learning are all valid, but perhaps not in the context of art education.

Three important conclusions can be drawn from this literature review in regard to art learning. First, although theories of artistic drawing stages (Kellogg & O’Dell, 1967; Lowenfeld, 1947) can be used to predict the development of Western children’s drawings, the theories cannot be said to be universally true. Marked differences in children’s drawing development can be found between cultures (Jagoda, 1981; Jolley, 2010; Wilson & Wilson, 1979, 1981) and due to disabilities (Cox & Cotgreave, 1996; Jolley, 2010). Therefore, universal theories of drawing development are not an accurate tool for measuring and judging students’ drawing. Second, the literature suggests that constructivist-based pedagogical and curricular approaches to art education, such as postmodernism, provide opportunities for students to develop high-level thinking skills (Efland, 2002; Eisner, 2002; Metcalf, Gervais, Dase & Griseta, 2005; Walker, 2001). Third, several studies have shown correlations between participations in the arts and general academic achievement (Catterall & NEA, 2012; Jensen, 2001; Tishman et al., 2002; Vaughn & Winner, 2000; Wilhelm, 2002). Specifically, the analysis by Catterall and the NEA can be used as a basis for further studies in examining mean GPA and graduation rates for students who do (and do not) participate in visual arts education.

From other sections of the literature review, it can be concluded that an art education curriculum that incorporates social interaction as part of the classroom pedagogy could provide opportunities for students with ED to develop and practice social skills. Literature on SST has shown that it can be an effective form of intervention for changing behaviors, especially for
adolescent students (Cook et al., 2008). Researchers have not found one particular approach to be the most appropriate but have recommended that students need more opportunities for practicing application of social skills in real-life situations or project-based learning (Gresch, Hasselhorn, & Bogeholz, 2013; Greshem et al., 2004; Kern et al, 2002; Kohn, 2000; Levy Nahum et. al., 2010). Researchers in the field of art education have found the unique pedagogical environment in arts classes encourages social skill and social interaction development for all students, including those with disabilities (Cohen & Gainer, 1995; Mason et al, 2004; Thalia, 2011).

Art education research related to students with ED has focused on improving behaviors and has failed to demonstrate artistic learning. Jolley (2010) points out that although there have been studies on the drawing development of children with visual impairments, nonspecific learning disabilities, Down syndrome, autistic spectrum disorder, and Williams disease, there has been little research on drawing development from other special populations of children, including those with ED. Research related to art education and students with ED has also indicated that students with ED show a decrease in negative behaviors and greater engagement in classroom activities through participation in art classes (Isis et al., 2010; Tomaszkiewicz, 1984; Viglione, 2009). Of particular interest are the Tomaszkiewicz (1984) and Cummings and Visser (2009) case studies that demonstrated quantitative changes in behavior and social interactions in conjunction with participation in an arts education class. This literature review indicates that a postmodern approach to art education could be an avenue for students with ED to develop technical art skills, conceptual thinking skills, and positive social interaction skills that many other subject areas fail to address.
According to Robson (2002), there can be substantial advantages to using more than one method in an investigation. The research was an in-depth, multicase descriptive study that employed a mixed methods approach. Yin (2014) argues that “a major strength of case study data collection is the opportunity to use many different sources of evidence” (pp. 114-115). I collected both qualitative data (through interviews, observations, and artwork) and quantitative data (through observations, art rubric scores, GPA, class rank, and graduation rates). The first part of the research was designed to be a quasi-experimental study that followed two groups of students with ED, one intervention group and one comparison group, over the course of one semester (i.e., 14 to 16 weeks). Quasi-experimental designs are “similar to experimental designs except that the participants are not randomly assigned to groups” (Mertens, 2015, p. 144). However, due to a limited number of participants, the study was redesigned to be a descriptive case study. In order to increase the number of participants, two high school sites were used for the study during the fall of 2015 and fall of 2016. The first site, in fall of 2015, included three students with ED, two of whom were in the intervention group and one who was in the comparison group. The second site, in fall of 2016, included one student with ED in the intervention group. The intervention group consisted of three students with ED in three different inclusive high-school visual art classes. The comparison group included one student with ED in an inclusive high-school culinary arts classes.
By following multiple classrooms, there was an increase in the sample size and internal validity of the data sets. According to Yin (2014), research designs that incorporate multiple case studies (instead of a single case) are less vulnerable and provide the basis for more powerful conclusions to be drawn. Robson (2002) described the use of mixed methods as a way to address different but complementary questions in the research study. The second part of the study included the collection, from the high schools, and analysis of historical data, GPA, class rank, and graduation rates for students with ED who have taken art classes and those who have not. The following sections provide a description of the research methodology for this study: description of the data, location and sources of the data, data collection procedures, data analysis procedures, ethical considerations, internal validity, and external validity. The purpose of this study was to examine the development of art skills, art concepts, and social interactions along with GPA and graduation rates for high school students with ED who take visual arts classes.

**Research Questions**

This research is based on the following research questions:

1. To what extent do postmodern visual arts classes help high school students with ED develop art skills and concepts over the course of a semester?

2. To what extent do high school students with ED who participate in postmodern visual art classes demonstrate an increase in social interactions measured by positive peer-peer and student-teacher interactions and engagement in arts classroom activities over the course of a semester?

3. Do high school students with ED who participate in postmodern visual art classes have higher levels of achievement in terms of GPA, attendance, and graduation rates than students with ED who do not participate in visual arts?
a) Is there a positive correlation between the number of art classes taken and cumulative GPA for students with ED?

b) Is there a difference in the mean cumulative GPA for students with ED based upon the number of art classes taken?

c) Is there a correlation between the number of art classes taken and class rank for students with ED?

d) Is there a difference in the mean class rank for students with ED based upon the number of art classes taken?

e) Is there an association between the graduation status for students with ED based upon the number of art classes taken?

**Description of the Pilot Studies**

**Pilot Case Study**

In the fall of 2013, a pilot study was conducted that focused on art teachers’ perspectives of developing competencies in three areas related to visual arts for students with behavioral needs (ED and autism): art skills, art concepts, and social skills. Additionally, the research examined the curricula structure, expectations, and development of art competence. Interviews were conducted with three teachers from two sites, one at a large public school and two at a small private therapeutic school, and samples of student artwork were collected. In the pilot, although learning of art concepts was addressed to some extent, the interview questions focused on the development of art skills: students’ ability to produce developmentally appropriate artwork, students’ experience in multiple methods, teachers’ approach to instructing art skills, teachers’ approach to evaluating art skills, and students’ development as observed by the teacher or demonstrated in artwork. Both
teachers expressed similar challenges when dealing with students with behavioral needs and developing art skills.

**Art skills.** In relation to art skills, the teachers had several common observations. The teachers stated students were often missing basic skills such as how to cut out a circle and were drawing below age-appropriate levels. It was suggested this could be due to inconsistent attendance or a previous focus on academic skills and not properly developing motor skills. One of the art teachers, April, stated:

> There is school refusal, hospitalizations, in and out constantly, homeschooling because of school refusal and the inconsistency, due to their diagnosis, makes things difficult. So I think they do eventually end up missing skills along the road. I think some people focus on, okay well he is at school so that is fine. We are not going to push any other issue. (personal communication, 2013)

Many of the students with behavioral needs exhibited sensory issues and were uncomfortable dealing with certain materials or overwhelmed by environmental influences. One of the teachers compensated for this by allowing a student to wear headphones in class to block out distracting noise. It was noted that some students exhibited an inability to draw from real life but that the same students were able to draw very well if given a photograph to work from. Finally, both teachers stated that students with behavioral needs in their classes showed an ability to learn new art skills given time and appropriate instruction.

**Art concepts.** From the teachers’ perspectives, the understanding and development of abstract concepts, which represent a higher order level of thinking, is one of the most challenging aspects of working with students with behavioral needs. When given the prompt, “See”, a student with autism responded, “I am having a hard time with see. Do I just draw an eye?” (personal communication, 2013). When leading a found-object sculpture project:
I would try to pull different things for her, like here is a bag of tricks for you, now assemble with this . . . couldn’t do it, I even grabbed some things that would make it into looking like something and she couldn’t envision that. So I would literally be like, “Here is a body, here is a head, it’s a robot! . . . Here are some forks for arms.” (personal communication, 2013)

**Evidence to support the development of art skills and concepts.** Two images from one student that were collected as part of the study demonstrate the development of art skills and concepts during a high school visual arts class. Figure 2, from week one, shows a student entry with basic drawing skills, using stick figures and known symbols such as the sun to show an image of a person in a kitchen environment, perhaps feeding a cat. Figure 3, from week five, is drawn from the journal prompt, Friday the 13th. Here a higher level of drawing skills is evident. The student demonstrated observational skills (though probably drawn from a photograph), a greater attention to detail and realism, and the use of color to delineate between ground and sky. The improvement of quality of line and sophisticated design suggest the student is applying art skills obtained during the previous five weeks. Figure 3 dealt with a more complicated abstraction of idea. The student is representing the concept of horror beyond the obvious typical horror movies, depicting horror imagery as it relates to war. These images were produced only four weeks apart but show the growth in art skills and conceptual thinking that a student exhibited as a result of visual arts education.
Social skills. Teachers were asked to describe how the students were developing self-management and the ability to interact appropriately with peers and teacher. For example, Deborah stated, “They can just sit and be in the room with somebody and they can share via the art,” and that art was place for them to explore ideas in “a different way, less threatening for them.” The teacher from the alternative setting, April, described art as something that gives them a “shield inbetween me and them where they can feel a little more comfortable, so they can . . . just kind of a distancing kind of thing for them,” and felt that students were better able to respond to redirection and comments from the art teachers than in other situations. As the semester progressed, Deborah described students with behavioral needs learned from their peers and began “looking around and seeing what other kids are doing.” When a student found a particular journal entry assignment difficult as a result of an abstract prompt, the student developed enough self-awareness to know that he did not fully understand the assignment and, therefore, asked for help and followed up with a request to look at other student journal entries.

Both the art teachers described how participation in arts helped with the students’ self-confidence. The teachers found ways to display artwork throughout the school and discussed these displays as promoting self-confidence for students. The teacher in the alternative school described one student’s experience creating a video for the end-of-the year art show:

It transformed her, to be able to perform that, to be able to be open about all these things that people say or that she was thinking and feeling about herself, she literally put her feelings on her, for everyone to see, although not everybody saw it, but for anyone to see those internal thoughts. (personal communication, 2013)

Conclusions from pilot case study. The pilot study provided the basis for determining the wide variety of art skills and conceptual complexity that might be expected from students with ED.
Although Lowenfeld (1947) suggested that students will naturally move through the stages of artistic development, this study indicated that students with behavioral needs may produce drawings typical of younger typically developing children, similar to the results of a study for students with learning disabilities (Cox & Cotgreave, 1996). The research also indicated that one of the causes of the lower than expected development of artistic skill may be the lack of opportunity for this group of students to practice these skills due to frequent school absences or differing expectations. As a result of this research, it was determined that a benchmarking system should be created in order to reliably evaluate student growth in art learning. Due to the low level of art skills demonstrated by many students with ED in the pilot study, the benchmarking system for the dissertation research needed to include images below high-school quality artwork in order to adequately document growth in art skill development.

The teacher’s perspectives regarding the improvement in areas social skills supported the conclusions of Lepic (2004), Viglione (2009), and Tomaszkiewicz (1984) regarding art education and students with ED. Due to the limited nature of the pilot study, the teacher’s reflections on changes in social skills were not reliable. Further research and evidence from multiple viewpoints were necessary to support this conclusion. For the dissertation research, changes in social skills were documented through the triangulation of multiple methodologies and viewpoints.

The pilot case study data sets consisted of interviews of teachers and collection of student work. The teachers responded to the prepared questions with relative ease, but both teachers were able to give more details when asked to provide specific examples of students, situations, or artwork that supported their claims. For the dissertation study, questions for teachers provided more opportunities to discuss specific examples and examine artwork created by the students. Additionally, the interviews included specific questions about student behavior and changes
noticed by the teacher. Overall, conclusions could not be drawn because of the lack of data and viewpoints included as part of the pilot study.

**Pilot for Benchmarking System**

From the pilot case study in the fall of 2013, it was determined that students with ED may present a wide variety of abilities and lack skills in certain areas. Therefore, a benchmark system, used to assess the artwork of high schools students with ED, should include more than three levels in order to adequately assess student growth. However, to increase reliability and consistency, no more than five levels should be defined. A benchmarking system was created using samples of 30 artworks that represent visual arts in multiple media from grades four to twelve. These images were collected from Chicago-area art teachers and represent student work from within the last five years, so they are closely representative of the range of student artwork that would be collected as part of the research. A panel of four raters (three art education doctoral students and one high school art teacher) was used to arrange the artwork into five levels, based on holistic assessment. The panel was asked to look at the artwork for qualities of technical artistic skills, conceptual complexity and the use of media and visual qualities to express ideas, but they were not given the option of benchmarking analytically on each of these areas.

Following the ranking of images, the inter-rater reliability was calculated. Hallgreen (2012) explained that the assessment of inter-rater reliability provides a way of quantifying the degree of agreement between two or more experts who make independent judgments about the data. Because the pilot data was ordinal and there were more than two experts, the reliability was calculated using Pearson’s correlation coefficient to find a value between -1 and +1 (with -1 representing a negative correlation, 0 representing no correlation, and +1 representing a complete positive correlation). Hallgreen stated that inter-rater reliability is considered poor for ICC (inter-
coder correlation) values less than .40, fair for values between .40 and .59, good for values between .60 and .74, and excellent for values between .75 and 1.0. The correlation between the expert raters is listed below in Table.

Table 1
Inter-Rater Reliability for the Pilot Study

<table>
<thead>
<tr>
<th></th>
<th>Expert 1</th>
<th>Expert 2</th>
<th>Expert 3</th>
<th>Expert 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expert 1</td>
<td>+1</td>
<td>.56</td>
<td>.57</td>
<td>.63</td>
</tr>
<tr>
<td>Expert 2</td>
<td>.56</td>
<td>+1</td>
<td>.45</td>
<td>.42</td>
</tr>
<tr>
<td>Expert 3</td>
<td>.57</td>
<td>.45</td>
<td>+1</td>
<td>.62</td>
</tr>
<tr>
<td>Expert 4</td>
<td>.63</td>
<td>.42</td>
<td>.62</td>
<td>+1</td>
</tr>
</tbody>
</table>

The ICC of the four experts showed that none of the experts can be said to have high correlation in ranking of images. In examining the correlation between the raters, Expert 4 and Expert 2 showed the lowest ICC of .42, which is considered fair. Experts 1 and 4 showed the highest ICC value of .63, which is considered good. Additionally, Experts 3 and 4 showed a good correlation value of .62. A second calculation showed the expert’s correlation to the mean score of the images: Expert 1 at the excellent level, Expert 4 at the good level, and Experts 2 and 3 at the fair level.

After examining the data from the ranking of the panel of experts, there was an unacceptably low level of inter-rater reliability in ranking the images. One possible reason was that the experts were asked to rank images holistically while taking into consideration multiple factors: art skills, conceptual skills, and application of medium. In reviewing the rankings, some
experts tended to emphasize the technical skills, while others placed more importance on the conceptual component of the images. Additionally, the experts were provided with no contextual information, such as a title or artist statement, to understand the intent of the artist.

**Conclusions from pilot benchmarking system.** Leedy and Ormrod (2001) explain that the purpose of a brief pilot study is to “determine the feasibility of your study” (p.116). The pilot for the benchmarking was found to have low levels of inter-rater reliability. However, Dorn (2003) found that by incorporating the process of rater training, quantifiable and reliable estimates of student performance in art education can be conducted. For the dissertation research, an initial rater training process was implemented, during which raters determined benchmark images and went through a process of adjudication to reduce discrepancies in ratings. When using adjudication, four resolution procedures might be applied (Johnson, Penny, Fisher & Kuhs, 2003). Johnson et al. state that the discussion model of adjudication is most appropriate for resolving discrepant ratings when the raters score independently. Adjudication through discussion requires raters to mutually review the evidence (or in this case artwork), provide additional evidence for one another, challenge assertions, and reach a final consensus on a performance level. Due to the fact that raters seemed to rank images placing emphasis on different qualities, an analytic assessment, rather than a holistic assessment system, will be implemented that has separate scores for art skills and conceptual skills. Additionally, due to the fact that the rater with the lowest level of inter-rater reliability was not a high-school art teacher, for the dissertation research all raters had to have experience teaching high-school visual arts. Though each of the raters could be considered an expert in the field of art education, they failed to independently achieve an acceptable level of inter-rater reliability. The pilot study demonstrated the importance of rater training and adjudication in order to achieve high levels of inter-rater reliability.
Description of the Data

The design of a study is based on a combination of topic and paradigm (Creswell, 2008). Creswell (1994) defines the two paradigms as qualitative and quantitative and suggests that by combining both methods, the research is strengthened and can be seen as a form of triangulation, neutralizing bias from any particular methodological approach. Triangulation is used to check for reliability and increase internal validity.

The current questions may not be answered fully by one paradigm; therefore, various forms of data including interviews, observation, statistics, and visual images, were collected and analyzed in a pragmatic approach. Robson (2002) describes the use of the pragmatic approach as using whatever philosophical or methodological approach best works for a particular research problem, which often leads to mixed methods studies where both quantitative and qualitative approaches are adopted. According to Reichardt and Rallis (1994), “The pragmatic approach is feasible because the values of current quantitative and qualitative researchers are highly compatible” (cited in Robson, 2002, p. 43).

Location and Sources of the Data

The target population for this study is high school students with ED who may act inappropriately in class through peer-peer interaction, peer-instructor interaction, or engagement in art-related tasks. Creswell (2008) identifies that an important consideration for qualitative research is the ability to gain access to those sites. For this study, one of the greatest obstacles to the research was the identification of and access to appropriate sites, especially when taking into consideration issues of prevalence. Rather than using a randomized sampling technique, convenience and criterion sampling were used, relying on various personal connections with administrators and social media platforms to find appropriate school sites. However, this was
problematic as schools are often unable to determine the exact number of students with certain disabilities, schedules, and placement of those students until the school year is underway. Originally, it was planned that the study would be conducted in one semester; however, the first school site experienced a reduction in the total number of students with ED in their school, from 64 to 42. Additionally, the first school had far fewer students sign up to participate in inclusive visual arts and culinary arts (four for each), of which over half of the students declined to participate. It was determined by the dissertation committee members that a second school research site would need to be secured in order to increase the number of participants in the study. The second school site needed to be comparative to the first site in terms of size, location, and student population. A school site was arranged for spring of 2016, but the district super-intendent decided to pull out of participation in the study at the last minute. The second school site for fall of 2016 also had a relatively small number of ED students taking visual arts and culinary arts classes (four in arts and three in culinary arts). Out of these students, one student agreed to participate in the study.

**Selection criteria: Schools, teachers, and students.** The following were the criteria for selection for inclusion in the study. The school sites were public high schools with a visual arts teacher. The visual arts teachers had a postmodern approach to curriculum and pedagogy determined by looking at three factors. First, the visual arts teacher needed to demonstrate a constructivist approach to learning as demonstrated by incorporating research, exploration, reflection, and evaluation of their artwork as part of the curriculum. The visual arts teachers also needed to incorporate the five concepts that assist understanding of postmodern visual culture: art as cultural production, temporal and spatial flux, democratization and a concern for otherness, acceptance of conceptual conflict, and multiple readings (Freedman, 2003). Finally, the pedagogy
of the class had to incorporate varied opportunities for social interactions. Additionally, the visual art classes need to be inclusive settings that include at least one student with ED.

Once the schools were identified based upon the previously listed criteria for the art teachers, the comparison group of students was identified and contacted for participation in the study. At each school site, the comparison teacher taught a non-core subject-area class that included at least one student with ED. It was determined that culinary arts would be a good comparison class due to the nature of the hands-on studio curriculum, group work, and classroom environment. Due to issues of prevalence, it was necessary to observe three different art classrooms and one comparison classroom in two different schools. After two rounds of research, a total of four students participated, and it was determined by the committee to move forward with analysis as descriptive research. Data were collected from high-school art teacher participants, high-school art student participants, culinary-arts teacher participants, culinary-arts student participants, and schools. Descriptions of the data locations are listed below.

**High schools: Selected sites.** The setting for the research was two large public high schools in the Chicago southwest suburban area that have art education teachers with postmodern approaches to pedagogy and curriculum as previously defined. The first school site had approximately 2,060 total students with 14% of the population having IEPs (IIRC, 2016). Approximately 33% of the students are considered low income and 90% of the students graduate high school (IIRC, 2016). The school serves as a district wide setting for students with ED, with approximately 40 students at the school receiving services under an ED label. The school provides opportunities for students to participate in inclusive elective classes such as gym, culinary arts, and visual arts (personal communication, 2015). However, many students with ED often had to retake
failed classes and are limited in elective options (personal communication, 2005). In general, the visual arts teachers at this school often have classes with 30-40% of the students with IEPs.

The second school site is slightly larger, with approximately 2,600 students, of which 12% have an IEP (IIRC, 2016). The second school site had 26% of the students classified as low income and 96% of students graduate high school (IIRC, 2016). This school also provides opportunities for student to take inclusive elective classes. However, students are limited by the nature of the ED program, which occurs at a separate school site for Periods 1-5. Students could only participate in inclusive elective classes during Periods 7 and 8. Each school has programs for students with ED who are included in the general art setting. The inclusive classrooms contain a total of 20 to 30 students (depending on the setting), with approximately one to two students with ED in each class.

**Teacher participants.** The art teacher participants were high-school art teachers teaching at the high school sites. The art teachers displayed strong classroom management skills and clear curriculum goals along with a postmodern approach to curriculum and pedagogy. It was necessary to recruit three art teachers from multiple high schools who have similar philosophical and pedagogical approaches. Two of the art teachers were teaching digital arts classes focused on using Adobe Photoshop, Adobe Illustrator, and Dreamweaver. One art teacher was teaching an arts foundations class, which serves as an introductory art class and is required for all students to take further classes in the visual arts classes. Each class had between 26 and 30 students in grades 9-12. The art teachers were teaching inclusive art classes that include students with ED who were observed as part of this study.

The culinary arts teacher participant was a comparison as part of the study. This site was chosen because it was a hands-on learning environment and was a non-core subject-area class.
Students had to elect to participate in culinary arts. For each art teacher participant, a comparison teacher from the same school was asked to participate in the study. However, as no culinary arts students agreed to participate at the second school site, and only one culinary arts student agreed to participate at the first site, there was only one culinary arts teacher. One culinary arts teacher was interviewed as part of the study. The teacher taught an inclusive culinary arts class that included a student with ED who was observed as part of this study.

**Student participants.** The art student participants for this study were high-school students with ED taking an art class being taught by one of the art teacher participants. All students had an IEP with a diagnosis of ED. Students were high-school level, all were male, and were between the ages of 16 and 18. According the director of special education at each school, students were receiving support in academics and social/behavioral skill development. Two of the three students spent the majority of the day in self-contained academic classes. One student spent the majority of the day in inclusive classes but received counseling and psychological support. One student was Caucasian, one was Hispanic, and one was African American.

The culinary arts student participant for this study was a high-school student with ED taking a class being taught by one of the culinary arts teacher participants. This group was meant to act as a comparison group for students with ED who were taking art. However, very few students with ED participated in culinary arts (or other elective classes) and only one agreed to participate. This student was a Caucasian male between the ages of 16-18. He spent the majority of his day in a self-contained academic setting.

**Data Collection Procedures**

The data sets are outlined in the following section, with a detailed description and rationale. From the three data locations, eight sets of data were collected as outlined below in Figure 2.
Table 2 demonstrates how the eight data sets were used to answer the research questions.

Table 2

Research Questions and Data Alignment

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Art Teacher Interview</th>
<th>Student Interview</th>
<th>Observation Statistics</th>
<th>Observation Notes</th>
<th>Student Artwork</th>
<th>Graduation Rates</th>
<th>GPA</th>
<th>Class Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>To what extent do postmodern visual arts classes help high school students with ED develop art skills and concepts over the course of a semester?</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To what extent do high school students with ED who participate in postmodern visual art classes demonstrate an increase in social interactions measured by positive peer-peer and student-teacher interactions and engagement in arts classroom activities over the course of a semester?</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do high school students with ED who participate in postmodern visual art classes have higher levels of achievement in terms of GPA, class rank, and graduation rates than students with ED who do not participate in visual arts?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
Due to the complex nature of the research and the need to increase reliability through triangulation, both qualitative and quantitative data were collected. According to Lincoln, Lynham, and Guba (2011), qualitative methods are the preferred approach when using a constructivist framework; however, quantitative methods may be used when appropriate. The following sections outline the data collection methods for the qualitative and quantitative data.

**Qualitative Data**

**Interviews with art teachers.** Two semi-structured interviews were conducted with each art teacher: at the beginning and end of the semester. Robson (2002) explains that semi-structured interviews allow for follow-up questions and flexibility in the interview based on the interviewee’s responses. The first interview was used to gain background information about the teacher and the goals of the art class for the semester. This included biographical information such as number of years teaching, teacher training, philosophical approaches, and objectives for the art class. The objectives for the art class helped to determine criteria for evaluation of student growth and interview questions for students. Additionally, the teacher was asked to describe the kinds of accommodations that are provided for students with disabilities. If teachers had familiarity with the students with ED who were in their class, they were asked to describe the student’s strengths and weaknesses with art skills, art concepts, and social skills. The end of the semester interview was a chance for the art teacher to reflect on how well students were able to develop art skills and art concepts over the course of the semester. The researcher and teacher examined student artwork for evidence of art learning. Additionally, the art teachers were asked to describe changes in social skills for students with ED during the course of the semester. Teachers were asked to provide specific examples of instances in which students struggled or succeeded with peer-peer
interactions, student-teacher interactions, and engagement to task. (See Appendices A-D for the teacher questionnaires)

**Interviews with students.** According to Boughton (1996), other evidence such as student interviews and artist statements can be helpful to authentically evaluate art learning. For this study, semi-structured interviews with students were conducted at the beginning and end of the semester. Although the teachers were interviewed in regards to art learning and social skills, Guba and Lincoln (1981) note that in a constructivist format “multiple realities exist that are time and context dependent” (p. 115). Therefore, interviews with students focused on each student’s perspective of what skills and concepts they believed they learned in art class along with their development of social skills. Students were asked to reflect on the semester and talk about specific projects or assignments from the course of the semester. Students were often asked to clarify concepts related to their artwork. Additionally, students were asked open-ended questions related to their experiences in the art classroom (See Appendices E-H).

**Artwork.** Boughton (1994) recommended that the visual arts should have more reflective and authentic assessment measures than other areas, and standardized tests should not be used to reflect degree of learning in visual arts. Therefore, images of artwork were collected for a portfolio on a bi-weekly basis throughout the semester to be analyzed for the development of art skills and concepts. Images of student artwork were collected by the teacher and the researcher, depending upon the teacher’s preferences. Artwork for the students in culinary arts classes was not created because the parent declined for the student to participate in that aspect of the study. Student artwork took the form of the following media: drawing, photography, digital artwork, and sketchbooks. Over the course of the semester, at least six project images were collected, with some additional images showing the process/development of art projects. Additionally,
written and oral artist statements were collected, when available, and students were asked to discuss their artwork as part of the student interview. This information was submitted with the images for analysis. According to Mertens (2015), portfolios are a systematic way to collect student work that will be evaluated and measure against a pre-determined scoring rubric.

**Observation field notes.** For this research, the teacher of each classroom coordinated with me to identify students with ED, locate an observation spot in the room, and communicate any schedule changes or absences. Each student was observed 14-16 times over the course of one semester. I recorded field notes in each class while collecting social interaction data. Field notes were not structured but aimed to provide insight into student behaviors, curricular and pedagogical approaches, and any important events that might impact the events of the class. Examples of field notes included notes of type of student interactions, students leaving the class to use the restroom, or types of avoidance behaviors.

**Quantitative Data**

**Observation statistics.** During the observations, I used a partial interval time recording method to collect frequency data for two of the three social interactions: positive peer-peer interactions and positive student-instructor interactions. Partial interval recording measures whether an observed behavior did or did not happen during a specified time period. According to Meany-Daboul, Roscoe, Bourret, and Ahearn (2007), partial interval recording is more accurate than momentary time sampling when estimating measuring frequency of events. Momentary time sampling was used to measure the percentage of time students were engaged in the task during each class period. Using momentary time sampling, behaviors are recorded if occurring precisely at the predesignated moment. Students were observed for 30-second intervals, with student engagement noted every 30 seconds for 5-minute intervals throughout the period (see Appendix J).
During and at the 30-second interval, I looked for each of the three social interactions and noted if the student was exhibiting those skills. If the student was not exhibiting those interactions, no mark was made. As there was only one student in each of the classrooms, I made notes on the student in 5-minute intervals, with a 5-minute break, throughout the class. Based upon the recommendations of the committee, for each student, the research was conducted for eight days of observation over three weeks at the beginning of the semester to establish baseline data and a second series of eight days of observation over three weeks at the end of the semester to document any changes. Due the nature of students with ED, it was important to collect over multiple days so consistency of scores for each time period could be determined, increasing the validity of the data through a repeated measure (Kratochwill et al., 2010). These observations did not interfere with the students’ normal instructional experience. Internal consistency was measured over time by comparing student scores. Reliability was determined through the use of a second observer who observed concurrently for a minimum of 30% of the time to determine inter-observer agreement. The second observer was a former special education teacher with a master’s degree in school counseling and received IRB approval. The second observer and I demonstrated inter-observer agreement prior to the start of observations through practice with videotapes of classes that included students with behavioral difficulties. Finally, validity was determined though an independent judge’s examination of the form and that the form has accurate ways to record frequency of the events.

**Descriptive statistics.** Descriptive statistics for students with ED were collected from each school site. Due to issues of prevalence and the fact students had not graduated high school, descriptive statistics were not limited to the students who were being observed as part of this study. Secondary sources of data can be found in administrative records (Mertens, 2015).
Robson (2002) states that one advantage of using data archives is the ability to tap into extensive data sets drawn from larger representative samples. The goal was to gain a total sample size of at least 40 students with ED who did and did not take visual arts classes in high school (20 for each variable being analyzed) for the results to be statistically significant. Eighty-three transcripts were collected from the two schools. Thirty-two students had not taken art and 51 had taken one or more semester of inclusive visual arts. Student privacy was protected through information being provided in a confidential manner (i.e., the assignment of numbers or codes to represent students). Background information for the school was collected, which included descriptive statistics on the student population: size of student body, ages, race, socio-economic status, percentage of student body classified as disabled, percentage of student body classified as ED, overall GPA, and graduation rates. For students with ED, the following variables were collected: number of art classes taken, GPA, class rank, and graduation rate/status. The number of art classes taken, class rank, and GPA are interval variables while graduation rate is nominal. The data was analyzed and compared as three separate data sets as discussed in the data analysis section.

**Data Analysis Procedures**

From the eight data sets, 14 variables of data were analyzed. Table 3 shows the connection between data sets to variables and finally analysis. The sections that follow explain in detail the data analysis procedures.
<table>
<thead>
<tr>
<th>Data Sets</th>
<th>Variables</th>
<th>Method for Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student Interviews</strong></td>
<td>Transcripts of interview from beginning and end of semester</td>
<td>Two levels of coding from which conclusions will be drawn. Examined for themes related to art learning and social skill development.</td>
</tr>
<tr>
<td><strong>Teacher Interviews</strong></td>
<td>Transcripts of interviews from beginning, middle, and end of semester</td>
<td></td>
</tr>
<tr>
<td><strong>Observations</strong></td>
<td><strong>Observation Statistics</strong></td>
<td>Positive Peer-Peer Interactions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Positive Student-Teacher Interactions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Engagement to Task</td>
</tr>
<tr>
<td><strong>Observation Field Notes</strong></td>
<td>Observation Notes</td>
<td>Transcribed and coded for themes related to social interactions vs. art learning.</td>
</tr>
<tr>
<td><strong>Student Artwork</strong></td>
<td>Art Skill Scores (by expert raters based upon benchmarks)</td>
<td>For each student with ED, their artwork scores was plotted chronologically on a line graph and analyzed for growth in artistic skill and concepts</td>
</tr>
<tr>
<td></td>
<td>Conceptual Skill Scores (by expert raters based upon benchmarks)</td>
<td></td>
</tr>
<tr>
<td><strong>Historical Transcripts</strong></td>
<td><strong>Graduation Status</strong></td>
<td>Graduation Status of students with ED who took art classes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Graduation Status of students with ED who did not take art classes</td>
</tr>
<tr>
<td></td>
<td><strong>High School GPA</strong></td>
<td>GPA of students with ED who took 1, 2, or 3 or more art classes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GPA of Students with ED who did not take art classes</td>
</tr>
<tr>
<td></td>
<td><strong>Class Rank</strong></td>
<td>Class rank of students with ED who took art classes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Class rank of Students with ED who did not take art classes</td>
</tr>
</tbody>
</table>
Qualitative Data Analysis

**Observation field note analysis.** The observation notes were transcribed, analyzed, and coded. Creating transcriptions were the first step to become familiar with the data. This process began immediately following the conclusion of data collection, followed by first- and second-level coding as described by Saldana (2016). In the first level of coding, descriptive coding was used to organize field notes into categories related to the research questions. Saldana (2016) states that descriptive coding is appropriate for virtually all qualitative studies. In the first round of coding, labels were used to sort data based upon the research questions and observation statistics collected. Four categories were initially assigned to the notes in first-level coding: SE for Student Engagement; PP for Peer-to-Peer interactions; ST for Student-to-Teacher interactions; and AL for Art Learning. However, it soon became clear that a fifth category was necessary and Curriculum and Pedagogy (CP) was added.

In order to reduce and sort the data, the observation field notes went through two levels of coding. Through the second-level coding, the data related to social interactions was reorganized by student for each initial code (Lewis, Taylor & Gibbs, 2005). For each student, the pre- and post-observation field notes for each category were assembled. The data was re-read to identify common themes, and a second level of coding was developed to further delineate the data. This coding is outlined in Table 4.
Table 4
Second-Level Coding

<table>
<thead>
<tr>
<th>1st Level Code</th>
<th>2nd Level Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE=Student Engagement</td>
<td>AB=Avoidance Behaviors</td>
</tr>
<tr>
<td></td>
<td>CT=Completed Tasks</td>
</tr>
<tr>
<td></td>
<td>TDT= Teacher Directed Tasks</td>
</tr>
<tr>
<td></td>
<td>OT=Off Task</td>
</tr>
<tr>
<td>PP= Peer-to-peer Interactions</td>
<td>S= Social</td>
</tr>
<tr>
<td></td>
<td>C= Content</td>
</tr>
<tr>
<td></td>
<td>M=Mentoring</td>
</tr>
<tr>
<td>ST=Student-to-teacher Interactions</td>
<td>TT=Teacher Talking, Demonstration, or Presenting</td>
</tr>
<tr>
<td></td>
<td>R=Redirection</td>
</tr>
<tr>
<td></td>
<td>CO=Conversation with Teacher not about art</td>
</tr>
<tr>
<td></td>
<td>BC=Behavior Correction</td>
</tr>
<tr>
<td></td>
<td>SI=Student Initiated</td>
</tr>
<tr>
<td></td>
<td>AL=Art Learning</td>
</tr>
</tbody>
</table>

The resulting information from coding was analyzed for each student and written in summary form. Sometimes counts of repetitive behaviors, such as excessive number of times leaving for the bathroom, were found from the field notes. Other times changes in behavior from pre-observation to post-observations were noted. The observation field notes, in combination with the observation statistics and interview analysis, are presented in Chapter 4 for each student.

**Interview analysis.** According to Miles and Huberman (1994), qualitative data analysis consists of three components: data reduction, data display, and conclusions. The interviews were transcribed, analyzed, and coded to look for common themes, statements that are either supported or go against theory and other relevant information. This process began immediately following the art teacher and student interviews and was conducted throughout the course of the semester after each interview, followed by first- and second-level coding.
In order to reduce the data, the interviews went through two levels of coding. Robson (2002) states, “First level coding is concerned with attaching labels to groups of words. Second level coding groups the initial codes into a smaller number of themes or patterns” (p. 477). Ryan and Bernard (2003) suggested a number of ways through coding transcripts that the researcher can discover new themes in the data. For this research, coding included noting patterns, subsuming particular into the general, and making conceptual/theoretical coherence (Robson, 2002). The interviews were initially analyzed and coded based on the first-level coding used for field notes. During this phase, two additional categories emerged that had not been used for field notes: Background Information (BI) and Future Plans (FP). Through the second-level coding, which is also considered a re-organization, two things may emerge: categorization of codes and the emergence of new possibilities (Lewis, Taylor & Gibbs, 2005). The resulting information from coding was analyzed to draw conclusions through interpretation. In this process, initially the second-level coding from observation field notes was applied to the interview transcripts; however, it soon became apparent that these codes failed to capture the complexities of interwoven experiences. Shank (2002) explained that by interpreting the data, the researcher is forced to examine the data with a different lens. In the end, the interview transcriptions provided triangulation and valuable insight into behaviors and art learning.

**Artwork analysis.** Mertens (2015) states that one method of scoring portfolios is a rubric. Prior to the start of the research, a group of three former or current high-school art teachers was selected to analyze the artwork. According to Mueller (2014), when student performance varies across criteria it can be difficult to evaluate using a holistic method. The images were analyzed analytically based upon a rubric, developed by the NIU Division of Art and Design Education, that provides performance descriptors for three components: technical skills, formal qualities, and
conceptual complexity (see Appendix I). Dorn (2003) found that through the process of training teachers, a high level of inter-rater reliability can be achieved for independent teacher assessment of artwork.

The teachers came together to create a benchmark system that levels 30 pieces of artwork on a scale of one to five. The collection of images were from the Chicago area and included images produced by fourth- through twelfth-grade students in a variety of media. For the benchmark process, first the teachers independently rated each image, using the analytic rubric. Using the discussion model of adjudication, discrepancies between the raters were analyzed until a consensus was reached on each score. The creation of the benchmark system acted as training for the teachers.

Following the conclusion of the study, teachers with high-school art experience independently rated the artwork samples produced by the student participants in the study, comparing against the benchmark images. For this second phase the teachers had the added benefit of statements from the interviews with the students. This information helped to further clarify student intent and conceptual complexity in regards to the artwork. Each teacher was asked to independently rate the artwork for three components using the rubrics. Inter-rater reliability was calculated using Pearson correlation coefficient and determined to be statistically significant between all four raters with $p \leq .01$. For further information see Chapter 4.

**Quantitative Data Analysis**

**Observation statistics analysis.** For each student, three variables of data were collected: positive peer-peer interaction, positive student-teacher interaction, and engagement to task. Because the time period for classes varied at each school and was affected by shortened days, finals, and students called out of class, the count for each day was transformed by calculating as a
percentage of possible points and rounded to the nearest 100th place. This made the data consistent for comparison analysis. For each student, the percentage for each of the variables was plotted on a multiple-line graph that contained three lines (positive peer-peer interaction, positive student-teacher interactions, and engagement to task). Each student line plot had 14-16 data points, eight representing the beginning and eight representing the end of the semester. Some students had slightly less data points due to absences and/or in-school suspension. Because the observations occurred in a pre and post format (i.e., at the beginning and end of the semester), the data for each student was calculated to determine mean differences between the beginning observation period and the end observation period. The line plots were analyzed for several factors. First, data were analyzed by social interaction for each student, noting if students made growth in each skill and if greater growth was noted in a particular area. Second, there was an examination of trends across students, looking for commonalities and differences between the four students. The student line graphs were compared to see if the students as a whole had differences in frequency in particular social interactions or if any other overall trends emerge. The observation percentages were discussed with the teachers to check if they agree with documented frequencies. Finally, any changes in observation frequencies were compared against student and teacher interviews to determine if other evidence also supported changes in social interactions. Because of the small nature of the study, generalizations were not possible based upon the observational data collected on student social interactions. Mertens (2015) notes, that when randomized sampling is not possible, researchers need to be careful in the generalizations they make.

**Descriptive statistics analysis.** Using SPSS, the descriptive statistics were analyzed and compared as separate data sets to determine the relationship for students with ED among the number of art classes taken, GPA, and graduation rates. Because the data were obtained from two
high schools that used two different cumulative GPA calculations, the GPAs needed to be standardized. It was determined that one school used a 4.0 scale and another used a 5.0 scale. Because this data would be compared against the study by Catterall and NEA (2012) that used a 4.0 GPA scale, all the transcripts were recalculated to reflect a 4.0 GPA. Then the GPA variable was converted into z-scores. The data were analyzed to see if there was a relationship between the number of art classes taken (independent variable) and GPA and graduation status (dependent variables). Second, mean GPA and graduation percentages for students with ED who did and did not take art classes were compared with the national averages as calculated by Catterall et al. The schools were unwilling to release data on the average GPA for each year, but did provide a ranking for each of the students who graduated.

The method for analyzing this data included correlation and one-way ANOVA. Correlational statistics describe the strength and direction of a relationship between two or more variables (Mertens, 2015). In this case correlations were run to determine the relationship between the number of art classes taken with GPA and class rank. When analyzing this data for correlation, several steps were taken. Descriptive statistics were run to examine the means and normality of distribution for each variable, including the Levene’s test (p>.05). Pearson’s Correlation was calculated to determine if there was a positive relationship between the independent and dependent variables. A scatterplot created graphical representations of the tests of normality to verify previous results. ANOVA is used to evaluate the mean differences between two or more treatments (Gravetter & Wallnau, 2008). Following correlational analysis, an ANOVA was run to determine if there was a difference (p<.05) between the mean cumulative GPA of students who did not take art and students who took art one, two, or three semesters or more.
A second and simpler test was also run to calculate mean GPA for students with ED who did and did not take art classes. The results of this test were compared with the two published data analyses. First the mean GPA and graduation rate was compared with the overall high school statistics as reported through the IIRC. Second, the mean GPA and graduation rate was compared with the national averages for students who participated in visual arts (Catterall et al., 2012). This provided an indication as to how the students with ED in this study performed compared to the high-school’s overall population and the national high-school population.

**Limitations**

This study has three major limitations: self-reporting by the teacher and student participants, the sites, and the amount of data available. Additionally, there are limitations in the ability to generalize the study, and the interviews with teachers and students are limited by participants’ memory and the accuracy of their memory. During interviews, teachers and students were asked to reflect on their experiences and recall specific events. These responses could be affected by the student’s or teacher’s memory, interpretation of events, or other factors. For this reason, students and teachers were asked similar questions. Both responses were compared to observational notes to check for veracity. The potential sample size was limited by the number of students who were classified at the given school. Therefore, multiple classes taught by several different art teachers were included as part of the case study. Finally, because the ability to analyze correlations of academic achievements for students with ED who have taken art requires a sample size larger than one years worth of data, historical data was collected from the school’s student information system. To compensate for limitations and increase the reliability of the results, the data were triangulated, based on the research questions, through the combined use of teacher interviews, student interviews, student artwork, and observations.
Ethical considerations

Ethical considerations are an essential element when designing a research study involving participants (Mertens, 2015). Because this study includes participants who are minors and considered a vulnerable population, ethical considerations are extremely important. In this study, ethical considerations were put in place: protecting the confidentiality of the participants through the use of pseudonyms, providing teacher participants with the information needed to give fully informed consent, and obtaining parental consent and student assent or student consent. Approval was obtained through the Northern Illinois University’s Institutional Review Board (IRB) for research involving human subjects prior to collection of data.

Description of the Internal Validity

There are four possible threats to internal validity: implementation, location, history, and outside influences. The implementation of the study was dependent on several classroom teachers. The teachers at each site varied, and with that their enthusiasm, effectiveness, and implementation of the curriculum varied. This was controlled somewhat through the prescreening process in which the art teachers were interviewed and observed prior to the start of the research to determine that teachers exhibit strong curriculum and teaching techniques.

The second threat to internal validity was location. Because most public high schools have a limited number of students with ED who are mainstreamed, there had to be several school sites. School sites may cause variables in the time allotted to arts, resources available, and previous exposure and experience in the arts. This was controlled through determining locations with as many similar variables as possible. As well, the curriculum should predetermine how much time is spent in art each week.
The third threat to internal validity was history. Since the students were in a school setting, and this study was completed over time, other factors that could influence students were: events in school or change in student behavior plan. This was controlled through documenting and noting events as they happened and the use of a comparison group. The final threat to internal validity was outside influences. Many ED students are strongly affected by variables outside of the control of the researcher, such as consistency of taking medications, diet, home-life, and counseling. These were controlled through contact with the teacher of record and counselor to determine if any outside factors may have influenced student performance, either negatively and positively.

**Description of External Validity**

The results of the study are not able to be generalized to students with ED due to limited participants and sample size. For the results to be generalized to all students with ED, further studies would need to be done with a larger sample size and variety of ages and locations. If the results of these further studies show similar results with a decrease in frequency and severity of behavior and an increase in art learning, then the results would be generalizable to more students with ED.

**Conclusion**

Chapter 3 focused on the methodology for the study. The first pilot study provided valuable insight into challenges and successes when including students with ED in visual arts classes. The second pilot study illustrated a need for a rubric that rates art separately on skills and concepts. The data from this mixed methods case study was collected from the high schools, teachers, and students. Having a mixed-methods case study allowed for investigation into both the individual experience and the larger group experience. Additionally, the approach was developed to address the lack of quantitative research on this population in relation to art education.
Triangulation, multiple observers, and multiple raters were used to increase the validity of the data. However, ultimately, the biggest challenge to this research was access to schools and this population of students. Several schools were reluctant to participate, and over half of the qualified students chose not to participate. Due to student confidentiality, I was unable to contact students or parents to personally discuss the study and reassure them of any concerns they may have had. For this reason, data collection extended over a period of two school years and included fewer students than the initial proposal. Chapters 4 and 5 will discuss the findings from the case study. Chapter 4 focuses on data related to social interactions and academic achievement. Chapter 5 discusses student learning in the arts. Chapter 6 synthesizes findings from the data analysis with the literature and discusses implications.
CHAPTER 4
SOCIAL INTERACTIONS AND ACADEMIC ACHIEVEMENT DATA

The information presented in this chapter represents a complex social and phenomenological experience of social interactions in elective high school classrooms for students identified as having an emotional disability. This case study contributes to our shared knowledge of a specific group within specific situations (Yin, 2014). Due to the large amount of data collected and cross-disciplinary approach to research, the data analysis has been split into two chapters. Out of the three research questions, data relevant to two questions are presented in this chapter.

1. To what extent do high school students with ED who participate in postmodern visual art classes demonstrate an increase in social interactions measured by positive peer-peer and student-teacher interactions and engagement in arts classroom activities over the course of a semester?

2. Do high school students with ED who participate in postmodern visual art classes have higher levels of achievement in terms of GPA and graduation rates than students with ED who do not participate in visual arts?
   a. Is there a positive correlation between the number of art classes taken and cumulative GPA for students with ED?
   b. Is there a difference in the mean cumulative GPA for students with ED based upon the number of art classes taken?
c. Is there a correlation between the number of art classes taken and class rank for students with ED?

d. Is there a difference in the mean class rank for students with ED based upon the number of art classes taken?

e. Is there an association between the graduation status for students with ED based upon the number of art classes taken?

Data presented in this chapter includes observation statistics, observation notes, student interviews, teacher interviews, and transcripts. The chapter itself is broken into two parts, with each part addressing data relevant to one of the research questions. In the first part of the chapter the data have been organized by students to create four portraits of the development of social interactions. In this part of the chapter, observations of student behavior are illuminated and further explored through field notes and interviews of the students and teachers. The qualitative data provide insight into the development of social interactions measured by positive peer-peer and student-teacher interactions and engagement in arts classroom activities over the course of a semester. In the second part of the chapter, statistical analysis of historical transcripts from the two high schools are presented. Transcripts were gathered for students who had a designation of ED in their IEPs. Information regarding GPA and the number of art classes taken was analyzed. This second part of the chapter addresses whether high school students with ED who participate in postmodern visual art classes have higher levels of achievement in terms of GPA, attendance, and graduation rates than students with ED who do not participate in visual arts. In the final part of the chapter, conclusions regarding the data analysis on social interactions are discussed.
Social Interactions

Four case studies are presented to highlight social interactions for students with ED in inclusive elective classes. As discovered in the pilot study, students who were in self-contained settings often struggled with developing appropriate social interactions. This was further confirmed through the interviews by an art teacher’s discussion of a self-contained class he used to teach:

We have gone away from that class, because we found it was not a successful class, because when all those kids were put in the same room, they did not treat it like they would a regular art class, they treated it like a regular program class which moves at a slower pace, and have a focus on behavior not curriculum as much. 30% of their grade was behavior content not actually curriculum content. We find that when they are in our mainstream classes they do much, much better. (personal communication)

As discussed in the previous chapter, data related to social interactions are presented by student to provide a comprehensive picture for each student. Information will be presented for each student background, followed by the observation statistics. The observations statistics will be explored for student engagement, peer-to-peer interactions, and student-to-teacher interactions, with information from field notes and interviews providing insight. For confidentiality, students picked names for themselves based on artists. The three students who participated in visual arts are presented first in the order of least experienced to most experienced in art. Then the student who participated in culinary arts will be analyzed. Finally, conclusions that can be drawn from the data regarding the development of social interactions will be discussed.

Data were collected over a period of one semester for each student with a pre/post format. While the goal was to collect observational data for eight days at the beginning of the semester and eight days at the end, this varied slightly as some students had excessive absences. While
every effort was made to make up observations due to student absences, because of scheduling this was not always possible. Observed behaviors were calculated to reflect the percentage of possible data points for each day to account for varied period lengths. Observation field notes, student interviews, and teacher interviews were coded, as described in Chapter 3, and then relevant information is presented to provide a richly detailed description of each student’s experience.

**Student Picasso**

Picasso is an 18-year-old Caucasian male in his senior year of high school. This student has a primary IEP classification of ED and spends the majority of his day in self-contained classes for high school students with ED. This includes math, science, and physical education. This student receives support services for social skills and content-area learning. Picasso exhibits behaviors typical of students with externalizing ED. He has a history of absenteeism, walking out of class, acting out in class, defiance of authority figures, and failing to complete work. For this research, Picasso was observed in an inclusive Art Foundations classroom, which he chose to take to improve his fine motor skills. Picasso stated, “I was born with pretty awful fine motor skills, and all throughout elementary school we tried to improve them and it just wasn’t happening. So my handwriting stayed pretty bad.” Picasso had previously taken a self-contained Art Foundations class, with a different teacher, called IND Art for students with emotional disabilities. The art teacher from his previous class stated that he did very poorly but did not fail the class.

The Art Foundations class that Picasso is currently in has 24 students from grades 9-12. There is no prerequisite for the class, and students who take art receive required language credits for graduation. The class is a year-long class and meets every day for 55 minutes. According to
the teacher, approximately 40% of the students have either an IEP plan, 504 plan, or are English Language Learners. If more than 50% of the students qualify for support services, then a paraprofessional aide is assigned by the school to support the students. The teacher is new to the school but not to the district, having taught art for four years at the neighboring high school. The teacher received information regarding accommodations for each student approximately three weeks after school started. When asked about the content of these accommodations, the teacher stated that it included information such as the student is allowed extended time on tests and to take tests in the testing center and should be given preferential seating. In reflecting on her own teaching strategies, at the beginning of the semester, to meet the needs of diverse learners, the teacher answered, “Flexibility and being able to repeat or take it back a notch, or repeat and reteach. I think a lot of teachers get frustrated with that, but I would rather talk about it again than have them miss it completely and then fall out of the loop of the class.” In the interview, the teacher stated that Picasso has a case worker who emails her every week to check on his progress, and this is the person she would contact if issues or concerns arise.

At the beginning of the semester, the student was asked to describe the expectations for behavior. This was important because if students are unclear about expectations for using class time and behavior, then it might affect their performance in class. When asked what expectations the teacher had for class time in terms of behaviors, Picasso responded, “Well, use the time in class to work, don’t have your phone out,” and then he clarified with, “I never use my phone anyways.” The student was also asked what he was supposed to do when he finished a project early. He stated:

Picasso: Turn it in or put it in the back of the classroom?
Interviewer: Okay and after that? What does she expect? (continues but student interrupts)
Picasso: She gives you an opportunity for extra credit, I am pretty sure.

The teacher was asked to describe the types of social interactions for peers to engage with each other and for the teacher to engage with students. When asked about planned peer-to-peer interactions, the teacher said they have critiques throughout the semester. Some projects are designed so students work at stations, creating a small group dynamic. However, students mainly engage in interactions with each other that are self-initiated. These could be social or related to the content of the lesson. In talking about interactions with students, the teacher stated that in the first few weeks of school, students are often shy, so she tries hard to get to know them through ice breaker activities and by actively circulating around the classroom. The teacher also stated that she does PowerPoint presentations with questions to engage students in art, demonstrations using the Elmo for new art techniques, one-on-one help, critiques, and formative and summative rubrics. Some of these interactions are verbal, others are written. When observing the class, I looked for these types of interactions to see what methods seemed to help Picasso engage with classmates and the teacher.

Picasso was observed for a period of eight days at the beginning of the semester and eight days at the end of the semester. In the first weeks of school, students are often on their best behavior or struggling with the adjustments, so observations did not start occurring until the third week of school. As outlined in Table 1, at the beginning of the semester Picasso was engaged in the work of the lesson 21.35% of the class period. At the end of the semester Picasso was engaged in the work of the lesson 57.45% of the class period, exhibiting a difference of 36.1%. Picasso engaged in positive peer-peer interactions 4.29% of the time at the beginning of the semester and 34.74% at the end of the semester, exhibiting an increase of 30.45%. Picasso interacted positively with the teacher for 4.09% of the period at the beginning of the semester
and 5.53% at the end of the semester. The difference in positive student-to-teacher interactions from the beginning of the semester to the end of the semester was 1.21%. Further exploration of these variables with information from observation field notes, student interviews, and teacher interviews is described in the following paragraphs. Table 5 outlines each variable at the beginning and end of the semester along with difference in percentage.

Table 5
Picasso Behavioral Observational Statistics

<table>
<thead>
<tr>
<th></th>
<th>Mean at Beginning of Semester</th>
<th>Mean at End of Semester</th>
<th>Mean Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Engagement</td>
<td>21.35%</td>
<td>57.45%</td>
<td>36.1%</td>
</tr>
<tr>
<td>Positive Peer-Peer Interactions</td>
<td>4.29%</td>
<td>34.74%</td>
<td>30.45%</td>
</tr>
<tr>
<td>Positive Student-Teacher Interactions</td>
<td>4.09%</td>
<td>5.53%</td>
<td>1.21%</td>
</tr>
</tbody>
</table>

**Picasso student engagement.** During the observations at the beginning of the semester, Picasso’s engagement varied greatly from a low of 10% of observed moments of student engagement to a high of 46% of the observed moments of student engagement (see Table 2). The types of tasks that Picasso completed without prompts at the beginning of the semester were simple and direct, such as watching the teacher during demonstration and taking out materials when directed. On one day, when the teacher did a drawing demonstration on the Elmo, Picasso was able to follow along and complete the drawing with the teacher. Over the course of eight days, the teacher attempted eight times to engage the student through one-on-one conversations, which led to Picasso re-engaging in work following these conversations. At the beginning of the semester Picasso exhibited many off-task behaviors and avoidance behaviors, including reading
books during class, going to the bathroom, putting his head down in class, or ignoring class discussions. During all eight observations, Picasso was observed reading for a portion of the class period.

When talking to the teacher about the student’s engagement at the beginning of the semester she stated, “So from day one I kind of recognized that (Picasso) likes to sit by himself. He doesn’t socialize with anyone in the class; he doesn’t seem to have any friends in the class. He also is very quiet, but when I approach him, when I try to make some conversation with him, he does seem to respond. He doesn’t completely ignore me.” However, even though the student did not exhibit outward signs of wanting to be engaged in the class, his interview presented a different perspective. As part of the interview, I tried to have students reflect on their class preferences as a motivation for why they come to school. Initially, I asked Picasso, “So thinking about your day, what is your favorite subject?” He responded, “I don’t really have one to be honest.” This was followed up by asking him, “Do you have a least favorite subject?” and his response was a definitive, “Math.” The student also stated that his favorite class from high school had been German, even though he failed it. I then asked the student if he could “think about your art class in a range of least liking for Math and German at the top, where would you put them on a scale of 1-10?” He responded, “8-10,” indicating that he had a strong preference for his art classes but was exhibiting behaviors inconsistent with his verbalized preferences.

By the end of the semester Picasso was spending a greater proportion of the class period engaged in the work of the class, with a mean increase of 36.1%. The observed lowest percentage of student engagement was 28% with a high of 95% (see Table 5). At the end of the semester, Picasso was observed actively taking notes on lectures, trying to complete artwork, starting new art projects, bringing in homework, participating in preparation for the final, and
completing the final exam. Picasso continued to exhibit avoidance and off-task behaviors such as going to the bathroom, putting his head down, putting his work away early, and wandering around the room to avoid working. However, the frequency of observed avoidance/off-task behaviors decreased from 19 at the beginning of the semester to eight at the end. It should be noted that on one of the days, the teacher reprimanded Picasso and he left the class for the remainder of the period.

When I asked the teacher to reflect on the semester, she said, “Overall, I feel that we got to a place that was productive. There were certain days that were better than others.” In reflecting on his growth, the teacher stated, “I was skeptical about halfway through, I really started to doubt; this is not working at all, he doesn’t want to be here, he doesn’t want to be in the class, but I really hoped.” However, by the end of the semester, the student seemed more willing to engage in challenging work.

Teacher: Overall, I know this was a difficult project for him, but he stuck with it. He didn’t give up on the first day or say I’m done or I don’t want to work on it anymore. This is actually the one that he said “what can I do?”

Interviewer: That’s very impressive, I feel like early on in the semester when I saw him he was really just rushing through projects and just finishing them. To hear that he was sticking with it and trying to do that is a change

Teacher: Yeah even for a few days, it was still huge, rather than him being done on the first day and like “I’m done, I don’t want to do this” He would actually bring it up to me the next few days and be like “What can I do now? How can I make this a better product?”

While improvements were seen, the teacher did note that she felt Picasso still struggled with daily participation.

I understand not every day is going to be rainbows and sunshine, but I would like to see him a little more on a daily basis, a little more of the period spent on working. I don’t mind if he wants to take a break from the project because he is totally getting frustrated, I don’t mind. Maybe you want to free draw in your sketchbook or do something out of the extra credit binder.
Through interviews, I also asked Picasso to reflect on his experience in art foundation, and he was fairly negative saying, “I am not happy with any of my artwork . . . because it’s all awful,” and when asked if he had enjoyed Art Foundations, he stated “Not necessarily.” At the end of the semester, I asked him to once again rank his Art Foundations class on a scale of 1-10 and he said, “Let’s go with a 4.” When I asked the student what class out of his schedule was his favorite, he said it was Digital Photo, which he ranked as a 7. In the interview, Picasso presented a fairly negative viewpoint of the class, continuing to demonstrate inconsistencies between his externalized behaviors and preferences. In contrast to his comments, the teacher’s and researcher’s observations suggest that he showed an increase in his engagement in art learning activities, which may have been due to his interactions with peers and the teacher.

**Picasso positive peer-to-peer interactions.** During the observations at the beginning of the semester, Picasso’s observed positive peer-to-peer interactions varied greatly from a low of 0% to a high of 21.6% (see Table 2). On four days, Picasso was not observed having any positive peer-to-peer interactions. On at least two occasions Picasso seemed to ignore or rebuff attempts by peers to enter in conversations. One peer stopped to comment on Picasso’s work and stated, “That looks really good,” but Picasso did not look up and murmured a response, resulting in the student walking away. Most of Picasso’s interactions with peers were social, including interactions to give a student gum, talk about the weekend, etc. In terms of interactions that related to art-content learning, once during the beginning of the semester, Picasso did ask another student for help in creating artwork. Twice Picasso was observed initiating interactions with other students. Overall the interactions were limited, brief, and lacking in substance.

At the beginning of the semester (which was about four weeks into the semester), I asked Picasso what he liked best about art. He said, “Mostly socializing, it’s pretty cool, and bettering
my drawing skills.” Because Picasso spends the majority of his day in a self-contained setting with other students with ED, his opportunities to develop relationships with peers in school are limited. Picasso stated that at the beginning of the semester, he was not friends with anyone in the class, and his comment about liking art for socializing seemed to be contradictory to his behavior. The teacher confirmed this in her own observations saying that “he doesn’t socialize with anyone in the class; he doesn’t seem to have any friends in the class.”

Records from observations at the end of the semester showed Picasso was spending more time interacting positively with peers, with an increase of 30.45%. It should be noted that for the observations at the end of the semester, Day 7 was a final and the student had no opportunities to interact with peers. Outside of Day 7, the observed lowest percentage of positive peer-to-peer interactions was 16.6%, with the highest at 56% (see Table 2). Picasso was observed mainly interacting socially with peers having conversations about weekend plans, college, eating snacks together, etc. In contrast with the beginning of the semester, Picasso seemed to actively initiate conversations with peers, sometimes moving about the room to talk with people. Four times it was noted that Picasso initiated conversations with peers. Twice Picasso was seen initiating conversations with peers related to art-content learning, once about charcoal pencils and once about the subject of the drawing. At the end of the semester, Picasso seemed much less isolated and was trying to socially engage with classmates.

By the end of the semester, both the teacher and student commented on changes in Picasso’s interactions with other students. The teacher stated, “I’m just like awesome! Make friends in the class, I am all for that. I know it is hard being a senior in a mostly freshman class, but he has really broken out of his shell in that respect and talked to other students.” Picasso reflected, “When I first came to the class, I didn’t really know anybody at all, but I pretty much
know everybody now, and a few I have made friends with and maybe hang out with sometimes outside of school.” During the end-of-the semester interview the student stressed that socialization was his favorite aspect of art class and that he enjoyed “being able to socialize while I work, because I am always anxious in the school day, so that alleviates some of my anxiety.” The teacher also elaborated on Picasso starting to engage with other students regarding artmaking:

Teacher: We did a critique actually on these pieces, and he participated. He offered up criticism for other students, and other students commented on his. They said some really nice things, and I always tell them, start with the positive and then you know maybe a suggestion or improvement, nothing like “that looks horrible.”

Interviewer: Right, more like constructive.
Teacher: Yeah constructive criticism. And they get it, so a lot of the peers were exchanging comments.

So while the student may not have ranked the class highly at the end of the semester, it is clear that the ability to socialize and make friends as part of art class was a key aspect of his experience.

**Picasso positive student-teacher interactions.** At the beginning of the semester, Picasso’s observed positive student-to-teacher interactions included a range from a low of 0% to a high of 8.3% per day (see Table 2). On two days, Picasso was not observed having any positive student-to-teacher interactions. Eight times the teacher had to redirect the student from an off-task or avoidance behavior to engaging in the work of the lesson. These included the teacher assisting students in getting supplies and providing reminders regarding the next steps or methods in the project. The teacher also engaged Picasso in conversations related to the book he was reading or how his weekend went. These conversations often resulted in him then starting to engage in artmaking. Additionally, the teacher was observed having positive interactions with
Picasso regarding art learning, which included answering questions about artwork, talking to him about self-reflection, and making suggestions for application of a kneaded eraser to a drawing. On the last day of these observations, Picasso was seen initiating a student-to-teacher interaction by asking for a piece of paper. Overall the interactions were brief but positive and often led to Picasso engaging in work following the interactions.

Because this teacher had not previously taught the student, she felt it was important to develop a working relationship. In the interviews she talked about how she used an ice breaker to help develop rapport with the student:

I read something about each student and I would talk to them. Like hey I didn’t know you were in a band or you know whatever. And that just sort of breaks the ice and makes it seem like she (I) really did read these. I of course did that with (Picasso) too, and he listens to a lot of music that I obviously know. And he was kind of like oh yeah and opened up.

Yet, at the same time, the teacher found the student’s avoidance behaviors and lack of engagement difficult: “I think in the beginning it really frustrated me because I thought there has to be a way to win this kid over. There has to be a way to make it fun for him or to help him relax and get out of his shell a bit.” Over the course of the semester, the teacher also had many opportunities to interact with him about his art with a combination of daily check-ins, critiques, and then written feedback through rubrics and comments. The teacher mentioned that she was still getting to know the student and was learning about the best ways to interact with him. “I don’t ever want to make him feel uncomfortable, so I just try and keep it light for now and like I said, I don’t push too much in the beginning.”

During observations at the end of the semester Picasso was spending slightly more time interacting positively with the teacher, with an increase of 1.23% (see Table 2). The observed lowest percentage of positive student-to-teacher interactions was 0%, with the highest at 13%.
However, the only day in which zero positive student-to-teacher interactions took place was the day of the final, during which the student was engaged in completing the final exam tasks. At the end of the semester there were fewer observed times in which the teacher had to engage in redirection of Picasso, with three instances noted. Additionally, the student continued to initiate interactions by asking for help on drawings and asking questions about the project. Five interactions were observed related to art learning. In one interaction, the teacher told Picasso he needed to apply a technique, and his response was, “I used contour lines.” In a second interaction, the student responded to the teacher’s comments and added details to the drawing. Picasso was extremely responsive during a final presentation, answering questions from the teacher. Even though the frequency of interactions did not increase significantly, it seemed the interactions were less about engaging Picasso in work and more about the content of art learning.

At the end of the semester, the teacher stated:

Overall, I feel that we got to a place that was productive. I feel like I now can socialize with him and talk to him as a teacher to student. With him at the beginning of the year, it was way more difficult to talk to him and approach him. Now I do it all the time, I make jokes with him . . . And most of the time when I suggest something, he does try. So I think it has improved since the beginning of the year.

In reflecting on his experience with the teacher, Picasso said he enjoyed having this teacher and stated, “Ms. --- is a really good teacher, but sometimes kids aren’t respectful towards her. So I try to be as respectful as I can to make up for it because I am sure those kids stress her out a lot.” The respect that Picasso exhibited for the teacher was also apparent in his changes in ability to take suggestions on project.

Interviewer: What do you think was his biggest success in terms of projects this year?
Teacher: I would almost say, there was a couple he did pretty well on considering his earlier work. I thought he really took the time (on) the still life during the semester, even though it was a big project, and it is kind of stressful, not every student enjoys it. But he would tell me, “I want to meet the standard for a good grade on this how do I do that? That was really of
awesome of him to come up and talk to me, because most of the time he was like “oh I’m done, I’m Done” Okay, but he said, “what do I have to do in order to make this better for a better grade and just make it better in general?” And I was like oh, okay here are some things you could do, or here are some things that are doing really good, just keep doing that. I think that was when he really started opening up to me suggesting things.

Figure 5 plots the daily percentage of possible moments to be engaged in work and interact positively with peers and the teacher. At the beginning of the semester Picasso was observed minimally engaging with the work and fellow students. His pattern of engagement tends to transfer, so that on days in which Picasso is more engaged with peers, he is also more engaged in the work of the lesson. His engagement with the teacher remains consistent. At the end of the semester, this pattern does not continue, but rather his engagement in work and with peers is more of a mirror. Days in which Picasso was highly engaged with peers, he engaged in less work, perhaps due to the distraction. Day 7 should not be viewed as a normal work day, because Picasso was taking a final and not allowed to interact with peers. Much like at the beginning of the semester, Picasso’s engagement with the teacher did not vary greatly and remained consistent (see Table 2).
For Picasso, this semester was his first experience in an inclusive art class. Although at the beginning of the semester he showed no outward signs of wanting to be in the class or participate with his classmates, he was very clear in his interview that he had purposefully chosen to take art and enjoyed it as part of his day. When I communicated this information to the art teacher, she was surprised, describing the disconnect between his behaviors and his intentions or the importance that he seemed to place on his visual arts experience. The observation statistics show a positive difference between the amount of time he spent engaged in work from the beginning of the semester to the end. Additionally, Picasso was spending a much greater percentage of the class period interacting with his peers, both socially and about artmaking. Even though there was not a large difference in the percentage of positive student-to-teacher interactions, the teacher felt that he was much more responsive to her suggestions by the end of the semester. Picasso described the hands-on and less structured environment of the art classroom as helping to reduce his anxiety while also creating valuable opportunities to socialize with peers. As Picasso plans to study computer repair in junior college, participation in visual arts was not directly connected to his future or an obvious choice of elective. Yet, it was clear that the student was experiencing valuable social interactions, becoming an accepted member of the larger school community. Although this student had initially planned to drop Art Foundations and take Foods after the first semester, he decided to continue in the class for a second semester.

**Student Vinci**

Vinci is a 17-year-old African American male student in his senior year of high school. This student has a primary IEP classification of ED and spends the morning of his day in a self-
contained setting at an alternative site. Classes at this site include math, science, history, and language arts. In the afternoon, this student participates in an inclusive high-school environment for study hall, lunch, and digital foundations. He receives support services for social skills and content-area learning. Vinci exhibits behaviors typical of students with externalizing ED, acting out in class and avoiding work. Vinci has a history of absenteeism, skipping classes, leaving class, defiant behavior toward teachers, and failure to complete work. Additionally, it should be noted that Vinci is a transfer student having spent most of his K-12 educational experience in a large urban school district and moving to the suburbs in the last year. For this research, Vinci was observed in an inclusive digital foundations art classroom, which he chose to take based on his relationship with the art teacher. Previously Vinci had taken a semester-long web-design course with the same teacher and stated that he chose to take this class because he liked the teacher, saying it was important “just seeing another friendly face, learning something . . . he’s laid back.” When asked to further explain this, Vinci described his interactions with teachers in other classes, saying, “When you try and joke with them, they are like, no mister, not allowed. I just don’t really like the other classes.” When this information was communicated to the digital foundations teacher, he seemed surprised at the fact the student liked him. When asked to describe the student, the teacher said, “He is kind of a showman; he likes being out there. He will stand up and move around the room and have these moments with students. I don’t ever feel like what he is doing is intentionally meant to be disruptive . . . but I think he needs that check, ‘I need everybody to make sure that I am ok.’” While this sort of behavior is very different from the withdrawn behaviors of Picasso, they both are reflective of issues of acceptance and belonging.
The digital foundations class that Vinci is currently in has 25 students in grades 9-12. This is an introductory-level class and has no prerequisites. The year before Vinci had taken a web-design class that was meant to occur after digital foundations. This is his second inclusive visual arts class. The teacher said in the interview that due to scheduling, sometimes students flip-flop the order of classes. The class is a semester-long class and meets every day for 50 minutes. The teacher noted that the class tends to draw students who are not comfortable with traditional artmaking and “the outcome of the projects tends to be more current and modern.” Because students are often making projects related to current visual culture, the teacher also commented, “They have that ownership of what they know and trying to make it the best as possible.” According to the teacher, out of 25 students, four have IEP plans. Additionally, there is a paraprofessional aide who comes every class period and checks on one of the students. The teacher has been teaching at the school for 12 years and teaches Art Foundations, digital foundations, and AP digital art. The teacher received information regarding accommodations and behavior plans digitally at the start of the school year. In the interview, the teacher stated he would seek out the counselor or point person on the document if the student was having issues. Additionally, he usually seeks out help to provide appropriate accommodations on tests and study guides. When asked about specific strategies he has found to be beneficial in working with students with emotional disabilities, the teacher said, “I think a lot of personal interaction, through both verbal and written comments. A lot of times it is reinforcing confidence . . . almost overemphasizing the good. There tends to be some hesitation towards, I don’t know if I am good enough . . if this is right.” The teacher went on to reflect about how he creates opportunities for social interactions in the digital foundations classroom.
In reflecting about opportunities for peer-to-peer interactions, the teacher stated, “I allow them to be involved in conversations as long as their work continues . . . most of the times their conversations start to be more about the work they are making.” The teacher describes this relaxed classroom environment as important “so they feel more comfortable, so they are willing to share their ideas with others, and then when we have critiques, they are more willing to trust each other.” The teacher also talked about the ways in which he interacts with students on a daily basis through casual conversations, providing one-on-one assistance with art-making and providing written comments on rubrics. “I try to clarify, this needs some more work . . . I usually try to pair up something well with something they need to work on for next time.”

Vinci was observed for a period of eight days at the beginning of the semester and eight days at the end of the semester. At the beginning of the semester Vinci was engaged in the work of the lesson 34.25% of the class period. At the end of the semester Vinci was engaged in the work of the lesson 42.5% of the class period, exhibiting an increase of 8%. In regard to what percentage of the period Vinci engaged in positive peer-peer interactions, Vinci exhibited 18.25% at the beginning of the semester and 26.13% at the end of the semester, exhibiting a difference of 7.8%. Vinci interacted positively with the teacher for 8.75% of the period at the beginning of the semester and 7.16% at the end of the semester. The difference in positive student-to-teacher interactions from the beginning of the semester to the end of the semester decreased by 1.59%. Further exploration of these variables with information from observation field notes, student interviews, and teacher interviews are described in the following paragraphs. Table 6 outlines each variable at the beginning and end of semester along with difference in percentage.
Table 6

Vinci Behavioral Observational Statistics

<table>
<thead>
<tr>
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<th>Mean at Beginning of Semester</th>
<th>Mean at End of Semester</th>
<th>Mean Difference</th>
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<td>42.5%</td>
<td>8%</td>
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<tr>
<td>Positive Peer-to-Peer</td>
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<td>26.13%</td>
<td>7.8%</td>
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<tr>
<td>Interactions</td>
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<tr>
<td>Positive Student-</td>
<td>8.75%</td>
<td>7.16%</td>
<td>-1.59%</td>
</tr>
<tr>
<td>Teacher Interactions</td>
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Vinci Student Engagement. During the observations at the beginning of the semester, Vinci’s engagement varied greatly from a low of 20% of observed moments of student engagement to a high of 60% of observed moments of student engagement. The highest two days of observed student engagement were the last two, which occurred in week four of the school year, at 56% and 60%, respectively. The types of tasks Vinci completed without prompts at the beginning of the semester were filling out worksheets, writing down definitions, reviewing for a quiz, participating in critique, and engaging in artmaking. Vinci seemed particularly engaged in the structured critique process that allowed him to move around the room every three minutes and had prompts for him to write responses to peers. Vinci engaged in teacher-directed tasks such as answering questions or engaging in drawing ideas when prompted. At the beginning of the semester Vinci exhibited many off-task behaviors and avoidance behaviors, including walking around the room, going to the bathroom, putting his head down in class, playing on his phone, listening to music, singing, calling out to students across the room, and engaging in off-topic conversations with peers. Almost daily, between 20 and 30 minutes into the class period, the student asked to use the bathroom. Although the teacher did not always give permission, when Vinci left, he often disappeared for 10-12 minutes, which is much longer than other students seemed to take.
When asked what his favorite class of the day was, Vinci initially stated “Lunch.” When pressed to pick a class other than lunch, the student said, “Just playing; it is Mr. ------’s class,” showing a clear preference for not just Digital Foundations but also for the specific teacher. When pressed about what he likes about the teacher beyond his personality, Vinci described the teaching style “You learn a lot and it is fun. He shows it to you on the big screen, breaks it down, and not just hands it to you. He will break it down and go step by step. I respect that.” Like Picasso, when Vinci was asked which was he least favorite class, he also responded, “All the rest of them.” When asked to describe the student at the beginning of the semester, the teacher noted that Vinci “is extremely enthusiastic but also in need of gratification of people’s awareness of his presence. He tends to have an issue with getting to class on time, I almost start to wonder if he shows up late just so people notice him walking in the room.”

During observations at the end of the semester Vinci was spending a greater proportion of the class period engaged in the work of the class, with an increase of 8%. If the last two days of the first observation are not included, due to the fact they may represent the start of a changed behavior pattern, the difference in observed student engagement from the beginning of the semester to the end is 15.1%. The observed lowest percentage of student engagement was 30%, with a high of 74%. At the end of the semester, Vinci was observed watching a demonstration, following along on his own computer, and creating artwork. Vinci continued to exhibit avoidance and off-task behaviors such as going to the bathroom, putting his head down, listening to music, moving around the room, calling out to friends, and playing on his phone. However, the number of observed avoidance/off-task behaviors decreased from 12 per day at the beginning of the semester to 9 at the end.
At the end of the semester I spoke with the teacher about his experience with Vinci in Digital Foundations. We talked about how the month of November was particular difficult for this student.

At one point he was using the bathroom a lot, and he was gone for a long time. There was an issue once . . he left to go to the bathroom and the substitute said he didn’t come back until right at the end of the period. He admitted that he just kind of walked out and this was after another situation previous . . I was advised to write him up, and when I talked to him I was like ‘I’m not here to be the bad guy. I am here to help.’ And in the moment he would understand, but then he would come back and do other things. So we got to a point where he got very defensive, and everything was like the world is against me. I think by the time 8th period came things would pile up in his head and maybe it was just too much for him to handle.

After this, the teacher and I talked about some of the reasons this may have happened with Vinci. I proposed that as one of a few African American students in a conservative, mostly White school, the month of November with the presidential election might have been very difficult for him. Earlier in the semester, I had observed students making anti-Hillary and pro-Trump comments. We discussed this and the potential impact on the student. The teacher said he had heard Vinci say, “I don’t like being here, I don’t want to be here,” in reference to the suburban school. We continued to talk about how the student engages in work during the class period: “There are highs and lows. But once he gets into it, he will go. This [referring to a project] was the one that took place after that low point I spoke of. He came off of that and we were doing this at the time and he rode that, we came to a pretty good place . . if given an unlimited amount of time, the stuff will get done.”

When talking with the student about his experience in Digital Foundations, I asked him about how he was doing in the class “At first I was struggling, I didn’t want to make up the work or do the work, but recently I have been putting forth the effort, just trying to get my work done
and pass . . to be honest with you, I just want to graduate. That means I have to step up my game.” We talked about projects for which Vinci seemed particularly motivated:

Interviewer: Was there a particular reason that you tried harder on that one?
Student: It couldn’t have been no sloppy work, I seen other people working, and I was like daaang their stuff look cool, so I had to do something cool, I couldn’t be basic.

We also spoke about how he felt about Digital Foundations at the end of the semester. He responded that it was still his favorite class because “he is a cool teacher; I respect him. A teacher that cracks jokes, I like that too.” The teacher’s reflection summarizes the challenges Vinci seemed to face in participation: “I think he believes that who he is doesn’t fit in with the day-to-day routine of things. He doesn’t like the regimen, and I don’t think he likes the idea of, ‘Sit here, do this and then I gotta do that, and then I gotta turn this in’. He is definitely a free spirit, go-with-the flow sort of person, and some days, ‘I just really want to listen to my music and think.’”

**Vinci positive peer-to-peer interactions.** During the observations at the beginning of the semester, Vinci’s observed positive peer-to-peer interactions varied from a low of 10% to a high of 28%. Vinci was observed mainly interacting socially with peers through joking, calling out, singing, and checking in by saying things like “what’s up?” Rarely were these interactions prolonged or containing substantive content. Vinci seemed to be social by nature, knowing everyone’s name in the class. One interaction with a student focused on the content of the class, with the students discussing grades and then looking up their grades and assignments on the computer. The majority of interactions at the beginning of the semester can be characterized as short and social.

During observations at the end of the semester Vinci was spending more time interacting positively with peers, with an increase of 7.8%. The range of observed positive peer-to-peer
interactions was much greater at the end of the semester, with the lowest percentage at 4% and the highest at 48%. Vinci was moved from the beginning of the semester, and he was the only student to be moved. This was due to another student feeling uncomfortable and distracted. The teacher said, “He didn’t take that well initially, he assumed he did something wrong. Which maybe he did, maybe he didn’t. He was just kind of being himself . . being loud and would nudge or talk to her. She is someone who just wants to get stuff done.” Outside of this experience, there were no other negative interactions with peers. Vinci was observed to mainly interact with peers having conversations about music, listening to songs together on his phone, and saying hi. Vinci seemed even more vocal than at the beginning of the semester, calling out to students across the room. He once asked a student, “Why are you here?” to which the student responding by saying, “I’m helping a friend.” Vinci then responded to the student saying, “That’s cool, I respect that.” Twice Vinci was seen initiating interactions with peers regarding art content. On one occasion Vinci commented on a student’s ceramics piece by complimenting it, and on another occasion Vinci talked with a student about website design to figure out how to make buttons in Dreamweaver.

At the end of the semester, I talked with both the teacher and student about Vinci’s peer-to-peer interactions. Vinci commented that he has opportunities to talk to people more in Digital Foundations than his other classes and that has led to him getting to know people better. Both the teacher and student commented on a close friendship Vinci had developed. According to the teacher, “From midway through the semester and beyond he is like ‘hey’ and they say hi to teach other. They ask each other how things are going, stuff like that. Actually sometimes I have to separate them.” I talked to the student about his social interactions with peers in the class.

Interviewer: Is there anyone that you have developed a friendship with outside of class?
Student: Mostly all of them.
Interviewer: In what ways do you interact with them outside of class? Social Media? Just in the halls saying hi?
Student: In the halls mostly, I got a few of them on my snapchat. (Student whom the teacher mentioned), that’s my hommie. We be chopping it up, talking. We meet each other in the hall, handshakes, and all that stuff.

For a student who spends most of his time in a self-contained setting and is relatively new to the school, friendships and feeling connected to his classmates are an important step in integrating Vinci into the larger school community.

Both the teacher and student also reflected on how Vinci was using peer-to-peer interactions to help with art learning. “I will catch him talking to the boy next to him and checking and making sure he is doing it right.” Vinci and I talked about how artists borrow ideas from each other and learn from each other, which he said he did as well. When asked to give an example of an idea that he learned from somebody else, Vinci said, “My friend, she made like an eyelash and it went from a ball to an eye, no, she curved mascara.” I clarified by saying that it was a mascara wand that turned into an eyelash and an eye. He then followed up with, “Yes, that was what made me want to show the generations of the controller – that’s what made me want to do that.” While the connection between the two projects is not clear, it seems that in multiple cases, outstanding student work inspired him to work harder to create his own work.

**Vinci positive student-to-teacher interactions.** At the beginning of the semester, Vinci’s observed positive student-to-teacher interactions included a range from a low of 6% to a high of 16%. On four days, Vinci was observed as having positive student-to-teacher interactions 6% of the time. Over half of the positive interactions with the teacher involved redirection and behavior corrections, including correcting language, redirecting the student to focus on his work, and asking the student to put away headphones. On one occasion, the student
was observed asking the teacher for help with the digital computer program, and on another day when the teacher was doing a whole-class presentation, the student enthusiastically called out answers to the teacher’s questions. Three interactions were related to art learning. On one instance, the teacher encouraged the student to draw his ideas first with paper and pencil, as he was struggling to use the illustrator program. Overall the interactions were mainly focused on helping Vinci engage in the work of the lesson. The teacher commented that “he has this friendly sort of vibe to him, but there is no difference between the friend that sits near him and the way he talks with me,” suggesting that the student had a hard time distinguishing between appropriate ways to interact with teachers versus peers.

During observations at the end of the semester Vinci was spending less time interacting positively with the teacher, with a decrease of 1.59%. The observed lowest percentage of positive student-to-teacher interactions was 4%, with the highest at 11%. However, by the end of the semester the nature of interactions with the teacher had changed. Only 20% of the noted interactions involved behavior correction or redirection. In one instance the teacher told the student to “check your hat,” meaning to take it off. In another instance, the teacher encouraged Vinci to get to work, which resulted in the student moving back to his seat and starting to work. Four times Vinci was observed initiating interactions with the teacher to ask questions regarding art learning, including how to use the computer program and discussion of the project requirements. Additionally, the teacher was observed giving several suggestions to the student regarding his work, including adjusting picture size to increase the appearance of depth of field and repeating objects within the image. On both occasions, the student implemented the suggestions of the teacher. Even though the frequency of interactions did not increase, it seemed
the nature of interactions was less about engaging Vinci in work and more about the content of art learning.

At the end of the semester, the teacher and I talked about their developing relationship.

I try and keep it positive, because there are a lot of times that I have to tell him to . . . focus on what he should be doing. I feel that he sometimes interprets those as negative interactions. . . He and I do have side conversations about other things he is interested in. He sheds some of that outer shell, that personality he puts on for the general public, when he and I have these side conversations.

The development of a connection and trust with the student was very important because the teacher stated that earlier in the semester “I noticed he was getting very defensive . . he felt that . . . I was the bad guy, I was out to get him . . . when most of the things that I was trying to get him to understand was things to help him.” When reflecting on their interactions regarding art learning, the teacher stated that Vinci would ask for help when needed or admit that he did not remember how to complete tasks. However, the teacher said this was not a particular change, as he had embraced his suggestions in the previous year. While the statistics did not indicate a large difference in the number of student-to-teacher interactions, as Vinci’s engagement in the class increased, the nature of the interactions changed from being focused on behavior corrections to art learning.

Figure 6 plots the daily percentage of possible moments to be engaged in work and interact positively with peers and the teacher. At the beginning of the semester Vinci was observed minimally engaging with the work and fellow students. His pattern of engagement changed abruptly on Days 7 and 8, which occurred in the fourth week of school. It may be that these days represent a change in the behavior pattern for the student as he became acclimated to the expectations of the art classroom. At the end of the semester, the engagement with work and fellow students remains higher and seems to transfer, so that on days where Vinci’s engagement
in work is higher, his positive interactions with students were higher. In general, on days in which Vinci was not working, he was spending more time on his phone with headphones on and was not receptive to interacting with peers. Additionally, Day 7, Day 8, and post Day 4 were days in which assignments were due (or close to being due). This seemed to be a motivating factor for Vinci to engage in work and interact with peers regarding project development. Vinci’s engagement with the teacher did not vary greatly and remained consistent during all 16 days of observation.

Figure 6. Vinci Social Interactions.

The observations statistics indicate that the amount of time Vinci spent engaged in the work of the lesson increased. Based on the interviews, it appears that the student was highly motivated by the quality of work his fellow students were producing. One of the biggest insights from the student was what he learned by being in art: “When I first went in there, I was like this class is going to be a whole bunch of geeks. Then I realized, don’t judge a book by its cover. They were really cool; I didn’t expect that. They have their own perspective and do the work they want to do. It is not just repetitive stuff; they switch it up.” Vinci developed social
friendships that were important to help him feel connected to and accepted by the class. He also ended up using interactions with peers as a source of art learning and inspiration. It seemed the fact that the student liked the teacher was very important, combined with the teacher making an effort to get to know the student. This allowed the teacher to be able to spend less time on behavior corrections and more of his interactions focusing on the development of artwork as the semester continued. In reflecting on his experience with Vinci, the teacher said, “I don’t mind his personality, and I don’t mind that he is so outgoing; I think that is going to take him far. The biggest challenge for me is how the other students respond to him or interpret the things he does. There is a couple of individuals, who don’t get that.”

**Student Ross**

Ross is a 16-year-old male student in his junior year of high school. He identifies as Hispanic and Caucasian. This student has a primary IEP classification of ED and spends the majority of his day in an inclusive setting. Unlike the other students in this study, Ross was not identified as ED until high school and has no history of taking self-contained classes. However, this student receives extensive support services for social skills and communication. Ross exhibits a combination of internalizing and externalizing behaviors. He has been diagnosed with depression, anxiety, trouble developing relationships with peers, and has suffered from bullying in past years. Ross has a history of absenteeism and skipping classes. For this research, Ross was observed in an inclusive Commercial Design classroom, which he chose to take because of his interest in digital art and his relationship with the art teacher.

This is his third year in art classes with this teacher. When asked about Commercial Design, Ross said, “I just really like having Mr. --- as a teacher. He’s a really cool guy . . . He’s funny and relatable, and he is one of those teachers that as long as you get your work done. He is
okay with it.” Ross also seemed to have a genuine interest in art and said that he “reads comic books a lot” and draws comic strips outside of art class. The teacher confirmed that “he is a pretty big comic geek and . . . the guru . . . when the kids are talking about the cinematic universe . . . he is like ‘Let me tell you what happened in issue 161 . . . ’ He is definitely the class expert.”

When asked about what he likes about art, Ross said that he enjoys it because it is a “leisure class” and “you can do your own thing, you are free to experiment.” The teacher described Ross as “one of the most mature kids I teach.” The teacher commented that when “you see [a] kid tease another kid, (Ross) will be the first one to say something.”

At the beginning of the semester the teacher reflected on his experience with Ross in art classes:

I had him as a freshman in his foundations class, . . . in digital illustration last year, and . . . now in Commercial Design. I have always had an excellent repoir with [Ross]. He comes after school and does art club and has even told me that art is the reason he comes to school in the first place. He doesn’t come to school unless there is an art class attached to it. . . He knows that if he misses school there are ways to still be successful. . . Over the years he was gone for a few weeks and his other classes, they have just snowballed on him and he can’t catch up. But with me, he can stay after school for a few days and catch up on a whole thing if we need to. He also knows that I want to work with him. Art students have a different repoir with our teacher, we sit down at their eye level, we draw with them, we talk to them.

When he is outside the artroom he is a 100% different kind of kid. He just feels very comfortable and safe in the art classroom. He has said he experiences bullying, . . . some pretty negative parts of a high school day outside the art room. There were years when he would come into my room, even when it wasn’t his class period. He would start his day, with a counselor telling him to do that, with me, to get him on the right path.

Because this teacher has a long personal history with the student he was able to articulate more than any other teacher in this study some of the outside issues for the student and how art has helped by providing a place where Ross feels accepted and safe.

The Commercial Design class that Ross was in had six students in grades 11 and 12. At the same time, the teacher was also teaching a section of Digital Illustration with 15 students. Halfway through the class another 10 students who were taking Yearbook entered and were
given assignments to go take pictures. There were two year-long prerequisites for Commercial Design: Art Foundations and Digital Illustration. The class was a year-long class that met every day for 55 minutes. According to the teacher, out of 21 Commercial Design and digital illustration students, eight of the students had IEP plans and two more had 504 plans. The teacher had been teaching at the school for 15 years and was the department chair. The teacher received information regarding accommodations and behavior plans digitally following the start of school. The teacher stated that the social worker reaches out to the teachers and lets them know the goals for each student for the year. In the interview, the teacher said that Ross has a social worker and dean that he can contact if issues arise, but usually all communication happens digitally.

When asked to describe the ways that peers interact with each other in the communication design class, the teacher said, “They are interacting socially as they are working. I try to make sure that the social is not the most important part of it, . . . but I don’t think it is a problem, because it gives them a chance to talk to each other, bounce ideas off of each other and get inspiration.” The teacher also said that because it is a mixed class (digital illustration and Commercial Design), the more experienced students will sometimes help other students with using the programs and tools. Students also interact with each other digitally through blog postings (which was not included as part of observational statistics), where they are required to post their own work every Friday and critique one other student. In talking about the blog posts, the teacher mentioned, “They are all like, ‘I am so bad at art . . . this is my garbage’. You know that is not what they mean; you know deep down this is important to them. But they are just so afraid of getting ridiculed that they start with their own personal ridicule.” The ways in which the teacher planned to interact with students included demonstrations, individual instruction, written comments on blog postings, informal formative assessment, and summative assessment.
The teacher stated that most of his interactions with students are oral and the majority of feedback he provides is oral to help students develop their concepts. However, the teacher noted that informal interactions in which students tell him stories about their day are important to continue developing rapport.

Ross was observed for a period of seven days at the beginning of the semester and seven days at the end of the semester. At the beginning of the semester Ross was engaged in the work of the lesson 80.37% of the class period. At the end of the semester Ross was engaged in the work of the lesson 69.24% of the class period, exhibiting a decrease of -11.13%. However, this statistic may have been greatly impacted by teacher absences, which are further discussed below. In regard to what percentage of the period Ross engaged in positive peer-peer interactions, Ross exhibited 38.46% at the beginning of the semester and 46.14% at the end of the semester, exhibiting a difference of 7.68%. Ross interacted positively with the teacher for 9.97% of the period at the beginning of the semester and 5.67% at the end of the semester, a decrease of 4.3%. Further exploration of these variables with information from observation field notes, student interviews, and teacher interviews is described in the following paragraphs. Table 7 outlines each variable at the beginning and end of semester along with difference in percentage.

<table>
<thead>
<tr>
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<th>Mean at Beginning of Semester</th>
<th>Mean at End of Semester</th>
<th>Mean Difference</th>
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<tr>
<td>Student Engagement</td>
<td>80.37%</td>
<td>69.24%</td>
<td>-11.13</td>
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<tr>
<td>Positive Peer-Peer Interactions</td>
<td>38.46%</td>
<td>46.14%</td>
<td>7.68%</td>
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<tr>
<td>Positive Student-Teacher Interactions</td>
<td>9.97%</td>
<td>5.67%</td>
<td>-4.3%</td>
</tr>
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**Ross student engagement.** During the observations at the beginning of the semester, Ross’s engagement varied from a low of 68% of observed moments of student engagement to a high of 98% of observed moments of student engagement. Ross seemed to complete most of the tasks required for the class, including blogging, responding to peer’s blogs, and individual projects. At the beginning of the semester Ross exhibited a few off-task behaviors such as talking to peers or browsing the internet. However, Ross did not exhibit avoidance behaviors. At the beginning of the semester Ross stated that the subject he most looks forward to in coming to school is his art class. During the interview, Ross was clear in describing the behavioral expectations of the class, saying, “You need to get your work done, be respectful, try not to be too loud.”

At the end of the semester Ross was spending less of the class period engaged in the work of the class, with a decrease of 11.3%. The observed lowest percentage of student engagement was 28.3% and a high of 96.6%. Due to a family illness, the teacher was absent two of the seven days at the end of the semester, and it was these days when Ross was least engaged in the class, with a percentage of 28.3% and 33.3%, respectively. If those two days are eliminated and the engagement is recalculated, Ross was observed to be engaged in work 84.62% of the period, which represents an increase of 4.62%. At the end of the semester, Ross was observed watching teacher demonstrations, reviewing the classroom blog for information, and creating projects. Ross exhibited a small increase, from two at the beginning of the semester to four at the end, in observed off-task behaviors such as working on assignments for other classes, talking with peers, and browsing the internet.

At the end of the semester the student ranked the class a 10, stating that it was definitely his favorite class of the day: “I genuinely enjoy being in that class, nothing feels like a burden.”
Ross stated that there was not a project that he did not like, but that he was not very successful with the game project because “I wasn’t very responsible of my time.” The student said that he enjoyed a project designing personal logos as his favorite because the teacher “showed examples, but other than that you were on your own. I just liked being able to do whatever.” At the end of the semester, the teacher said, “I think he has done well . . . that class is crazy . . . its got Commercial Design, digital illustration, and yearbook at the same time. Any kid that can cope with all that going on, I think is doing great.” Both the teacher and the student mentioned that Ross had signed up to take AP Digital Art the next year.

**Ross positive peer-to-peer interactions.** During the observations at the beginning of the semester, Ross’s observed positive peer-to-peer interactions varied from a low of 23% to a high of 73%. Five of the seven days Ross’s observed interactions fell between 23% and 36.6%. The last two days were higher at 50% and 73%. Two members of this class had been in the prerequisite class with Ross in the prior year. Most of Ross’s interactions with peers were social, discussing popular culture and events in school. Ross seemed to engage in many conversations and comments with fellow peers, often developing a running commentary in which he was simultaneously working and making comments to a friend. Twice Ross was observed initiating conversations. Once Ross was observed mentoring and discussing art content with another student by answering questions regarding how to use the computer program. Overall Ross seemed comfortable in this classroom.

During observations at the end of the semester Ross was spending more time positively interacting with peers, with a mean increase of 7.68%. The observed lowest percentage of positive peer-to-peer interactions was 30%, with the highest at 71.6%. Ross was observed consistently socializing with peers and inserting himself into conversations. Most of the
interactions with peers were social, including having conversations about *Star Wars*, books, and relationship issues. In addition, a female student was observed petting/playing with Ross’s hair on several occasions. On several occasions Ross was observed interacting with peers regarding art content, both helping a student open files and also asking for help from a fellow student. By the end of the semester, Ross seemed to have developed more substantive relationships with peers, having conversations that extended over several days.

When Ross and I talked about his interactions with peers, he discussed social connections as well as art learning. Ross stated that he made some friends with people he talks with outside of the art class, but he seemed uncomfortable talking about this issue in depth. We talked extensively his interactions in art class, including his use of the “critique me” blogging exercise. Ross explained, “Every week we get paired up with someone in the class . . . and we post a positive statement or constructive criticism about their artwork . . . I thought they were good . . . they give good feedback.” I asked the student if he incorporated the comments into his work, and he mentioned that he tried to do this in later artworks. When asked to give an example, he said, “People said to color more and I don’t really use color . . . I tried to do that more.” It was particularly important that the student tried to increase his use of color because of peers’ comments as the teacher had highlighted his use of color as an area of growth over the semester: “I also think color palettes . . . He is using a lot of retro colors in a lot of his stuff, or bolder colors in some of the things he wants to pop out. He is definitely working on those.” It is clear that the interactions with other students regarding his work, through blogging, led to growth in how Ross was using color in his own work.

The teacher and I discussed how Ross’s confidence in his artmaking had led to constructive interactions with his peers.
Interviewer: He seems to enjoy when he is knowledgeable about whatever is going on. Teacher: Anyone does, but he kind of steps up a little bit. . . A lot of kids are very adamant against illustrator, just use the photoshop . . . but he has a good knack for it . . . The two guys who are sitting next to him are always trying to get away from using illustrator . . . and he is always like that is not what this is for and you see him light up when he is . . . that is how you do this and this is how you fix that.

After hearing the teacher describe this, I decided to ask Ross about it to get his perception.

Interviewer: I noticed that a lot of people seem to ask you for advice on things. Student: Yeah I don’t know why that is (laughing).

Interviewer: Do you have any idea why people are asking you for advice?
Student: No, I mean I guess people think that I am good at things. I just pay attention to the teacher.

Interviewer: Do you mind helping people if they ask?
Student: No, it feels kind nice to help someone.

For Ross, the ease of the environment and mastery of the program led to confidence in his own skills, positively enhancing his peers’ perceptions of him and the type of interactions he had and placing him into a mentorship role. Even though this student suffers from anxiety and has been bullied, the teacher admitted that he does not see any struggles with peer interactions in art: “In fact, I have to remind myself sometimes that he does have some anxiety issues . . . but my understanding is that is not always the case in other classes, he isn’t always an extrovert . . . He says stuff like he is a different kind of person in here.”

**Ross positive student-to-teacher interactions.** At the beginning of the semester, Ross’s observed positive student-to-teacher interactions included a range from a low of 0% to a high of 13.3%. On one day, Ross was not observed having any positive student-to-teacher interactions. As Ross spent most of the class time focused on work, there was little need for redirection or behavior correction. On four occasions the student was observed initiating interactions to ask for help and/or clarification. Most of these interactions were focused on how to use the tool of the
computer program. On one occasion the student and teacher worked together for a prolonged period of time (over 10 minutes) to determine why the computer was repetitively crashing. It was determined that the file size was too large. Overall Ross was observed having an established relationship with the teacher in which he felt comfortable joking and asking questions. In interviews at the beginning of the semester Ross expressed that he enjoyed having this teacher and felt comfortable asking questions and seeking advice. The teacher said, “He wants to do better; that’s why he asks questions.”

During observations at the end of the semester, Ross was spending slightly less time interacting positively with the teacher, with a decrease of 4.3%. The observed lowest percentage of positive student-to-teacher interactions was 1.3%, with the highest at 16.6%. The teacher was absent twice during end of semester observations. During these days, the student rebuffed suggestions by the substitute teacher and did not initiate any questions. At the end of the semester, this student had acquired greater proficiency in the computer program and was no longer initiating questions for the art teacher regarding how to use the program.

From the beginning to the end of the semester, there was a drop in the frequency of positive student-to-teacher interactions. Based on the interviews and the observations there were several reasons this occurred. First, at the beginning of the semester the student was learning a new program and many of the questions were regarding how to use tools within the program. By the end of the semester, students had developed familiarity with the program and were able to work independently to complete their projects. The second reason for the decrease became apparent in the interview with the art teacher.

Interviewer: So how do you find that he responds to feedback that you give him?
Teacher: He is almost . . . too receptive to it . . If I say anything, he will take it to heart and that is it. Even if it is a passing whim suggestions. I have
actually pulled back a lot of my feedback to him, because I have noticed that . . because I don’t want him to think I need to do that . . I can give you a suggestion and you could be like ‘oh no, I don’t want to do that and that would be okay’. This was a mistake I made . . I was really like this needs something else, and he ended up scrapping his entire project and starting over.

The teacher went on to describe that he was particularly cognizant of this issue with this student because he was signed up to take AP Digital Art in the next school year, and so he was trying to help the student develop more independence and personal judgment. Until the interview, I had been aware the teacher was consciously trying to interact less with the student and allow him to make more decision on his own. I then reviewed Ross’s interview and found several examples of him describing his reliance on the teacher’s opinion. “I like when he gives feedback because obviously he is experienced, and he knows what he is talking about.” When asked to describe a specific project in which he had responded to the teacher’s feedback, Ross discussed his development of the logo project: “Definitely this one. I did the art tools first, then I did the line of evolution second. He said it was a better concept and that it looked sleeker and so I stuck with that.” I was able to later talk with Ross about the issue of the teacher perhaps having too much influence on the development of his artwork. In response, Ross said, “I think that is a definite problem that I have because I am not very confident in my work.”

Figure 7 plots the daily percentage for Ross of possible moments to be engaged in work and interact positively with peers and the teacher. At the beginning of the semester Ross was observed engaging in the work of the lesson, and throughout the semester his engagement in the work remained consistently high, as long as the teacher was present. On days when the teacher was absent (Post Day 1 and Post Day 3), the student had a significant drop in the percentage of the class he was engaged in work. Additionally, Post Day 7 was the final, which did not take the entire period for the student to complete, so he displayed a drop in engagement. At the beginning
of the semester, Ross interacted with peers minimally, but this rose within the first eight observations and remained higher throughout the post observation period. Ross’s engagement with the teacher decreased from the beginning to the end of the semester, but the reasons for this was purposeful, as discussed by the teacher.

Figure 7. Ross social interactions.

Unlike Picasso and Vinci, Ross was an experienced student in the high-school visual arts program. He had two years of previous experience with the teacher and knew several students in the class. Additionally, Ross spent the majority of his day in inclusive classes, indicating that his identified needs were not impacting his classroom performance to the extent of the other students in this study. For this reason, it was less likely to find a large change in his social interactions from the beginning to the end of the semester. What became apparent in the interviews and when observing the student was how important the student-teacher relationship was for Ross’s success as part of this class. On days when the teacher was absent, the student had a significant drop in the percentage of the class he was engaged in work. The student and teacher described in the interview that they were close, and both enjoyed working with each other. In contrast, the student
rebuffed attempts by the substitute to redirect him towards working. Second, it became apparent
the decrease in positive student-to-teacher interactions was explained by the purposeful actions
of the teacher who was concerned about overly influencing the student’s work. Ross also
confirmed his over-reliance on the teacher’s opinion and lack of confidence in his own
artmaking.

The second important finding from Ross was that as his comfort level with his knowledge
of the program and interacting with peers increased, he was able to take a mentorship role in the
class. Additionally, he clearly felt accepted and comfortable talking about his personal interests
with fellow students. As noted by the teacher and discussed earlier, this behavior was
contradictory with the student’s behavior in his other non-arts classes. The teacher explained,
“They know each other; it is safe here. It is a home base for him.” Finally, although this student
suffered from anxiety and bullying, the interactive nature of a postmodern curriculum in which
he felt valued and successful allowed him to successfully interact with peers and develop
friendships. The social nature of the art room led to Ross benefiting from the use of blogs and
peer feedback in the development of his artwork.

**Student Flay**

Flay is a 16-year-old Caucasian male in his junior year of high school. This student has a
primary IEP classification of ED and spends the majority of his day in self-contained classes for
high-school ED students. This includes language arts, math, science, and physical education.
This student receives support services for social skills and content-area learning. Flay exhibits
avoidance and defiance behaviors typical of students with externalizing ED. He has a history of
absenteeism, walking out of class, acting out in class, defiance of authority figures, fighting, and failing to complete work. For this research, Flay was observed in an inclusive culinary arts class
that he chose to take because of his interest in cooking. Flay said, “I like making food, I figured it [the class] would give me some insight and some guidance on how to do it.”

Foods 1, the culinary arts class Flay took, had 24 students in grades 9-12. The class consisted of 18 male students and six female students. There are no pre-requisites for the class. The class is a semester long and meets every day for 55 minutes. According to the teacher, there were nine students with IEPs, one with a 504 plan, and one English Language Learner. The teacher had been teaching at the school for 12 years and also taught child development classes. The teacher received information regarding accommodations and behavior plans digitally following the start of school. In the interview, the teacher mentioned that she was friends with Ross’s dean and had talked to the social worker a couple of times regarding Ross in her class. When asked to reflect on accommodations that she implements to support students with ED, the teacher stated that in previous semesters when working with ED students from a similar program, “I had to do pep talks as soon as they got into class, or re-direction . . . or making them my assistant to keep them busy or keep them interested. When it is classroom assignment [workbook, reading, or summarizing] it is like pulling teeth.” The teacher explained that the class cooks one to two days a week, depending on the dish. Additionally, students learned about nutrition and food safety, meal planning, basic table etiquette, and cultural variations in food etiquette. The class involved a combination of bookwork, PowerPoint presentations, independent research for presentations of food-borne illnesses, meal planning, labs (cooking), taste testing, and paper-and-pencil tests.

At the beginning of the semester, the student was asked to describe the expectations for behavior. This was important because if students were unclear about expectations for using class time and behavior, then it might affect their performance in class. The student stated that he felt
he knew what sort of behavior was expected, but when asked to describe the roles for working in
groups for cooking, the student was unable to do so. The student said that if a classmate was not
doing his part correctly, “I probably would just be like, hey, go do something else and I will do
this,” stating he would rather fix it himself than work with another student on his mistake. The
teacher was asked to describe the types of social interactions that would occur for peers to
engage with each other and the teacher to engage with students. For cooking, the teacher
explained that each person out of a group of four is assigned a role of either head chef, assistant
chef, organization, or sanitation. These roles rotated each time for lab, but if a student missed the
lab planning day, he/she was not allowed to act as a chef. Outside of cooking, the teacher said
that students were also allowed to work in groups for bookwork. Unlike the visual arts classes,
the teacher does not engage in demonstrations. Instead the teacher interacts with the students
through PowerPoint presentations, giving oral directions for cooking, working one-on-one with
students for bookwork, and providing written feedback on student work.

Flay was observed for a period of seven days at the beginning of the semester and six
days at the end of the semester. Flay was absent or in in-school suspension five times. On two
occasions, new observations were able to be scheduled to makeup for missed days. At the
beginning of the semester Flay was engaged in the work of the lesson 76.19% of the class period.
At the end of the semester Flay was engaged in the work of the lesson 79.68% of the class
period, exhibiting an increase of 3.49%. In regard to what percentage of the period Flay engaged
in positive peer-peer interactions, 26.25% of the time at the beginning of the semester and
32.75% at the end of the semester, exhibiting a difference of 6.5%. Flay interacted positively
with the teacher for 9.73% of the period at the beginning of the semester and 9.13% at the end of
the semester. The positive student-to-teacher interactions from the beginning of the semester to
the end of the semester decreased by .6%. Further exploration of these variables with information from observation field notes, student interviews, and teacher interviews is described in the following paragraphs. Table 8 outlines the mean for each variable at the beginning and end of semester along with difference in percentage.

Table 8
Flay Behavioral Observation Statistics

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<th>Mean Difference</th>
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<td>9.73%</td>
<td>9.13%</td>
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**Flay student engagement.** During the observations at the beginning of the semester, Flay’s observed moments of student engagement varied from a low of 51% to a high of 90%. Because this class is a combination of lecture, bookwork, research, prep and lab days, the student’s engagement varied based on the focus for each day. The student was most engaged on lab days when making food. Flay completed tasks without prompts, such as taking notes, cooking, washing dishes, cleaning up, and putting books away. On a few occasions the teacher gave verbal reminders for Flay to stay on task, which he followed, including directions to take out worksheet packets and cleaning up. At the beginning of the semester Flay exhibited off-task and avoidance behaviors such as putting his head down on the desk and trouble focusing on oral directions. At the beginning of the semester the student stated that his favorite class of the day was culinary arts.

At the end of the semester Flay was spending a slightly greater proportion of the class period engaged in the work of the class, with an increase of 6.5%. The observed lowest
percentage of student engagement was 61.6% and a high of 98.3%. At the end of the semester, Flay was observed filling out a study guide, taking notes, cooking, washes dishes, testing food, and taking a test. Just as at the beginning of the semester, Flay seemed most engaged on days when students were cooking. Flay exhibited a small decrease, from three at the beginning of the semester to one at the end, in observed off-task and avoidance behaviors. The only observed avoidance behavior was a refusal to clean dishes when the rest of his cooking group was not helping.

Flay had a similar response to Vinci and Picasso when asked about his favorite class.

Interviewer: So if you were to think about the schedule and your day, what is your favorite class?
Student: Lunch.
Interviewer: That’s not a class (laughing).
Student: It should be, I don’t really enjoy any of my classes here to be honest.
Interviewer: Is there any class in high school that you have really enjoyed?
Student: Not so far, besides culinary arts. That’s the only one that I have at least admired enough to put forth the effort to try.

In discussing which parts of the class were the most engaging for the student, he showed a clear preference for the hands-on lab days. “Everybody really goes into foods just to cook. That’s what I thought it was going to be. I didn’t think that it was going to be more in-depth than that.”

In describing his avoidance behaviors, the student said, “Sometimes I didn’t want to participate in the work portion of it because I was pretty lazy . . . sometimes I do that [putting head down on desk] because I am just really tired.” I asked the student if he was more tired or willing to put his head down on the days he was doing bookwork, and he admitted that was true. When asked about which part of the class was hardest to pay attention to, the student once again mentioned, “Bookwork and stuff like that. Stuff I didn’t want to do.” In the interview the teacher
confirmed that the student was much more successful with the lab portion of the class. “Where it is hands-on, he is getting more of the connections whether it is relating to the chapter or discussing it; he would rather just do it hands-on . . . bookwork, it was like pulling teeth . . .. Unless you were sitting with him or relating it to something he was interested in, he was not interested.” When asked to compare Flay to others in class, the teacher stated that while most students are excited about the labs, there was a distinct difference between this student and others.

**Flay positive peer-to-peer interactions.** During the observations at the beginning of the semester, Flay’s observed positive peer-to-peer interactions varied greatly from a low of 1.6% to a high of 46.8%. Five of the seven days Flay was observed having positive peer-to-peer interactions from 21.6% to 31.6% of the time. Flay was observed to rarely interact with peers in a social nature. On one occasion when peers were loudly discussing relationship and body issues, Flay seemed embarrassed by the conversation and made no comments. Most of the positive peer interactions revolved around content issues such as discussion about the food making, prep, and clean-up. On several occasions, Flay took on a mentoring role, showing a student how to prep food or use appliances properly. Flay was also observed retrieving and putting away books for his classmates on three occasions.

During observations at the end of the semester Flay was spending more time interacting positively with peers, with an increase of 6.5%. The observed lowest percentage of positive peer-to-peer interactions was 20%, with the highest at 38.8%. Once again Flay was observed to act in a mentoring role by helping peers find answers for a study guide and group members determine the next steps in a cooking lab. Much like at the beginning of class, the student often completed tasks for peers such as cleaning dishes and picking up books. However, Flay did not
seem to have developed any close relationships with students in the class and was not seen interacting with peers in a social manner.

During the interviews, Flay stated he did not know any of the students in the class prior to the start of the school year. Although Flay appeared to develop a familiarity with some of the students, he did not develop any friendships outside of the class. Flay stated, “Towards the end, I probably became more open to talking to other people, but there are still people that I don’t really talk to or associate with because of the personalities. I don’t want to deal with other people’s drama.” Unlike the visual arts classrooms in which students had the freedom to move around the room or interact with students online, the culinary arts teacher mentioned that “there was really no opportunity that he had to interact with other students,” meaning that outside of his cooking group, Flay was not given opportunities to work with the other 20 students in the class. When asked about what skills he learned in working with other students, Flay stated he learned when working in a group how to pick your part, know your role, and perform your objective. Flay mentioned, “It is hard sometimes when you have people working with you that really don’t do anything.” The teacher talked about how this student seemed willing to complete tasks that others in his group were not doing: “Sometimes he will be the last one in his group because he is still cleaning . . . whereas other students in the group will be like I’m done.” Overall it suggests this student learned important aspects of successfully working in a group through his participation in culinary arts class.

The teacher mentioned that one of the students in Flay’s group seemed to have a large influence on the rest of the students.

There was one student, in the beginning, he just didn’t want to do anything, because he knew he was going to get transferred. . . that would bring on the unsuccessfulness in the group. If he (other student) came in there willing to work, everybody worked. If he came
in there not wanting to do anything, that just demotivated everybody else from doing anything. . . After he transferred, I saw more group work, more working together to get things done, in labs or bookwork.

This observation demonstrates how important positive peer modeling and engagement are to the success of peers in a class. For a student such as Flay, who struggles to engage in work he does not like, it is important to put him next to other students who will motivate him.

**Flay positive student-to-teacher interactions.** At the beginning of the semester, Flay’s observed positive student-to-teacher interactions included a range from a low of 1.6% to a high of 18.3%. On three days the teacher interactions involved redirection to get Flay engaged in the work of the lesson. On all three days, he responded positively by starting to work after the teacher left. Several times, when working on study guides or workbooks the teacher checked in with the student to make sure he was on track. Most of these interactions were brief but positive and often led to Flay engaging in work following the interactions.

Flay was spending slightly less time interacting positively with the teacher during the observations at the end of the semester, with a mean decrease of .6%. The observed lowest percentage of positive student-to-teacher interactions was 8.3%, with the highest at 15%. At the end of the semester there were no times the teacher had to engage in redirection of Flay. Additionally, the student started to initiate interactions by asking for help with cooking labs and asking to check out a book to take home. In one interaction the teacher had to correct Flay regarding the amount of cookies on the cookie sheet so they would not spread and bake into one large cookie. Even though the frequency of interactions did not increase, it seems the interactions were less about engaging Flay in work and more about content learning.

The culinary arts teacher was asked to describe her interactions with Flay over the course of the semester.
The first couple of incidences when he shut down or was not in a mood caught me off guard. And then when I would see him in the hallway I would try to talk to him ‘Hey what’s going on? I gave you every single chance you just weren’t giving me anything.’ And he would be like ‘Yeah I know... I just had a bad morning before your class and it just wasn’t happening’. And he was very apologetic; I just think it wasn’t in his control to function after whatever incident happened before my class.

The teacher went on to describe that midway through the semester Flay was struggling to complete any work and skipping class. “So I immediately emailed his dean and social worker and was like ‘What’s going on? What can I do?’ They contacted me immediately and said he has been doing this in all his classes, it is not just you. Something is going on at home, so we are arranging a meeting with his parents.” It was also clear from the interview that the teacher made efforts to reach out to him.

They had a party just for them [ED program], they invited the teachers for it. So we went down there and they were all sitting there, but pretty happy that we came down. Because they are stuck in a hallway where not a lot of visitors go, or not a lot of teachers. . . At first, it was intimidating, because we were like, we never really go down this hallway, but once you are there and you see the kids, they were actually happy that you went there on your own time.

The student stated in his interview that culinary arts was the only class in which he made an effort, and partially this could be due to the fact the teacher made a strong effort to show the student she cared, through stopping him in the halls and visiting him in his other classes. When asked how the student felt about the teacher, he was very vague but mentioned that when the teacher gave suggestions, her suggestions were helpful: “I might not write it down, but I will remember it... it depends on what it is, if it is something important or not.” Unlike the other three students, Flay did not seem to have a particular affinity for this teacher and had chosen not to continue taking culinary arts in the coming semester.

Figure 8 plots the daily percentage for Flay of possible moments to be engaged in work and interact positively with peers and the teacher. At the beginning of the semester Ross was
observed engaging in the work of the lesson, and at the end of the semester his engagement in the work remained consistent, with a slight increase. At the beginning of the semester, Ross’s interactions varied greatly from a low of approximately 0% on Day 4 to a high of almost 50% of Day 8. At the end of the semester Ross’s engagement with peers was more consistent, falling between 20-40% of the observed time. Ross’s engagement with the teacher remained consistently low from the beginning to the end of the semester.

Figure 8. Flay social interactions.

Like Picasso and Vinci, Flay spent the majority of his day in a self-contained setting with other students with ED. Both within each observation and from the beginning to the end of the semester, Flay had the most consistent data of any student in the study. However, it was clear that he was more engaged on days when labs occurred, and this was confirmed by the teacher, who said that Flay learned best through hands-on learning. The teacher commented that even though all students showed a preference for labs, Flay’s lack of engagement in bookwork was outside of the norm for students in culinary arts. Interactions with other students in culinary arts
were limited to labs and the small cooking group, and Flay did not seem to develop friendships as much as the other students in the study. Additionally, students did not have the opportunity for personal choice and expression as in the art classes. It was clear that the teacher made several attempts outside of the class to connect with Flay and help him engage in class. However, there was not a large change in the amount of positive student-to-teacher interactions. Despite the interest that Flay described in cooking at the beginning of the semester, Flay said he would not be continuing culinary arts and would be taking an auto mechanic course off of the school site at a trade training center run by the county.

Implications from the Four Case Studies

In this research, the case study method proved effective through triangulation, that is, collecting of multiple points of evidence. In several instances, the observational data alone would have presented an incomplete or inaccurate description of the events happening in the classroom. This was particularly true with Ross in the area of decrease in positive student-to-teacher interactions. Through the interviews, it was revealed that this decrease was purposeful on the teacher’s part and was an attempt to help Ross develop independence in his artmaking. With Vinci, the information from the field notes illuminated that although there was not a large difference in positive peer-to-peer interactions or student-to-teacher interactions, the nature of these interactions changed to become more substantive and focused on artmaking. By using a case study method organized by each individual experience, the data constructed a more accurate and complete picture of the students’ experiences in inclusive elective classes.

However, the limitations of the case study mean that generalizations cannot be made based on the data available. For instance, the student in culinary arts did not experience a large difference in social interactions from the beginning of the semester to the end, but this cannot be
compared to the art students’ experiences, as it is representative of only one student’s experiences. The commonalities and/or differences among the students will be discussed in the final chapter as part of the findings from this study. However, this should not be seen as a shortcoming, for every student is an individual and, due to the nature of the ED classification, differs dramatically in both the causes of their ED classification and the ways in which it manifests itself. In that sense, these case studies provided a real portrait of the variety of students with ED a teacher might encounter in a public high school environment.

**Statistical Analysis of the Impact of Inclusive Arts Participation for Students with ED**

The second part of this chapter addresses whether high school students with ED who participate in postmodern visual art classes have higher levels of achievement in terms of GPA, class rank, and graduation rates than students with ED who do not participate in visual arts. As mentioned in Chapter 1, students with ED have lower forms of achievement in these areas than any other student group, including those with other disabilities (Jones, Dohrn, & Dunn, 2004; U.S. Dept. of Education, 2005). The following subquestions are addressed in this section:

a. Is there a positive correlation between the number of art classes taken and cumulative GPA for students with ED?

b. Is there a difference in the mean cumulative GPA for students with ED based on the number of art classes taken?

c. Is there a correlation between the number of art classes taken and class rank for students with ED?

d. Is there a difference in the mean class rank for students with ED based upon the number of art classes taken?
e. Is there an association between the graduation status for students with ED based upon the number of art classes taken?

Eighty-four historical transcripts were collected from the two schools that participated in the study. The first school provided 48 transcripts representing all of the students with ED who had graduated or aged out from 2012 to 2015. The second school provided 36 transcripts from all of the students with ED who graduated or aged out from 2011 to 2015. Because the second school had fewer students with this classification in a given year, historical transcripts were collected from a larger number of years to increase the sample size. One transcript from the second school could not be used because it was incomplete. Therefore, 83 (n1=48, n2=35) transcripts were analyzed for this research.

Because the schools used two different methods to calculate GPA, the cumulative GPAs had to be recalculated for the students from the first school. For the first school the cumulative GPA was calculated on a 5.0 scale, where a 5=A, 4=B, 3=C, 2=D, 1=F. Additionally, this school weighted some classes to give more credit for an A in math than driver’s education. The cumulative GPA was calculated using a 4.0 scale, where a 4=A, 3=B, 2=C, 1=D, 0=F. Neither school provided an average GPA for the graduating classes, although they did provide class rankings. Class rankings were calculated into percentages with 1% being the top and 99% the bottom. This allowed for students who graduated in different years to have their rankings compared since each year and school graduated different numbers of students and had different mean GPAs. Additionally, the two schools ran art classes differently, with one school offering semester-long classes and the other offering year-long classes. The number of art classes taken was coded to reflect the number of semesters of inclusive art taken. Therefore, a student who took Art Foundations in both the fall and spring semesters was coded as having taken two art
classes. Art taken at an alternative school or in a self-contained setting was not counted toward the number of art classes taken, since these classes did not provide opportunities for students to interact with non-disabled peers and develop social skills through a social-constructivist learning model. Additionally, it was found in interviews with teachers and by observing these classes that art classes taught in self-contained settings often had a very different focus, emphasizing behavior and therapeutic aspects of artmaking rather than developing art skills and concepts. Student classes in visual arts included Art Foundations, drawing, painting, ceramics, jewelry, sculpture, Advanced Placement (AP) art, digital Art Foundations, Commercial Design, web design, and AP digital art. Information regarding school, the number of art classes taken, type of art class, cumulative GPA, class percentage rank, and graduation status were entered and used for this study.

The methods for analyzing this data included Pearson correlation and one-way ANOVA. Descriptive statistics were run to examine the M, SD, skewness, and kurtosis. Additionally, inferential tests that accompanied the ANOVA were run to examine the normality of distribution for each dependent variable using the Levene test (p>.05) and Shapiro-Wilk test (p>.05). Pearson’s correlation was calculated to determine if there was a significant (p<.05) and positive relationship between the independent and dependent variables. Second, an ANOVA was used to determine if there was a difference (p<.05) between the mean cumulative GPA of students who did not take art and students who took one, two, or three semesters or more of art. Another ANOVA test was used to determine if there was a difference between the mean class ranking of students who did not take art and students who took one, two, or three semesters of art. Due to the low number of students who did not graduate, the planned tests of ANOVA and chi-square could not be used to analyze graduation rates. Therefore, cross-tabs descriptive statistics were
run to analyze the number of students who graduated versus those who did not based on participation in visual arts classes. Finally, the data from the two schools in this study that focused on students with ED were compared to a previously published data analysis of national statistics for students who had low and high arts involvement.

**Descriptive Statistics for the Variables**

In this section descriptive statistics regarding the four variables are analyzed. The independent variable for this data analysis was the number of art classes taken by students. When the data were originally entered, there was a wide range in the number of art classes taken. Students participated in anywhere from zero to ten semesters of art (see Table 9). The variable is positively skewed. However, due to the low number of students in each category, it was not possible to validly compare the mean GPA for students who had taken 3, 4, 5, 6, 7, or 10 semesters of art.

<table>
<thead>
<tr>
<th>Number of Art Classes Taken</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>0</td>
<td>32</td>
<td>38.6</td>
<td>38.6</td>
</tr>
<tr>
<td>1</td>
<td>17</td>
<td>20.5</td>
<td>20.5</td>
<td>59.0</td>
</tr>
<tr>
<td>2</td>
<td>17</td>
<td>20.5</td>
<td>20.5</td>
<td>79.5</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>6.0</td>
<td>6.0</td>
<td>85.5</td>
</tr>
<tr>
<td>4</td>
<td>6</td>
<td>7.2</td>
<td>7.2</td>
<td>92.8</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
<td>2.4</td>
<td>2.4</td>
<td>95.2</td>
</tr>
<tr>
<td>6</td>
<td>2</td>
<td>2.4</td>
<td>2.4</td>
<td>97.6</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>1.2</td>
<td>1.2</td>
<td>98.8</td>
</tr>
<tr>
<td>10</td>
<td>1</td>
<td>1.2</td>
<td>1.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>83</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
Therefore, the data were re-coded, and all students who took three or more semesters of art were placed into a single category, making larger and more equivalent groups. The variable is still positively skewed, with most students having taken no art classes. Thirty-two students had never taken an inclusive art class. Seventeen students had taken an inclusive art class one, two, or three or more times.

Three dependent variables were used for separate analysis: GPA, class ranking, and graduation status. GPA was calculated on a 4.0 scale, and all 83 students had a reported cumulative GPA. This variable was positively skewed with $M=2.259$, $SD=.564$, and a kurtosis of -.117. Out of the 83 students, 28 students had cumulative GPAs below a 2.0 (C average). The majority of students, $n=36$, had a cumulative GPA between 2.0 and 2.5; 13 students had a cumulative GPA between 2.5 and 3.0; and six had cumulative GPAs of a 3.0 (B average) or higher (see Figure 9).

![Figure 9. Frequency distribution of cumulative GPA.](image-url)
Because the schools were unable to provide a mean GPA for each year, each student’s class rank was calculated to determine the students’ cumulative GPAs relative to their classmates. Out of the 83 students, 5 did not graduate and 14 did not have class rankings. Students who spent the last semester of their high school in an alternative school site were not assigned a class ranking. Therefore, students from these two groups could not be included as part of this statistical test. Out of the 64 remaining students, the frequencies were positively skewed with M=77.95% and SD= 22.964 and a kurtosis of .559, indicating these data are normally distributed. Only 12 of the 64 students who graduated ranked in the top 50% of their graduating class (see Figure 10).

![Figure 10. Frequency distribution for class rank.](image)

The third dependent variable for this study was graduation status. Out of 83 students, 78 graduated and 5 did not (see Table 10). This variable is negatively skewed, with 94% of the sample having graduated. Six percent of the population did not graduate. However, the rate of
graduation is lower than the overall graduation rate of 99% for one school and 98% for the other school (IIRC, 2016).

Table 10

*Frequency Distribution for Graduation Status*

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid Graduated</td>
<td>78</td>
<td>94.0</td>
<td>94.0</td>
<td>94.0</td>
</tr>
<tr>
<td>Did not graduate</td>
<td>5</td>
<td>6.0</td>
<td>6.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>83</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

The analysis of the dependent variables of GPA and class rank showed they were both positively skewed and that students were more likely to have lower than the median GPA or class rank. The graduation rate of students with ED was positively skewed. This analysis demonstrates that this sample is reflective of literature that suggests this population of students has lower levels of academic achievement than their peers in areas related to class rank and graduation rate. In the following sections the relationship between the independent variable, number of art classes taken, and the dependent variables will be analyzed.

**Relationship Between Mean Cumulative GPA and Number of Art Classes Taken**

The follow section examines the relationship between mean cumulative GPA and the number of art classes taken through exploration of the correlation of these two variables and ANOVA. Two research questions will be addressed in this section. Research Question 3a asks, “Is there a positive correlation between the number of art classes taken and cumulative GPA for students with ED?” The null hypothesis states that the correlation is not positive, while the alternative hypothesis states there is a positive relationship, meaning that as students take more
art classes, their GPAs will increase, or as their GPAs increase, they are more likely to take more art classes.

\[ H_0: \rho \leq 0 \quad \quad \quad H_1: \rho > 0 \]

A Pearson’s product-moment correlation was run to determine if there was a positive relationship between the number of art classes taken and cumulative GPA (see Table 11). Preliminary analysis showed the relationship was linear, but not all variables were normally distributed as assessed by the Shapiro-Wilk test (p > .05). Cumulative GPA was found to be normally distributed (p=.157), but the number of art classes taken was not (p<.005). This was not surprising, as most students had not taken art and very few students took 3, 4, 5, 6, 7, or 10 semesters of art. There was a statistically significant, positive, weak relationship between the number of art classes taken and cumulative GPA, \( r=.207, n=83, p=.03; \) 4.2% of the variance in cumulative GPA was accounted for by the number of art classes taken and vice versa. The population correlation was positive and the alternative hypothesis, \( H_1: \rho > 0, \) was accepted. A scatterplot in Figure 11 summarizes the results.

<table>
<thead>
<tr>
<th>Table 11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correlation Between the Number of Art Classes Taken and Cumulative GPA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Zscore: Cum GPA</th>
<th>Pearson Correlation</th>
<th>Zscore: Cum GPA</th>
<th>Number of Art Classes Taken</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (1-tailed)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.207*</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.030</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>83</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Art Classes Taken</td>
<td>Pearson Correlation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.207*</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.030</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>83</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.05 level (1-tailed).
In the scatterplot, it is apparent that there are several outliers, including one student who took one semester of art and had a high GPA of 3.9158. Additionally, there was one student who took three or more semesters of art and had a low GPA of 1.34. However, in looking at the scatterplot it is apparent that the groupings of GPA is higher and less spread out for the students who took three or more semesters of art than any other group of students.

Research Question 3b, asks “Is there a difference in the mean cumulative GPA for students with ED based upon the number of art classes taken?” The null hypothesis for this states that the mean GPA of each group of students is equal. The alternative hypothesis for this states that at least one group of students has a mean that is different from another.

$H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4 \quad H_1: \mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4$

Using the Levene test of homogeneity of variance, the cumulative mean GPA of the four groups of students (never taken art, one semester of art, two semesters of art, three or more semesters of art) was not found to be significant at $p=.584$. Because $p \geq .05$, the homogeneity of
variances was roughly equal and the assumption of the population variances being equal was met, allowing for further data analysis to occur. The mean for each group was calculated along with the standard deviation (see Table 12). Out of 83 students, 32 did not take inclusive visual arts classes; this group of students had a mean cumulative GPA of 2.178. Students with one semester of art had the lowest mean cumulative GPA of 2.165, which was a decrease of .013 from the students who had not taken art. While it is hard to know why this group had the lowest GPA, in looking over the transcripts, it seemed that many of these students had not passed a language class and may have been placed in visual arts to try and achieve a language credit. Seventeen students took two semesters of inclusive visual arts and showed an .08 increase in their GPAs than students who had never taken art, for a cumulative mean GPA of 2.258. Another 17 students took three or more semesters of art, and this group had a positive difference of .329. Both the group of students who took two semesters of art and the group of students who took three or more semesters of art showed a positive increase in their mean GPA.

Table 12
CUM GPA Means for Number of Art Classes Taken

<table>
<thead>
<tr>
<th>Number of Art Classes</th>
<th>Mean</th>
<th>N</th>
<th>% of Total N</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>.00</td>
<td>2.178</td>
<td>32</td>
<td>38.6%</td>
<td>.5754</td>
</tr>
<tr>
<td>1.00</td>
<td>2.165</td>
<td>17</td>
<td>20.5%</td>
<td>.5745</td>
</tr>
<tr>
<td>2.00</td>
<td>2.258</td>
<td>17</td>
<td>20.5%</td>
<td>.5538</td>
</tr>
<tr>
<td>3.00</td>
<td>2.507</td>
<td>17</td>
<td>20.5%</td>
<td>.5123</td>
</tr>
<tr>
<td>Total</td>
<td>2.259</td>
<td>83</td>
<td>100.0%</td>
<td>.5638</td>
</tr>
</tbody>
</table>

According to Field (2009), “The independent means t-test is used when there are two experimental conditions and different participants were assigned to each condition” (p. 325). The \( t \) test can be used to determine when two group means are different, but because the \( t \) test would have to be repeated three times, the risk for Type 1 errors increases (Gravetter & Wallnau, 2008).
However, using a one-way ANOVA test with one alpha level to evaluate the mean differences “avoids the problem of an inflated experimentwise alpha level” (Gravetter & Wallnau, 2008, p. 340). Field argues that when samples come from the same population, then we expect their means to be roughly equal. It is possible for their means to differ by chance; however, large differences are expected to occur very infrequently. As the observed difference between the sample error mean becomes larger, the more confident we become that the null hypothesis is incorrect and the mean difference is a result of the experimental manipulations. In the case of this study, an ANOVA was run to compare students who had not taken art (n=32) with students with one semester of art (n=17), two semesters of art (n=17), and three semesters of art (n=17). Mean GPA decreased from no art (M=2.178) to one semester of art (M=2.165), but then increased for two semesters of art (M=2.258) and three semesters of art (M=2.507). However, the differences among these three groups was not statistically significant $F(3,79)=1.508$, $p=.219$. Therefore, the null hypothesis, $H_0: \mu_1=\mu_2=\mu_3=\mu_4$, failed to be rejected, and there is not a significant effect on cumulative GPA by the number of art classes taken (see Table 13).

Table 13

ANOVA for Cumulative GPA and Number of Art Classes Taken

<table>
<thead>
<tr>
<th>Cum GPA</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>1.412</td>
<td>3</td>
<td>.471</td>
<td>1.508</td>
<td>.219</td>
</tr>
<tr>
<td>Within Groups</td>
<td>24.653</td>
<td>79</td>
<td>.312</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>26.065</td>
<td>82</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This data passed the Levene test of normalcy, making it highly reliable for this analysis. It appears that there is a small significant correlational relationship between participation in visual arts and cumulative GPA. Participation in visual arts can be used to positively predict
cumulative GPA for this data set and vice versa. It is also clear that taking one semester of art classes has little impact on students' GPA. Instead the largest differences can be found for students who took three or more semesters of inclusive visual arts education, suggesting that sustained engagement in the arts is correlated to general academic success. However, for this sample, it cannot be said that there is a statistically significant difference in the mean GPA for groups of students who took zero, one, two, and three semesters of inclusive art.

**Relationship Between Number of Art Classes Taken and Class Ranking**

The following section examines the relationship between class rank and the number of art classes taken through exploration of the correlation of these two variables and ANOVA. By examining class rank, along with GPA, information about the performance of this particular group of students, compared to their peers is illustrated. RQ3c asks, “Is there a positive correlation between the number of art classes taken and class rank for students with ED?” The null hypothesis states that there is no population correlation; the alternative hypothesis states there is a negative relationship, meaning that the as the number of art classes a student takes increase, the class rank increases.

\[ H_0 : \rho \geq 0 \quad H_1 : \rho < 0 \]

Analysis of the data regarding class ranking was completed to explore the success of this group of students versus the overall schools’ populations. Because the schools did not provide a mean GPA for each year, examining class ranking provided contextual information regarding GPA. However, the sample size had to be reduced for this analysis. Out of the 83 students with complete transcripts, class rankings were not provided for two groups of students. Students who did not graduate were not given a class ranking. Additionally, students who spent the last semester of their high school experience at an alternative school site were not given a class
The mean GPA of students who did not graduate (n=5, M=2.194) and the mean GPA of students who spent the last semester at an alternative school (n=14, M=2.184) were lower than the mean GPA of students who graduated from the public school (n=64, M=2.279). Therefore, the sample analyzed for this section is representatively higher performing than the entire population of ED students from this school.

This group of students with ED exhibited low levels of academic achievement, with the 81% of the sample ranked in the bottom 50% of their class and another 6% not graduating high school. This aligns with research on this population that suggests students with ED struggle to achieve academically (Jones, Dohrn, & Dunn, 2004; U.S. Dept. of Education, 2005; Wagner et al., 2005). A bivariate Pearson’s correlation coefficient test was run to determine if the number of art classes taken positively correlated with class ranking. Preliminary analysis showed the relationship to be linear, but neither variable was normally distributed as assessed by the Shapiro-Wilk test (p > .05) for number of art classes taken and class rank, p =000. This was not surprising since most students had not taken art and very few students took 3, 4, 5, 6, 7, or 10 semesters of art. The histogram of class ranking showed a positively skewed distribution with several outliers. A small negative correlational relationship exists between the number of art classes taken and class ranking, r=-.223, n=64, p=.038 (Table 14). The relationship between the number of art classes taken and class rank represents 5% of the variability. This means that as the number of art classes taken increased, the class rank percentage decreased (which is a higher ranking since 1% is the top of the class, as explained by the schools providing the data). The population correlation was negative and the alternative hypothesis, H₁: ρ < 0, was accepted. A scatterplot summarizes the results (Figure 12).
Table 14

Correlation Between the Number of Art Classes Taken and Class Rank

<table>
<thead>
<tr>
<th>Correlations</th>
<th>Threecormore</th>
<th>Class Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threeormore</td>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (1-tailed)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>83</td>
</tr>
<tr>
<td>Class Rank</td>
<td>Pearson Correlation</td>
<td>-.223*</td>
</tr>
<tr>
<td></td>
<td>Sig. (1-tailed)</td>
<td>.038</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>64</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.05 level (1-tailed).

Top class rank is 1% and 100% represents the lowest.

Figure 8. Scatterplot of Linear Relationship Between Number of Art Classes Taken and Class Rank.

In the scatterplot (Figure 12), it is apparent that there are many outliers, in fact more than were apparent in the cumulative GPA scatterplot. The eight outliers are as follows: one student who took no semesters of art, two students who took one semester of art, three students who took
two semesters of art, and three students who took three or more semesters of art. In looking at the scatterplot it is apparent that the grouping of class rank is lower (which is better) and less spread out for the students who took three or more semesters of art than any other group of students.

Research Question 3d asks, “Is there a significant difference in the mean class rank for students with ED based upon the number of art classes taken?” The null hypothesis for this states that the mean class rank of each group of students is equal. The alternative hypothesis for this states that at least one group of students has a mean that is different from another.

\[ H_0: \mu_1=\mu_2=\mu_3=\mu_4 \quad H_1: \mu_1\neq\mu_2\neq\mu_3\neq\mu_4 \]

Using Levene’s test of homogeneity of variance, the class rank of the four groups of students (never taken art, one semester of art, two semesters of art, three or more semesters of art) was not found to be significant at \( p=.582 \). Because \( p \geq .05 \), the homogeneity of variances was roughly equal, the assumption of the population variances being equal was met. The mean for each group was calculated along with the standard deviation (Table 15). In the case of this study, the ANOVA was used to determine if the change in the mean class rank was statistically significantly different. An ANOVA was run to compare the class ranking of students who had not taken art (n=23) with students with one semester of art (n=13), two semesters of art (n=14), and three semesters of art (n=15). Class ranking decreased by 4.38% from no art (M=71.16) to one semester of art (M=75.34), but then increased for two semesters of art (M=71.73). Students who took three semesters of art (M=61.12) had an increase of 10.04% in their class ranking. The differences among these four groups was not statistically significant \( F(3, \ 61)=1.011, \ p=.394 \) (Table 16). Therefore, the null hypothesis, \( H_0: \mu_1=\mu_2=\mu_3=\mu_4 \), failed to be rejected and there was not a statistically significant effect on class rank by the number of art classes taken.
Table 15
Descriptive Statistics for Class Ranking

<table>
<thead>
<tr>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
<th>95% Confidence Interval for Mean</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>71.1604</td>
<td>24.98772</td>
<td>5.21030</td>
<td>60.3549</td>
<td>81.9659</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>75.3377</td>
<td>21.49303</td>
<td>5.96109</td>
<td>62.3496</td>
<td>88.3258</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>71.7264</td>
<td>23.41146</td>
<td>6.25698</td>
<td>58.2091</td>
<td>85.2438</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>61.1233</td>
<td>21.08219</td>
<td>5.44340</td>
<td>49.4484</td>
<td>72.7983</td>
</tr>
<tr>
<td>Total</td>
<td>65</td>
<td>69.8015</td>
<td>23.13346</td>
<td>2.86935</td>
<td>64.0693</td>
<td>75.5337</td>
</tr>
</tbody>
</table>

Table 16
ANOVA for Class Ranking and Number of Art Classes Taken

ANOVA

<table>
<thead>
<tr>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>1622.450</td>
<td>3</td>
<td>540.817</td>
<td>1.011</td>
</tr>
<tr>
<td>Within Groups</td>
<td>32627.582</td>
<td>61</td>
<td>534.878</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>34250.032</td>
<td>64</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It appears that there is a small significant correlational relationship between participation in visual arts and class rank. Participation in visual arts can be used to predict class rank for this data set and class rank can be used to predict the number of art classes taken. This data had a large number of outliers which may have influenced the ability to find statistically significant results with ANOVA analysis. It is also clear that taking one semester of art classes has little impact on students’ class rank. Instead, the largest mean differences can be found for students who took three or more semesters of inclusive visual arts education, suggesting that sustained engagement in the arts is correlated to general academic success. However, for this sample, it
cannot be said that there is a significant difference in the class rank for groups of students who took zero, one, two, and three semesters of inclusive art.

**Association Between Number of Art Classes Taken and Graduation Status**

In the analysis of this variable it was demonstrated that the population of ED students at these two schools had lower rates of graduation than the overall graduation rate for the school. Research Question 3e asks, “Is there an association between the graduation status for students with ED based upon the number of art classes taken?” This analysis will look at the association between the number of art classes taken and graduation rates.

H₀: For students with emotional disabilities, there is no association between the number of art classes taken and graduation rates.

H₁: For students with emotional disabilities, there is an association between the number of art classes taken and graduation rates.

For this population, 83 transcripts were provided. Out of the 83 students, 5 did not graduate and 78 graduated. The drop-out rate for students who did not take art was 3.1%. The drop-out rate was highest for students who took one semester of art at 11.8%. For both groups of students who took two semesters of art and three or more semesters of art, the drop-out rate was 5.9% (Table 13). Combined, the drop-out rate for any students who participated in art was 7.8%, compared with 3.1% for students who did not participate in art. In comparison, the overall drop-out rate was 1% for one high school and 2% for the other high school (IIRC, 2016). For all students with ED, regardless of participating in visual arts zero, one, two, or three or more semesters, the rate exceeded the overall drop-out rate reported by both of the schools. The low cell counts for students not graduated violate the assumptions for a chi-square test that requires a minimum expected frequency of five in at least 75% of cells (Gravetter & Wallnau, 2008). The
SPSS output shows that the value of \( x^2 = 1.466 \), that the degrees of freedom on which this was based were 3, and that it was not significant at \( p = 0.690 \). We failed to reject the null hypothesis and there appeared to be no association between the number of art classes taken and graduation status (see Tables 17 and 18).

Table 17

Cross-Tabulation for Number of Art Classes Taken and Graduation Status

<table>
<thead>
<tr>
<th>Graduation Status</th>
<th>Number of Semesters of Art Taken</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>not graduated</td>
<td>1a</td>
<td>2a</td>
</tr>
<tr>
<td>Expected Count</td>
<td>1.9</td>
<td>1.0</td>
</tr>
<tr>
<td>% within Three or more</td>
<td>3.1%</td>
<td>11.8%</td>
</tr>
<tr>
<td>graduated</td>
<td>31a</td>
<td>15a</td>
</tr>
<tr>
<td>Expected Count</td>
<td>30.1</td>
<td>16.0</td>
</tr>
<tr>
<td>% within Three or more</td>
<td>96.9%</td>
<td>88.2%</td>
</tr>
<tr>
<td>Total</td>
<td>32</td>
<td>17</td>
</tr>
<tr>
<td>Expected Count</td>
<td>32.0</td>
<td>17.0</td>
</tr>
<tr>
<td>% within Three or more</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Each subscript letter denotes a subset of Three or more categories whose column proportions do not differ significantly from each other at the .05 level.

Table 18

Chi-Square Tests for Number of Art Classes Taken and Graduation Status

<table>
<thead>
<tr>
<th>Chi-Square Tests</th>
<th>Value</th>
<th>df</th>
<th>Asymptotic Significance (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>1.466a</td>
<td>3</td>
<td>.690</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>1.359</td>
<td>3</td>
<td>.715</td>
</tr>
<tr>
<td>Linear-by-Linear Association</td>
<td>.113</td>
<td>1</td>
<td>.736</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>83</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is 1.02.
Conclusion

This chapter presented snapshots of both the individual and the group experience in art education for students with emotional disabilities. The case studies led to insights regarding student engagement in learning, perceptions of student engagement and interest, the student-teacher relationship, student interactions with peers, and pedagogical environments that supported student interactions and learning. While the four case studies illustrated that the most significant changes in social interactions occurred for each student in his first semester of inclusive art, the transcript data suggest a correlational relationship among participation in inclusive visual arts and an increase in cumulative GPA and class rank, especially through sustained engagement in the arts with two, three, or more art classes taken. Further analysis of the findings and connections to the literature will be discussed in Chapter 6.

The historical transcript data analysis indicated correlations between inclusive visual arts participation and cumulative GPA. A positive increase was found in mean cumulative GPA and class ranking for students who participated in two and three or more semesters of art. Interestingly, out of the four groups of students, students who participated in one semester of art had the lowest GPA, class ranking, and graduation percentage. However, no relationship was found between participation in inclusive visual arts and graduation status for this sample.

There are several limitations in this research. The statistical analysis was limited by the number of students with ED who had graduated from these schools. Using the program G*Power, which in an a priori method and should have been calculated prior to data collection, it was determined that to find statistically significant results, a larger sample size was necessary for the ANOVA and chi-square test. For a one-way ANOVA model with three levels, an effect size $F$ of .25, alpha <$.05$, and power=.80; a minimum of $n=159$ is needed to control for Type II error.
For a chi-square model with an effect size phi of .3, alpha < .05, and power=.80, a minimum of n=122 is needed. However, due to the low number of students not graduated in this case, the sample size would need to be increased until each cell count met the minimum of five (see Appendix P for screenshots from G*Power). However, given the lack of available data on students with ED and art education, the correlations and examination of differences in mean GPA, class rank, and graduations status provides an excellent starting point to examine the impact of arts education.

In the next chapter, data more closely related to art education are presented. Chapter 5 focuses on art learning, curriculum, and pedagogy. Three case studies are presented that focus solely on the experience of the three students who participated in art education. Images of student artwork are presented with information from the field observations, student interviews, and teacher interviews. Additionally, the artwork has been evaluated by a panel to determine student growth. In the sixth chapter of this dissertation, the data analysis from Chapters 4 and 5 are combined and connected back to the research questions, conceptual framework, and literature.
CHAPTER 5

DEVELOPMENT OF ART SKILLS AND CONCEPTS ANALYSIS

This chapter examines student learning in the areas of art skills and concepts for students with ED in inclusive art classrooms. Data relevant to the question, “To what extent do postmodern visual arts classes help high school students with ED develop art skills and concepts over the course of a semester?” are presented in this chapter. Data presented in this chapter include student artwork, observations, student interviews, and teacher interviews. Artwork was collected for each student, but the number of samples varied based on the curriculum and student’s engagement. Students were observed for a period of eight days at the beginning of the semester and eight days at the end of the semester. Although these observations were focused on social interactions, valuable information regarding pedagogy and student learning was also collected and is presented in this chapter. The students and teachers were interviewed at the beginning and end of the semester. These interviews provided insight regarding the teachers’ plans for curriculum and pedagogy, student performance and growth, and challenges that occurred. Additionally, the student interviews provided insight regarding reasons for taking art classes, development of artwork, accomplishments, and future plans.

The first part of this chapter is broken into individual case studies that examine art learning for three students with ED. The scatterplots, images of student work, information from the observations, and the findings from interviews were compiled to create the individual case studies. Each study highlights the ways in which the student grew and the pedagogical and curricular approaches that supported their growth. The students are presented in order of their
experience in inclusive visual arts education classes: Picasso in his first semester of art, Vinci in his second semester, and finally Ross in his third semester of art.

In the second part of the chapter, patterns of growth are compared for the three case studies, looking for similarities and differences between student learning. This section draws a picture of the patterns of learning for these three students with ED as they developed art skills in an inclusive environment. Finally, conclusions regarding the individual case studies and analysis are presented.

**Scoring of Student Artwork**

Twenty-four images of student artwork, from three students, were assembled into packets for review. The work was divided by medium, but the artwork was mixed randomly to reduce bias for the individual student’s work. Student artwork was independently rated by four art teachers with experience teaching in the high school classroom. Using a rubric developed by the NIU Division of Art and Design Education, each artwork was rated in three categories: technical skill, formal qualities, and conceptual complexity. The raters were given a copy of the rubric with descriptors for each level (Appendix I). Additionally, the raters were given a benchmark image system that was developed through the pilot study described in Chapter 3 (Appendix J).

In reviewing the scores, there were only two instances in which the raters had a discrepancy of more than one point in their ratings of the work. These two scores were re-presented to the raters, and they discussed their perspectives to remediate their scores to an agreed-upon score. Using Pearson’s correlation, initial testing showed that the correlation of scores was statistically significant between all four raters, p < .01. Additionally, for seven of the eight rater relationships, the effect size was large because r > .50. The relationship between rater
3 and 4 was slightly lower at $r = .493$. Raters 3 and 4 were found to have the highest correlation, $r = .820$. See Table 29 for further details.

Table 19

Correlations Between the Rater’s Scores of Student Artwork

<table>
<thead>
<tr>
<th></th>
<th>Rater 1</th>
<th>Rater 2</th>
<th>Rater 3</th>
<th>Rater 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rater 1 Pearson Correlation</td>
<td>1</td>
<td>.586**</td>
<td>.615**</td>
<td>.807**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>72</td>
<td>72</td>
<td>72</td>
<td>72</td>
</tr>
<tr>
<td>Rater 2 Pearson Correlation</td>
<td>.586**</td>
<td>1</td>
<td>.493**</td>
<td>.740**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>72</td>
<td>72</td>
<td>72</td>
<td>72</td>
</tr>
<tr>
<td>Rater 3 Pearson Correlation</td>
<td>.615**</td>
<td>.493**</td>
<td>1</td>
<td>.820**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>72</td>
<td>72</td>
<td>72</td>
<td>72</td>
</tr>
<tr>
<td>Rater 4 Pearson Correlation</td>
<td>.807**</td>
<td>.740**</td>
<td>.820**</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>72</td>
<td>72</td>
<td>72</td>
<td>72</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed).

Landers (2015) points out that Pearson’s correlation is not an ideal method of analysis because it is best used in situations when you have only two raters. However, interclass correlations allow for an analysis of relationships between multiple raters of quantitative data. Interclass correlations (ICC) (2,4) were calculated using a two-way random model with both single and average measures. When using the interclass correlation for average measures, $r = .878$. For these data, 88% of the score variability for the mean of the four raters represents the underlying construct (see Table 20).
Table 20

Interclass Correlation Coefficient for the Four Raters’ Scores of Student Artwork

<table>
<thead>
<tr>
<th></th>
<th>95% Confidence Interval</th>
<th>F Test with True Value 0</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intraclass Correlation$^b$</td>
<td>Lower Bound</td>
</tr>
<tr>
<td>Single Measures</td>
<td>.643$^a$</td>
<td>.541</td>
</tr>
<tr>
<td>Average Measures</td>
<td>.878</td>
<td>.825</td>
</tr>
</tbody>
</table>

Two-way random effects model where both people effects and measures effects are random.

a. The estimator is the same, whether the interaction effect is present or not.

b. Type C intraclass correlation coefficients using a consistency definition. The between-measure variance is excluded from the denominator variance.

Analysis of the raters’ scores indicates that they were highly correlated and reliable. Therefore, the four raters’ scores were averaged for each category: formal, technical, and conceptual. Each student’s table with the scores is displayed in their individual case studies below. The number of art pieces collected for each student varied based on the amount of work the students completed and the number of assignments teachers gave in the semester. Analysis of student growth in art learning accompanies the scatterplot. Samples of the students’ work are included in the individual case studies, but the full collection of student work can be seen in Appendix K.

Case Studies

Three case studies are presented to illustrate the students’ learning in the arts. As discovered in the pilot study, students with ED often entered art classes with below-grade-level motor and observational drawing skills. The teachers noted that students with ED are often not given opportunities to participate in art when they are younger because they miss a significant amount of school due to behavioral issues. Therefore, when students are in a school setting, the focus is often on providing support in academic areas. One teacher noted that her high school
students did not know how to cut a circle out of a piece of paper by cutting in from the edge of the paper.

As discussed in the previous chapter, data related to art learning are organized to provide a comprehensive picture for each student. For confidentiality, the students picked names for themselves based on artists. The three students who participated in visual arts are presented first in the order of least experienced to most experienced in art. In this way, the case studies paint a picture of the different ways in which the students are developing artmaking skills based on their previous experience, or lack thereof, in art.

**Picasso**

Picasso is an 18-year-old Caucasian male in his senior year of high school. For this research, Picasso was observed in an inclusive Art Foundations classroom, which he chose to take to improve his fine motor skills and drawing skills. Picasso stated that he wanted to learn to draw better “because I grew up with very bad fine motor skills and my handwriting isn’t good either, so drawing might be a good way to improve those.” Picasso had previously taken a self-contained Art Foundations class for students with emotional disabilities, during which they mainly did watercolor projects. The art teacher from his previous class stated that he did very poorly but did not fail the class. The student stated that he did not enjoy that class, but he decided to take the inclusive Art Foundations class in his senior year because he wanted something more hands-on. The student stated that he did not make art outside of school and had little experience with art, although his favorite artist is Pablo Picasso (which was the inspiration for his pseudonym) and his favorite style of art is surrealism. This student was also taking a Digital Photography class in the same semester, which he said he enjoyed, “since I am more of a computer person, and we are always working on computers.” The teacher of the art foundation
class confirmed that students were not required to take any classes prior to participation in Art Foundations. Additionally, she stated the district required one semester of art at the middle-school level and did not offer art at the elementary level, so most of the students were coming in with little or no experience.

During the beginning-of-the-semester interview, the teacher and I discussed the curricular and pedagogical approaches that would be implemented in Art Foundations. When asked to describe her approach to art education, the teacher stated, “I view it as a way to not only teach students the basic skills and techniques but also to make them better, more well-rounded people. I think when you experience a variety of things, you are more open to changes.” The teacher also listed the objectives of the class as an introduction to different media, basic techniques, art elements, and principles. The teacher said that many of the students were interested in drawing realistically, so they do a variety of assignments to help develop these skills. Lessons would focus on conceptual development in the second semester of the class (after the observations were completed). Out of the three students observed, this class was the most traditional. In contrast, the pedagogy and curricula in Digital Photography embraced many philosophies of a postmodern approach. Learning supports for students included demonstrations, image presentations, one-on-one tutoring, and formative and summative critiques. Because Picasso is also in the photography class, the teacher mentioned that they use blogs as part of the class to provide peer feedback.

Figure 13 illustrates the average rankings of each image. This student was in both an Art Foundations class and a Digital Photography class. Eight images from Art Foundations and three images from Digital Photography were collected. Because observations occurred in the Art Foundations class, more images from this class were collected. However, several sample artworks from the Digital Photography class were also collected. In Art Foundations, the
semester curriculum was divided into smaller units. Midway through the semester, as the curriculum switched to new art skills and concepts, the artwork scores dropped. Images from weeks 1 to 3 were focused on the use of line. Images from Weeks 7, 8, 12, and 14 focused on form. The Week 15 image was part of the final exam and focused on the use of line and form. Although this image was collected as part of the study, the scores were not used to measure growth because the students were under a short time limit with a highly-directed task. The first digital image, from Week 3, was focused on teaching how to use Adobe Photoshop tools such as layers, filters, erasers, masks, and paintbrushes to make a composite image. The digital images from Week 10 and Week 14 represent applications of those tools to photographs the student took with his own digital camera.

![Picasso Artwork Collected Over 1 Semester](image)

**Figure 13:** Scores of artwork created by Picasso.

From the beginning to the end of the semester Picasso’s scores increased in all three areas (Figure 13). Picasso’s artwork grew the most in terms of conceptual complexity, starting at a 1 in
Week 1 and ending at a 2.75 in Week 14. The scores of his artwork also increased in the area of formal concepts starting at a 1 in Week 1 and ending at a 2.25 in week 14. The area of lowest growth was in technical skills. At the beginning of the semester Picasso’s artwork scored a 1 and at the end of the semester all areas of his work showed at least one level of growth.

The scores of all three digital images, shown in Figure 13, were as high or higher than the end-of-semester scores for Art Foundations. Similar to the growth patterns in Art Foundations, Picasso showed the most growth in the area of conceptual complexity starting at Week 3 with a score of 2.5 and ending Week 14 with a score of 4.5. The student’s works were scored to show a similar pattern of growth for formal qualities, with a score of 2.25 in Week 3 and a score of 3.75 in Week 14. The area with the least amount of growth was technical skills; however, this might be because the work scored highest in this area in Week 3. The technical skill score from Week 3 was 3 and at Week 14 was 3.5. In looking at the patterns of student learning, this student showed growth in all three areas of technical skills, formal qualities, and conceptual complexity in both the traditional foundations class and the Digital Photography class over the period of one semester.

As part of the Art Foundations class, the teacher was required to implement pre- and posttests to measure student growth. As a district, the art teachers devised a simple drawing task in which students were handed three cups and told to arrange and draw them on the page. At the end of the semester this task was repeated by the students. Figure 14 is Picasso’s drawing from the beginning of the semester. In looking at the drawing, this image is far below grade-level expectations for a high school student, and the raters confirmed this by scoring the image at a 1 in all three areas. At the beginning of the semester, the teacher commented that she noticed “it is hard for him to be precise . . . there are a lot of lines going on, a lot of marks . . it is with a
purpose, but not refined.” The teacher also commented that his IEP stated his writing can be illegible, especially when Picasso is frustrated. At the beginning of the semester, he used line to express shape and the ribs on the cup. However, the shapes of the cups are not closed, although interestingly the triangle between the shapes is closed. There is no sense of form in the drawing of shape or use of shading to suggest form. Figure 15 is Picasso’s drawing at the end of the semester. By the end of the semester, 15 weeks later, the student was able to effectively use elipses and rounded lines to create the sense of a curved cup that is sitting on a surface. Additionally, the student was able to apply value through shading of the pencil to further suggest the roundness of the form with the light hitting the front and shadow toward the edges. Picasso was showing clear advancement in his technique of using a pencil, observational skills, and application of formal aspects of art, including value and form. In talking with the teacher about the student’s growth, she stated, “There is an extreme difference between the two . . . even though he is still grasping how to do value and craftsmanship . . . it [Figure 15] is full of things that we did in class. It is cool to see him retain it and use it on the final.” As part of the end of the semester interview, Picasso stated that he was not happy with any of his artwork produced in the Art Foundations class. So I showed him these two drawings side by side and we discussed them.

Interviewer: What are your thoughts in looking at these two images?
Picasso: I guess the other one improved from the pretest.
Interviewer: What about it do you think looks better?
Picasso: There’s value and more form and contour in that one. . . .
Interviewer: I think even though you are not where you want to be, the quality of your skills has really improved.
Picasso: Yeah I guess so.
While Picasso seemed hesitant to recognize his own growth in skills, the evidence points to student growth. His ability to apply formal concepts, manipulate the chosen media, and verbally use academic language points to growth in arts learning over the 15-week period. All four raters scored his technical skill at one point higher, moving from a 1 with the descriptor
“Cannot manipulate chosen media” to a 2 with a descriptor of “Has difficulty manipulating chosen media” (NIU Art and Design Rubric). His use of formal qualities and conceptual complexity was rated at one point higher by three of the four raters. In the area of formal qualities, Picasso moved from “Cannot use selected elements and/or principles of design to achieve any degree of resolution in artwork” to “Has difficulty using selected elements and/or principles of design to achieve a small degree of resolution in artwork” (NIU Art and Design Rubric). In the area of conceptual complexity, Picasso moved from “Ideas generated in the work are largely derivative, showing no original thought with no evidence of research and/or experimentation.” to “Ideas generated in the work showing a very limited level of originality, reflecting very little research and/or experimentation” (NIU Art and Design Rubric).

Interestingly, when talking with the teacher and student at the end of the semester, there was a strong difference in perception about which project had been most successful and least successful. The teacher stated that she thought his still life, Figure 16, had been the most successful project. “I know this was a difficult project for him, but he stuck with it. He didn’t give up on the first day or say I’m done or I don’t want to work on it anymore.” We talked about the ways in which the student had shown engagement and improvement in his artwork.

**Interviewer:** You said that he was becoming more responsive to your suggestions? Are there things in his artwork that you can specifically point to that you can remember talking to him about?

**Teacher:** I remember him approaching me, and specifically (asking) ‘What can I do to improve? What can I do to get a better grade?’ For him to approach me was very rare. And now I think he is more willing to do that. I don’t know if he was more concerned about his grades and that is why, but he actually did seek me out.

**Interviewer:** And do you remember any of the suggestions you gave to him?

**Teacher:** For the still life, I told him to make sure we don’t see the directional strokes of the pencil so much. Try to go over that, layering is key. I told him don’t be afraid to use the blending stump.

**Interviewer:** It looks like he did that, especially in the base.
Teacher: He did it there, up here a bit, and even on the drapery . . . also the highlights on the edge of the trumpet, those are some things I definitely remember telling him.

Interviewer: He’s not only seeking you out, but he is responding to it and the artwork is reflective.

In contrast, when I spoke to the student and asked him which project had been least successful, he stated, “the still life.” He went on to explain:

Student: It was really hard for me to look at it and then copy it on to a piece of paper properly. I had to re-erase probably like 30 times just to get that one right.

Interviewer: And what is it that you feel like you were struggling with?

Student: The proportions, the size, the value for sure.

It seems that in talking with the teacher and student there were different qualities they looked for in a successful project. The teacher was looking to see that the student was making an effort, was willing to revise and was trying to apply technical and formal skills to the drawing. In contrast, the student seemed to place emphasis on his ability to draw realistically and in the areas
in which he is struggling. Because of this, when reflecting on the projects, the teacher perceived the still life as the most successful whereas the student felt the opposite way. When talking about the figure drawing project (Figure 17), the teacher expressed frustration over Picasso’s perceived lack of effort on the project: “His figure drawing was very simplistic, kind of like a stick figure; he didn’t use any of the techniques we talked about in class. The project he turned in to me was very rushed.” We discussed how this was an one of the projects in which students had a lot of personal choice in terms of subject and composition. The teacher described his work:

There was a figure with his arms up in the middle of the paper, and I told him he is floating. Is he supposed to be floating? And he was like, well no. So I was like what’s happening? Show me what’s happening, and he drew two more guys holding the figure up. They just have these generic smiley faces and the line of a shirt, and that was it. No value, no background. And he was like ‘I am just done with this, I am just done.’ But it was not entirely what I wanted. I told him, I was looking for using the forms to make the figure, and he was like, ‘uhhh yeah, I am done.’

When I talked with the student about his figure drawing, he explained that he had tried to make a scene that was humorous but also to respond to the teacher’s suggestions.

Student: I just drew what I felt like drawing and then put humor into it.
Interviewer: Okay, how did you decide to have these people down here and this person up here?
Student: I drew one person and then I saw that it was floating on the paper and I wanted to fix that, so I drew two people down below.
Interviewer: What do you feel is successful out of the picture?
Student: The contours, I think that is pretty good.
Interviewer: What about the humor- do you think it ended up being a humorous image?
Student: Yep.
Interviewer: How did you decide what to do in the background.
Student: Well honestly (teacher) told me to add something in the background, so I drew a tree. She helped me with the turnk, and I added the leaves.

From the student’s conversation with me, it appears that he felt he responded to the teacher and made changes and additions to the drawing. The interview data from these two projects suggest that the student and teacher have different perceptions of success and effort. While the teacher felt the student had tried hard on the still life and was successful, the student expressed a lot of
frustration. On the other hand, the student said he was happy with the figure drawing and described working through various issues whereas the teacher felt as if the student exerted little effort or application of technical and formal concepts the class had covered. The lack of consensus between teacher and student is important because it is indicative of many students with ED difficulties with social interactions and the teacher’s frustrations of working with this population of students.

Figure 17. Picasso’s Week 14 image.

Even though this student made clear progress in his art-making in the more traditional Art Foundations class, it is insightful to compare his artwork produced in the Digital Photography class, which embraced postmodern approaches. In the photography class, students were encouraged to create images with more opportunities for personal choice (see Figures 18 and 19). For a student with issues of fine motor skills, the digital artmaking tools of Adobe Photoshop became an accommodation for him to produce high-quality work without the frustration of drawing. It was only with digital work that Picasso’s artwork was scored at levels of 3 or higher. Level 3 is written in the rubric as an average or basic expectation. Figure 19 was scored the highest of all the images produced by Picasso. For this image, two raters scored the technical skill at a 3 and two scored technical skill at a 4, meaning that Picasso’s ability to
manipulate the chosen media was perceived as either “satisfactory” or “above average” (NIU Art and Design Rubric). For the formal qualities, three of the four raters scored the work at a level 4, meaning the student “is able to employ selected elements and/or principles of design to achieve a good level of resolution in art work.” For conceptual complexity, two raters scored the work at a level 4, “Ideas generated in the work show a high level of originality, and sophistication reflecting some research and experimentation,” while the other two raters scored the work at a level 5. When talking about the Digital Photography class, the student said, “We are learning how to use Adobe Photoshop, and since I am more of a computer person, I like that better.”

![Figure 18. Picasso’s Week 3 digital image.](image-url)
At the end of the semester interview, Picasso and I talked about his experience in art class. He stated that the Digital Photography class was his favorite in his schedule. Although the student had initially planned to drop Art Foundations for the spring semester, he had decided to stay in the class. Picasso did express some disappointment that his fine motor skills had not improved more.

Interviewer: When we talked in October, you said one of the reasons you were interested in taking this class was to improve your fine motor skills. I was wondering if you feel like that happened?

Picasso: Honestly, not really . . . I prefer typing over writing.

The student went on to explain that he enjoys working with technology and computers. This may be one of the reasons, along with his lack of fine motor skills, that he preferred the Digital Photography class to the Art Foundations class. He stated that in the next year he planned to attend a junior college to study network security or programming languages.
Vinci

Vinci is a 17-year-old African American male student in his senior year of high school. This student has a primary IEP classification of ED. For this research, Vinci was observed in an inclusive digital foundations art classroom, which he chose to take based on his relationship with the art teacher. Previously Vinci had taken a semester-long web design course with the same teacher and stated that he chose to take this class because he liked the teacher. The teacher explained that there were no prerequisites for taking the class; however, Vinci had previously taken the web-design class: “Unfortunately this happens that we have students who get put into a class that is flip-flop from the prerequisite; he should have taken this class first.” Most of the students have not taken any previous classes at the high-school level and visual arts is not required by the district at the middle-school level. However, the student had transferred from a different district and had taken a “basic” art class and web design. The student stated that he had been kicked out of the web design class in middle school, so he did not have the opportunity to learn the design programs.

As part of the semester interview, the teacher and I discussed the curricular and pedagogical approaches that would be utilized in the digital art class. When asked to describe the purpose of art education in high school, the teacher explained that it could make a person “culturally aware and visually aware of the world around you. . . it makes you a better citizen, more aware of the world.” The teacher explained that a goal of the course was to introduce students to the tools of Adobe Illustrator, Adobe Photoshop, and Dreamweaver to explore similar artistic concepts that might be covered in a traditional Art Foundations class. Students would start with learning basic tools and learn “how to control line, shape, color, and the elements of art.” Eventually they would move on to arranging objects and composition. According to the
teacher, the class tends to draw students “that aren’t that comfortable with traditional artmaking,” leading to outcomes that are more current and modern. Students are supported in learning through demonstrations, one-on-one tutoring, and summative and formative feedback. Additionally, the teacher offers opportunities for the students to give feedback through a round-robin written forum. When describing the classroom environment, the teacher explained, “I try to keep it loose, so they feel more comfortable, a little bit more open so they are willing to share their ideas with each other and then that way when we have critiques they are more willing to trust each other.” The teacher had previous experience working with both this student and other students in the ED program. He stated that it was important to “overemphasize the good things they are doing. There tends to be some hesitation towards, I don’t know if I am good enough, I don’t know if this is right.”

Five images were collected from Vinci over the course of the semester. Although there were several more assignments due, by the last day of class the student had failed to complete them. The inability to complete projects was exhibited by the student throughout the semester. He moved very slowly when starting projects, sometimes deleting projects and starting over. The teacher commented that on one project in which students were making a collaged image based on a song, “he changed his song choice three or four times . . . he went humorous at one point and more serious and now he found something that he is more into.” As mentioned in the social interactions chapter, Vinci experienced a difficult period in the middle of the semester, during which he completed little work. Thus, he was behind the rest of the semester. The two final projects could not be collected because the student failed to complete them. One of those projects was a web-design project in which students had to research a contemporary artist and design a website about their work. The other project was for the final exam, for which students were
asked to design a set of currency (dollar bills) using skills learned in Adobe Photoshop and Illustrator. The images produced in Weeks 2, 4, and 8 were produced in Adobe Illustrator. The images produced in Weeks 11 and 14 were created in Adobe Photoshop.

In examining the scores, four out of five of Vinci’s images scored the highest in conceptual skills versus technical and formal skills (Figure 20). Vinci’s Week 8 image, in which he scored lower in conceptual skills, was the most advanced project in Adobe Illustrator. It seemed as if the student was focused mainly on the creation of the image. From the beginning to the end of the semester Vinci’s scores increased in all three areas. Vinci’s artwork grew the most in terms of conceptual complexity, starting at a 2 in Week 2 and ending at a 4.25 in Week 14. The scores of his artwork also increased in the area of formal concepts, starting at a 2.25 in Week 0 and ending at a 4 in Week 14. The area of lowest growth was in technical skills. At the beginning of the semester, Vinci’s artwork scored a 2 and at the end of the semester was 3.5. All areas of his work showed at least 1.5 levels of growth over the course of the semester. Over the course of the semester, Vinci’s skills in artmaking increased in a fairly linear upward pattern.

![Vinci Artwork](image)

**Figure 20.** Scores of artwork created by Vinci
Vinci had previously worked with the teacher in another art class. At the beginning of the semester, the teacher reflected on the student’s skills in art making.

Teacher: I think he has a lot of potential, there is some talent there, natural. I think he has got some drawing ability. He does apply it fairly well to computer, it is just not always grasping the procedures or the steps or having the patience to see it through all the way on the technical side of it.

Interviewer: Well and Illustrator is very different, it is all vector based.
Teacher: Right. He was actually doing a pretty good job with photoshop last year and he was actually enjoying that, so I am hoping that comes around again later in the year.

Interviewer: What about conceptually in the stuff he is making?
Teacher: I think he has some good ideas. I think he sometimes struggles to see it through to the end or know how to get from A to B with the ideas. But, he has some good starting points and when we kind of focus them in and he allows himself to see it through, the results are pretty nice.

The first three projects for the class focused on manipulating line and shape through Adobe Illustrator. The student confirmed in his interview that this was his first time working with the program and he found it frustrating. In the first project of the semester, Figure 21, students had to pick a word out of hat and illustrate the word. Vinci received the word “sleepy” and choose a literal interpretation, creating a nighttime scene with a bed and stars. Although the student started with creating a bed and window in Adobe Illustrator, it is apparent that partway through he became frustrated and imported the image into Adobe Photoshop to free draw the pillow, blanket and Zs. As predicted by the teacher, the student reached a level of frustration and chose to find a way to complete the project quickly rather than “seeing it through.” This image received an average ranking of level 2 in technical skills, formal qualities, and conceptual complexity. This means that at the beginning of the semester, the student was creating images that were below the expected quality of those produced by high school students because he “had difficulty manipulating the chosen media, difficulty using selected elements and/or principles of design, and showed a very limited level of originality” (NIU Art and Design Rubric).
Figure 21. Vinci’s Week 2 image.

Figure 22 was an assignment designed to explore geometric shapes versus organic shapes. The teacher explained, “One end of the spectrum had to be geometric and one end of the spectrum had to be organic.” For this project, the student chose to do a series of game controllers, moving from the newer, more rounded models to the older geometric shapes. During observations, it was clear the student was struggling to come up with an idea, as he spent the first three days of the project searching the internet for inspiration. Two requirements of this project were for students to incorporate a background and use the fading tool to transition colors on the objects. The student did not complete either of those requirements. However in Figure 23 the student did apply the fading tool to create letters, demonstrating that he eventually learned this technique. Figure 22 was scored higher than Figure 23 in the area of conceptual complexity.
For the Figure 23 project, each student had to choose a letter and complete a design of a page to illustrate the letter. The teacher stated, “He got the letter X and the theme of the book
was voted upon by the class. They had to nominate different themes and they had to vote. And we voted on gaming. They had to choose a word that suited their letter based upon that theme and create a design for their page of the book.” When I asked the teacher to name the project that was least successful, he stated:

   The skateboard, because of the requirements. It took him a while to get to this place. It only got some of the way there. He did a really good job of creating his own font. Really all they had to do was choose a font that suited their style for the page. He actually almost developed his own, which is a little above and beyond. But on the other side of it, one of the requirements was to incorporate the letter into the picture. So he and I talked about doing something across the skateboard to look like an X more, which he never quite go to. Then we talked about incorporating a sentence based on the word extreme. So he was missing in a few places.

   In reviewing the artwork and statement, I found the teacher’s reasoning to be contradictory. Out of the first three pieces of artwork produced by Vinci, there were requirements in each one that he did not complete. However, Figure 23 showed the highest level of initiative and innovation, especially concerning the development of the font used in the word “extreme”. In talking to the student about the work, Vinci realized the work was incomplete and he needed to finish the project. He stated that he planned to go back and finish the work by adding an X across the form.

   For the Figure 20 project, students had to take “three animals and combine them into one,” use Adobe Photoshop to seamlessly create that unification, put it into a space, and learn how to create a cast shadow. The teacher, student, and raters all indicated this project was the most successful of the artwork completed by Vinci during the semester. This project scored the highest in the areas of technical skill, formal qualities, and conceptual complexity of all of his artwork. Three of the four raters scored the image at a level 3 for technical skill, meaning that the student was able to “manipulate the chosen media with a satisfactory level of skill” (NIU Art and
Design Rubric). In the area of formal qualities, the artwork received an average score of 4 by the raters, meaning that Vinci was “able to employ selected elements and/or principles of design to achieve a good level of resolution” (NIU Art and Design Rubric). Finally, for conceptual complexity, the raters scored this at level 4, meaning “ideas generated in the work show a high level of originality and sophistication reflecting some research and experimentation” (NIU Art and Design Rubric). The scores from the artwork at the beginning to the end of the semester increased by one point in technical skills and two points in formal qualities and conceptual complexity.

Figure 24: Vinci’s Week 14 image.

At the end of the semester the teacher talked about why this project was most successful for Vinci:

He has gotten very good at photoshop, in particular, and understanding how to use those tools and understanding how to remove background and take only what he needs and wants and that does come back to- I think his hand-eye coordination and his ability to draw, which he doesn’t get to show off as much in a class like this. I think his ability to do that helped him get in real close with some of these feathers and remove some of the areas that he didn’t want within that animal and find ways to bring them together.
As part of the end of the semester interview, I asked Vinci to identify the project he felt that was most successful.

Interviewer: Which one do you think you did the best job on?
Student: That one.
Interviewer: The animal one.
Student: Yes.
Interviewer: Why do you think you did the best job on that one?
Student: I put forth more effort.
Interviewer: Was there a particular reason that you tried harder on that one?
Student: I don’t even know to be honest with you. It couldn’t have been no sloppy work, plus I seen other people working and I was like, dang their stuff look cool, so I had to do something cool, I couldn’t be basic.

At the same time, the student also expressed that this same project was the hardest for him. Vinci described that because the expectation was to create something that looked realistic, it required him to apply a blending of images, lighting, background, and shadow in a high-quality manner. Because this work was rated the highest conceptually of any of his pieces, I asked him how he had come up with idea. I commented to the student that it reminded me of a Hippogriff from the Harry Potter series.

Interviewer: How did you decide to come up with the idea for this?
Student: It was on the fly, I am not even going to lie to you, because I was prolonging it like what should I do?
Interviewer: It reminds me of the animal in Harry Potter.
Student: Yeah it does, I didn’t even realize.
Interviewer: Are you a big Harry Potter fan?
Student: Yes, I really am.
Interviewer: Well maybe you did without even realizing.
Student: I probably did, because I used to read all the books all the time.

In reflecting on the artwork this student produced, three main points stand out. First, for this student, and many others, the transition to a vector-based program of Adobe Illustrator can be extremely frustrating. At the beginning of the semester, the teacher expressed that he thought Vinci would be more successful with Adobe Photoshop than Illustrator due to the nature of the program. Looking back on the artwork created by Vinci, this hypothesis held true. The teacher
reflected in the discussion of the animal hybrid image that the student had been extremely successful with Adobe Photoshop. As part of our end-of-the semester interview, I asked Vinci about this.

Interviewer: Do you feel that you like Photoshop better than Illustrator?
Student: Yes.
Interviewer: Do you have any idea what it is you like about Photoshop more?
Student: It is easier, it has more variety of things like tools, I can be more creative with my work.

Second, although this student struggled with social interactions, as discussed in the previous chapter, the interviews revealed a disconnect between how the teacher perceived his learning in relation to other students and how the student used his peers as a resource.

Interviewer: Does he ever seek out students, not just in terms of social, but also in terms of asking for help on how to do stuff?
Teacher: Very rarely, but yes. I will catch him talking to the boy next to him and checking and making sure he is doing it right. He likes to be independent or he will ask me. When I had him sitting on the other side of the room, he would occasionally ask the girl.

However, when I asked the student about using his peers as a source of inspiration and interaction, he felt that he utilized them as a resource, saying “I always get ideas from them.” His description of the animal hybrid project, Figure 24, suggested that he was highly motivated by the quality of work that other students were producing. Upon further questioning, the student revealed when developing Figure 24, he was inspired by the student next to him: “She made an eyelash; it went from a ball to an eye, no she curved mascara . . . and that was what made me want to show the generations of the controller.” Finally, the qualities of the artwork, interviews, and scoring by the raters suggest that Vinci had conceptually interesting ideas. However, it was clear that the student struggled to work through problems with the digital programs or stay focused on projects over lengths of time, and this hampered the development of his artwork.
At the end of the semester, Vinci and I talked about his experience in Digital Foundations. He said, “I think it is going pretty good. At first I was struggling. I didn’t want to do the work, but recently I have been putting forth the effort.” When asked what he had learned by taking art, Vinci stated, “There are different art forms that I never knew. I knew how to draw and stuff, but I never knew you could put things there to make something brand new, to create something. Art is a form to express yourself.” I asked the student about his plans in the future, and he said he was deciding between attending an art college in downtown Chicago or attending a state university. Vinci plans on studying music in college.

Ross

Ross is a 16-year-old male in his junior year of high school who identifies as Hispanic and Caucasian. This student has a primary IEP classification of ED and spends the majority of his day in an inclusive setting. For this research, Ross was observed in an inclusive Commercial Design classroom, which he chose to take because of his interest in digital art and his relationship with the art teacher. This is his third year in art classes with this teacher, having previously taken both Art Foundations and Digital Illustration, both year-long classes. The teacher described the Art Foundations class as “a lot of traditional media, and we try and sandwich in digital media and some 3-D media as well . . . ; from that they take Digital Illustration, which is kind of like an advanced drawing class, but mostly in Adobe Photoshop and Illustrator.” The student mentioned that outside of school he likes to draw comic strips because “I draw how I feel sometimes. I think that is a good way to express myself, so I just kind of write it down.” The student said his favorite artist is Alex Ross, and he chose that artist to use as a pseudonym. Since the teacher had worked with the student previously, I asked him to describe Ross’s artistic skills:
He is pretty good. He came in with a good base for drawing and he had high interest in it. He draws in his sketchbook on his own and just that is a hobby for him. He is one of those rare kids that knew he had a lot of room to grow and he sought that out. You will probably see this, he will ask questions.

The teacher and I discussed, as part of the beginning semester interview, the curricular and pedagogical approaches that would be implemented in Commercial Design. Early classes at the school are heavily focused on skill through technique, method, and media. However, by the time students enter the Commercial Design class, they “start adding a lot of their own personal inspiration and concept to it [the artwork].” The Commercial Design is an advanced class during which students learn how to use Adobe Illustrator and Adobe Flash. Lessons in the class cover designing logos, business cards, posters, games, and animated gifs. The teacher uses a variety of learning supports, including in-person demonstrations, explanations and tutorials on the class blog, one-on-one tutoring, and formative and summative critiques. Additionally, each Friday the students are required to post an image to their blog and critique images from other students’ blogs. The teacher also described the loose social nature of the class. “They are interacting socially as they are working . . . it gives them a chance to talk to each other, bounce ideas off each other, and get inspiration.”

Over the course of the semester eight pieces of artwork were collected from Ross (Figure 25). The final project of the semester was an animated gif. The student did not save it correctly to his blog and only screenshots, which inaccurately represented his work, were available. A second project from earlier in the semester, on game design, was unfinished. The teacher stated that this project had gone on too long, and he had chosen to have the students move on to the next project without finishing it. Neither project was included as part of the scoring to look at student growth. Ross’s artwork represented a combination of hand drawn items that he scanned in, images created using Adobe Illustrator, and images from Adobe Photoshop. The first image,
from Week 0, was the initial image that Ross posted in his blog, but the teacher informed me that it was an image he had produced at the end of the previous semester. The images produced in Weeks 4, 9, 11, and 14 were produced in Adobe Illustrator. The rest of the images were produced in Adobe Photoshop or hand-drawn. Additional images such as in-process works were also collected and are used as part of the analysis to examine student growth.

![Ross Artwork Chart](image)

Figure 25. Scores of artwork created by Ross.

In examining the scores, Ross’s images scored the highest in conceptual skills versus technical and formal skills. The only images in which Ross scored lower in conceptual skills were for projects that were teacher directed in content and focused on learning tools. From the beginning to the end of the semester Ross’s scores increased in all three areas (Figure 25). Ross’s artwork grew the most in terms of conceptual complexity, starting at a 2 in Week 0 and ending at a 4.5 in Week 14. This aligns with the teacher’s comments during the interview in which he said that students make significant gains in the area of personal choice and conceptual complexity.
during the advanced classes. The scores of his artwork also increased in the area of formal concepts starting at a 2.25 in Week 0 and ending at a 4.25 in Week 14. The area of lowest growth was in technical skills. At the beginning of the semester, Ross’s artwork scored a 2 and at the end of the semester was 3.75. All areas of his work showed at least 1.75 levels of growth over the course of the semester. Considering this student was in his third year of visual arts classes, it was impressive to see this level of growth.

As part of our interview at the beginning of the semester, I asked Ross to identify a project that he had previously enjoyed. He quickly identified a project from the previous semester in which students had been able to design their own character and stated the reason was because “you did your own thing,” suggesting the student places a high value on personal choice. Figure 26 shows a drawing that Ross produced at the beginning of the semester in which he could design his own character.

![Figure 26. Ross’s Week 1 image.](image)

Unlike Vinci, Ross was able to easily transition to using the vector-based program of Adobe Illustrator. In the beginning of the semester interview, Ross stated that he felt he was better at “ideas” than skills in art and was hoping to improve his skills this year. At the beginning
of the semester, the teacher described Ross as a “solid drawer, he is a pretty good draftsman, skill-wise he had pretty good technique.” The teacher reflected on how he helped support Ross’s technical and formal skill development. “I would say he came in with those, ‘I can draw Marvel guys.’ I worked with him to add value. At first I don’t think he was real receptive to it, because he didn’t see the value of it, but as I showed him and was like . . . that’s how they are getting these dynamic poses.” Figure 26, which was Ross’s first image produced in the semester, shows Ross’s skills in drawing. The raters scored this image at level 3 in all three areas, suggesting the student was demonstrating technical skills, formal qualities, and conceptual complexity that “was typical for students for this age and educational experience.” At the beginning of the semester, the student reflected on his own artmaking skills; “I struggle with getting it [ideas] down on paper because I can’t my head around it, you know.”

For the first major project of the semester, students were asked to design a logo (see Figure 27). The teacher explained, “His fictional graphic design company is Art Evolution and so he is doing this thing with evolution of skulls; it is very clever.” The student stated this was his favorite project because he like the personal choice involved. I asked him to explain the design process he used to create this work.

Interviewer: How did you develop your idea for it?
Student: It started out as art utensils and it wound up as evolution.
Interviewer: So where did you come up with the idea for evolution?
Student: I don’t know, I couldn’t really think of anything else, I was trying to do something that had the same sound at the beginning, so I just moved shapes around, honestly.

Figure 27 was the first Adobe Illustrator project that Ross completed. The teacher reflected:

A lot of kids are very adamant against Illustrator. It is a different way of thinking about how to use art, because it is a lot more spatial and shape based vs. hand drawing, but he had a good knack for it. He has a good way of using it. The two guys who are sitting next to him are always trying to get away from using Illustrator and he is always like that is not what this is for and this is how you do this.
Previous work completed by this student was hand drawn and did not show the same level of sophistication or originality of concept. Ross also exhibited strong engagement in the task and was commitment to resolving his idea. According to the teacher, “He [Ross] went back to that evolution one, that logo, one of the very early projects. He must have gone back to that 1,000 times and just nudged pieces of those characters over and over again till he got the exact art that he wanted.”

Ross’s Figure 28, from Week 11, was also completed in Illustrator. For this project the student demonstrated an increased use in color and greater conceptual complexity with the use of text to create a double entendre. This image was scored at level 4 for conceptual complexity, meaning “the ideas generated in this work show a high level of originality and sophistication” (NIU Art and Design Rubric).
The final project students worked on was through a grant from the Cultural Center of Turkey. Figure 29 is the original ideation produced by the student. Figure 30 is the refined final artwork. This project demonstrated Ross’s fluency in using both Adobe Photoshop and Illustrator through the combination of manipulated images and illustrations created.

Interviewer: What were the parameters that Mr. ----- gave you?
Student: Well, what you had to do was make a poster and convince the European Union to vote Turkey into the EU.

Interviewer: How is the final one different from this one (Image 25)?
Student: It is a lot more serious in terms of the text on it, and it doesn’t have the prime minister and the Hagia Sophia. It’s pretty different.

Interviewer: So there are a lot of references, in terms of images on there. Is that something Mr. --------- introduced to you? Or how did you come up with using those images?
Student: Well he did tell the class to try and use iconic symbols from Turkey, but I kind of thought that would be a good idea anyway.

Interviewer: So you were already familiar with the Hagia Sophia?
Student: Oh no . . . He started talking to us about certain icons and important places in Turkey.
Figure 29. Ross’s in-progress of Week 14 image.

Figure 30. Ross’s Week 14 image.
This project required students to move beyond manipulation of principles and elements to application of those concepts to a contemporary social issue, engaging the student in learning that became cross-disciplinary and relevant. In the interview, I asked Ross if he had been aware of the issues of voting Turkey into the European Union; he said he had not. As a result of this project, he researched the controversy around the fact that many in “the European Union don’t really want Turkey in because it has kind of a bad image due to the high Muslim population.”

The teacher stated that out of all the students, “His had the most thought behind it, and really captured what we are trying to go for. He actually thought about it and he posted so it had the EU symbol on it.” The teacher explained that most of the student “just put Turkish culture stuff up; it wasn’t the most amazing thing in the world. They just found whatever.” In looking at the progression of the artwork, Ross’s initial ideation was a conglomeration of “Turkish cultural stuff.” However, his final ideation became much more sophisticated, incorporating the EU symbol and Turkish coat of arms together with the graphic representation of shaking hands, symbolizing the country entering a partnership with the EU. This final ideation, Figure 30, was ranked the highest of all Ross’s images in all three areas. In the area of technical skills, three of the four raters scored the image at level 4, indicating the student was “able to manipulate the media with an above average level of confidence and skill” (NIU Art and Design Rubric). Three of the four raters scored this image at level 5 in the area of formal qualities, meaning “The formal qualities of the artwork exceed the typical understandings for a student of this age and educational experience” (NIU Art and Design Rubric). Additionally, three of the four raters scored the final image at level 5 in the area of conceptual complexity, suggesting “the ideas in the work show a very high level of originality and sophistication, reflecting extensive research and experimentation” (NIU Art and Design Rubric). The final artwork showed clear
development from earlier works produced by this student and was found to be impressive by both the teacher and raters.

I talked with Ross about ways in which he had grown as an artist. He named his ability to proportion and his use of color. As part of the interviews with the teacher, we also talked about how Ross had grown in his artmaking skills over time. In this class, the teacher said students transitioned from using Adobe Photoshop to Illustrator. I commented to Ross at the beginning of the semester that “you have a strong ability to create in Illustrator, drawing proportionally; it was impressive to watch.” The student seemed pleased with my comment. My observation was also confirmed by the teacher in his interview.

Teacher: In Photoshop he was very skilled, so to be good at Illustrator just means he is well balanced. He has changed his style a lot since Illustrator has come around. He used to have a very graphic novel look to his work. Now I see it much more simplified, more of a cartoon look, where all the shapes are simple and basic.

Interviewer: It’s sophisticated.
Teacher: Yeah minimalism is difficult to pull off, if you only have six different shapes to convey the entire thing, they better be useful. I think he does a really good job of that.

Interviewer: If you were to think about his Illustrator skills, what is it you think he has developed?
Teacher: For me, I think that Illustrator is much more about solid design and composition and it is not so much about rendering or good value or good texture.

In talking with Ross about his growth, he stated that “I am pretty good at Illustrator.”

This was interesting, because unlike Vinci, Ross was able to easily make the transition from Adobe Photoshop to the vector-based Illustrator. The teacher also commented on the Ross’s use of color in his work: “He is using a lot of retro colors in his stuff, or bolder colors or some of the thing he wants to pop out.”

Ross said he planned to take AP Digital Art with the same teacher in the next school year. Although this student seemed outwardly confident and comfortable in the artroom, he also
experienced anxiety and depression, perhaps making him less confident than his behavior portrayed. At the end of the semester, the teacher was reflective on how he might best work with Ross: “I just want to make sure he doesn’t take some type of feedback and run amock with it. I want him to have ownership of his stuff. He is a little self-deprecating, but again, that is a lot of my students.” Ross, like the other two students in this study, was overly sensitive to feedback and had, on occasions, deleted entire projects and started over due to the teacher’s comments. The teacher recognized that in AP Digital Art, he did not want to overly influence the student and would be working on structuring feedback in a way to alleviate this issue. At the end of the semester, the teacher also commented, “I think that Ross is thinking this [design] is a career possibility.” When I asked the student about this, Ross stated, “I am kind of split right now, whether I want to do art and design or a science field . . . I am really interested in chemistry.” Although as a freshman this student had experienced a lot of absenteeism due to mental health issues. As he continued in school with sustained participation in the arts, this correlated with a decrease in absenteeism and higher levels of general academic achievement. The quality of his artwork had grown over time in both technical and formal skills, but also in the areas of conceptual complexity. Ross, who had the highest level of art participation, also had the highest quality of artwork collected as part of this study.

**Comparison of Student Growth**

Out of the three students, Picasso, who was in his first semester of visual arts classes, scored the lowest at the beginning of the semester: 1 technical skills, 1 formal qualities, and 1 conceptual complexity. Vinci’s and Ross’s artworks from the beginning of the semester were scored at the exact same level: 2 technical skills, 2.25 formal qualities, and 2 conceptual complexity. All three students’ artwork scored higher in all three areas by the end of the
semester (see Table 21), although at the end of the semester the student with the least amount of experience, Picasso, still scored the lowest. However, although Vinci and Ross had started the semester with the same scores, by the end, Ross, who was in his third semester of art, scored higher. The scores from their images demonstrate that all three students were able to make identifiable gains in their artwork over the course of one semester. Students who had previous experience in the arts started at a higher level but were also able to continue to grow in their artmaking skills. Because the pilot study had shown students with ED might have lower than expected skills in artmaking, the initial scores were not unexpected. However, the results from the scoring suggest that with instruction, students with ED are able to make measurable gains.

Table 21

Scores from Beginning and End of the Semester

<table>
<thead>
<tr>
<th></th>
<th>Technical Score at Beginning of Semester</th>
<th>Technical Score at End of Semester</th>
<th>Formal Score at Beginning of Semester</th>
<th>Formal Score at End of Semester</th>
<th>Conceptual Score at Beginning of the Semester</th>
<th>Conceptual Score at the end of the Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Picasso</td>
<td>1</td>
<td>2*</td>
<td>1</td>
<td>2.5*</td>
<td>1</td>
<td>2.75*</td>
</tr>
<tr>
<td>Vinci</td>
<td>2</td>
<td>3.5</td>
<td>2.25</td>
<td>4</td>
<td>2</td>
<td>4.25</td>
</tr>
<tr>
<td>Ross</td>
<td>2</td>
<td>3.75</td>
<td>2.25</td>
<td>4.25</td>
<td>2</td>
<td>4.5</td>
</tr>
</tbody>
</table>

* Score for Picasso for end the semester is from the final assignment for the Art Foundations class. The drawing for the final exam was excluded because it was a prompt and had a time limit. Images from digital foundation were not included to look at growth.

By looking at the positive differences in scores, commonalities can be found in the ways in which the students’ artmaking skills improved. Every student improved in all three areas by at least one point (Table 22). The area in which students made the most growth was conceptual complexity, where the average growth in score in this area was 2.17 points. The
average increase in technical skills score was 1.42 points and formal qualities was 1.75 points. In looking at the scores, the students consistently made the least growth in technical skills and the most in conceptual complexity. This suggests that for this group of students, technical skills may be more difficult and require a longer time to improve. On the other hand, the large increases in conceptual complexity demonstrate that students at this age are able to handle abstract concepts and develop ideas with originality and sophistication. For this particular group of students, it might be important to find ways to support students who may struggle with the technical skills, such as Picasso, through accommodations so that they are able to fully engage with artmaking.

Table 22

Growth in Artwork Scores

<table>
<thead>
<tr>
<th></th>
<th>Growth in Technical Skills Score</th>
<th>Growth in Formal Qualities Score</th>
<th>Growth in Conceptual Complexity Score</th>
<th>Average Growth in Scores by Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>Picasso</td>
<td>1</td>
<td>1.5</td>
<td>1.75</td>
<td>1.42</td>
</tr>
<tr>
<td>Vinci</td>
<td>1.5</td>
<td>1.75</td>
<td>2.25</td>
<td>1.83</td>
</tr>
<tr>
<td>Ross</td>
<td>1.75</td>
<td>2</td>
<td>2.5</td>
<td>2.08</td>
</tr>
<tr>
<td>Average Growth by Area</td>
<td>1.42</td>
<td>1.75</td>
<td>2.17</td>
<td></td>
</tr>
</tbody>
</table>

A second aspect of the growth in student scores is the comparison of which student’s artwork improved the most from the beginning to the end of the semester (Table 26). In the case of these three students, Picasso, who had the least experience, showed the smallest average growth (1.42 points). Vinci, in his second semester of art, had the second largest growth (1.83 points). Ross, in his third semester of art, had the largest growth (2.083 points). These data
suggest that students with sustained engagement in the arts will see an increase in their growth in scores each semester; however, this sort of growth is unsustainable as measured by the rubric, in that a student such as Ross is unable to achieve more than a full point of growth in the following year.

Conclusions

This chapter presented three case studies of art learning in art education for students with emotional disabilities. Additionally, patterns of student learning were examined. The three students in this study all demonstrated growth in art skills and concepts over the course of one semester in inclusive visual arts classrooms. The case studies led to insights regarding the abilities of students with ED to successfully develop technical, formal, and conceptual skills in artmaking in as little as one semester. Additionally, the interviews revealed that students with ED are very self-critical. This led to important implications for future art teachers regarding the fact that students with ED may be especially susceptible to critical teacher comments. Finally, participation in digital art classes, rather than traditional classes, should be seen as an accommodation, that is, a way to allow students with low fine motor skills to produce high-quality work. The accommodations should not operate on a medical model to fix students’ fine motor skills through drawing practice but rather should promote the social structures that allow for student success.

Limitations of this research include the small sample size of students and difficulties students had engaging in and completing projects. While patterns of learning are discussed, generalizations to the population of ED students cannot be made due to sample size. Second, for two of the students, a lack of engagement in artmaking and ability to complete the projects impacted the number and quality of projects produced. The struggle to complete projects is a
direct reflection of students’ disabilities, but it inhibits the ability of the researcher to collect artwork that fully represents student learning. Previous research on this population mainly focused on art learning from a therapeutic perspective or psychological perspective. This research examines students with ED as active and capable art learners engaged in artmaking for the sake of bettering their artistic skills. Despite the limitations of this research, given the lack of previous research with students with ED and art education, the data from this study provides an important starting point.

In Chapter 6, the data analysis from Chapters 4 and 5 are combined and connected to the research questions, conceptual framework, and literature. Connections between social skill development, art learning, and academic achievement are discussed. Important findings regarding participation in inclusive visual arts education for students with ED are discussed. Finally, recommendations to the field and suggestions for future research with this population are presented.
Research has demonstrated that children and youth with Emotional Disabilities (ED) have low-level social skills, limited self-control, and communication difficulties as well as low academic achievement. Additionally, they are more likely to experience less school success than any other subgroup, including students with other types of disabilities (Cook et al., 2008; Wagner et al., 2005). Children with ED also struggle with the sensory integration of words, images, and motor action (Wexler, 2011, p. 116). However, the majority of interventions conducted with students with ED have focused on behavior modifications rather than improvement of academic and visual-spatial skills (Ryan, Reid, & Epstein, 2004). Wexler (2011) explains few school situations focus on the entirety of the child by supporting social skills, security, and relationships. People who use postmodern approaches to art education, based on constructivist thinking, value collaboration while engaging a diverse group of students in social and cultural issues. The purpose of this study was to examine the development of art skills, art concepts, and social interactions along with GPA and graduation rates for high school students with ED who participated in inclusive visual arts classes. Three research questions were examined:

1. To what extent do postmodern visual arts classes help high school students with ED develop art skills and concepts over the course of a semester?

2. To what extent do high school students with ED who participate in postmodern visual art classes demonstrate an increase in social interactions measured by positive peer-peer interactions?
and student-teacher interactions and engagement in arts classroom activities over the course of a semester?

3. Do high school students with ED who participate in postmodern visual art classes have higher levels of achievement in terms of GPA and graduation rates than students with ED who do not participate in visual arts?

A mixed methods case study was implemented over a period of two semesters. Four students, four teachers, and two high schools were used as data sources for the research. Data collected included observations, field notes, interviews of students and teachers, artwork, and transcripts. Analysis was completed using a variety of quantitative and qualitative methods, as described in Chapter 3. Multiple strategies were used to increase the reliability and validity of data, including triangulation, multiple observers, member checking, and multiple artwork raters. Data from this research were broken into two chapters. Chapter 4 focuses on data related to the development of social interactions and general academic achievement. Chapter 5 focuses on data related to art learning.

In this chapter, data from Chapters 4 and 5 are synthesized, interpreted, and connected to the previous research. The first part of this chapter focuses on interpretations of the data in three areas: artwork as a reflection of students’ ways of seeing the world, envisioning leading to action, and progressive pedagogical approaches as key to engaging students in learning. The second section of this chapter discusses challenges to successfully including students with ED in visual arts classes. The third section of this chapter discusses implications for future research in the areas of art education, students with ED, and disability studies. The fourth section of this chapter provides recommendations to art educators working with students with ED. The final section of this chapter provides the reflection on this research.
Interpretations

Chapters 4 and 5 provide extensive quantitative and qualitative data. Student artwork and the related evaluations illustrate the students’ learning and growth in art skills and concepts. The interviews with the students and teachers led to important insights regarding their perceptions of events and experiences. Analysis of observational data for social interactions created portraits of the students’ skill development. The historical record analysis illuminated the impact of inclusive visual arts for a larger sample of students with the same disability.

The analysis addresses three areas of interpretation. The first section of the analysis presents evidence of artwork as a reflection of students’ ways of seeing the world. The second section examines how envisioning in art education leads to changes in student thinking and action. The third section examines the pedagogical and curricular approaches that led to student learning in the art rooms. In the final section, student engagement in learning, the development of peer relationships, and student and teacher relationships are discussed.

Artwork as a Reflection of Students’ Ways of Seeing the World

This section presents three interpretations of the students’ artwork acting as visual representations of the ways in which students see the world and themselves within it. The pilot study revealed important insights to challenges students with ED might face in creating artwork when participating in visual arts classes. Because this study looked in depth at three students participating in visual arts, insights about their visual representations are analyzed. The artwork the students produced illustrates how they observed, interpreted, and represented themselves through visual media.

The pilot study for this research illustrated that many students with ED enter arts education with below-grade-level skills. The teachers from the pilot study noted that this may be
due to a variety of reasons, including excessive absences, lack of opportunity to participate in visual arts, and/or lack of motor skills. Previous studies have also suggested there may be qualitative differences between drawings produced by students with ED and those without ED (Jolley, 2010; Koppitz, 1968; Munley, 2011). One unplanned, but insightful, aspect of the sample of students was the breadth of experience in visual arts they represented. For this reason, some of the findings from the pilot study were not applicable to all the students in this research, as Ross and Vinci had opportunities to develop skills in previous classes.

Lowenfeld (1947) describes the pattern of learning of 14- to 17-year-olds as the period of decision that is defined by purposeful learning in art in which students will only continue to develop artistic skills if they have the opportunity and desire to do so. In the interview, the three students in visual arts described the reasons they had chosen to take visual arts. Picasso expressed a desire to develop motor skills and work with computers. Vinci and Ross, who had both taken art before, revealed their previous positive experiences in art and working with the specific teacher. However, research also suggests that students must explicitly be taught skills such as interpretation for art learning to occur (Wolf, 1988). During art classes, instruction occurred in a variety of forms meant to help students develop skills with specific media as well as understanding and application of elements of design and conceptual complexity.

In a research study with children drawing trees, Cohen and Gainer (1995) talked about why children produced decidedly different drawings, stating, “When we look and when we draw, each of us selects from the general image what he or she thinks is important” (p. 94). Yet, through visual arts studies, student are taught to look more closely, notice details, and move beyond their “habitual ways of seeing” (Berger, 2003; Gardner, 1999; Hetland et al., 2013, p. 73). At the beginning of the semester, Picasso was given three cups and asked to arrange and
draw those cups, see Figure 31. In his drawing, Picasso presented the space between the cups, the triangle, and represented it as a closed shape but not as completing the form of the cups. Horizontal lines were used to indicate details on the cup and the bottom of each cup. No line was used to indicate the wide end on any of the three cups. Hetland et al. (2013) explain that one aspect of being taught to observe is through an art teacher’s explanation of the underlying geometry of a form. Figure 32, completed by Picasso at the end of the semester, illustrates an awareness of the forms and geometry of the cups. Ellipses that represent the bottom of the cup and form suggesting a cone shape are apparent. Additionally, Picasso created a rounded edge to indicate the bottom edge of the cup. The drawing is further enhanced by the application of shading and highlights to indicate form and roundness. Details such as the dot in the middle of the ellipse are apparent, along with a uniform attempt to indicate a rim near the wider end of each of the cups. In Figure 31, no details, such as the dot, were apparent nor was there uniformity or care in drawing the details of the cups.

Figure 31. Picasso’s drawing from the beginning of the semester.
Visual arts train students to look at the world around them with attention to detail, form, color, and relationships. In the initial drawing, Figure 31, Picasso seemed only to notice the space between the cups. While this space is an important detail, focusing on the negative space and missing or not observing the cups themselves may be representative of the way in which Picasso sees the world around him. Goodman (1984) wrote:

What and even whether we perceive depends heavily on our state of perceptual readiness. Habit, context, explicit instructions, interests and suggestions of all kinds can blind or activate our perception, conceal or reveal a mountain or a molehill. Far from merely recording what is before us, perception participates in making what we perceive. (p. 25)

A common example of our inaccurate schemas are drawings of faces in which an observant person thinks the eyes are located near the top of the head, ears are very small, and the mouth is depicted as too narrow. For artists, learning to look at objects is an important piece and highly correlated to envisioning, a second key skill for artists (Cohen & Gainer, 1995; Hetland et al., 2013). While we might train artists to observe in order to more accurately depict, the skill of observing has far-reaching consequences outside of the art room. For students with ED who may struggle to observe and interpret social cues, visual art training that emphasizes looking and observing could be extremely valuable.
When asked to interpret or make visual representations, two of the students in the study, Picasso and Vinci, created images that struggled to tell a cohesive story; instead, they focused on isolated details. Bransford, Brown, and Cocking (2000) noted that novices and experts have very different understandings of the same events. In the case of this project, the two ED students created images that exhibited characteristics of novices based on a recall of relevant facts rather than on core concepts and big ideas (Bransford et al., 2000). Picasso and Vinci had a similar assignment in which they were asked to create a Photoshop collage based on a piece of music. The products, Figure 33 and Figure 34, produced by the two students have many visual similarities, including isolated images layered to make a collage, several references to visual culture and logos, a space or abstract background, and a lack of cohesion. These images demonstrate the students’ ability to provide specific examples and details, but they also illustrate a lack of ability on the students’ part to generalize and create a cohesive story. In contrast, other students in these classes created composite images that told stories and reflected the aesthetic qualities of the song. For example, one student created a collage image of a young woman with a horse standing in a meadow surrounded by buildings. Another student illustrated a tree with visible roots in the ground and the leaves budding into objects. The images produced by Picasso and Vinci suggest that they exhibit characteristics, such as focusing on details, rather than creating generalizations and storytelling, which suggests their ability to create images was far more inexperienced than many of their peers (Bransford et al., 2000).
Finally, both Picasso and Ross created artwork that depicted personal struggle and negative images of self-worth. “A general pervasive mood of unhappiness or depression” is one of the defining characteristics of students with ED as defined by IDEA 2004-300.8(c) (Gerber & Guay, 2006, p. 46). Interviews with the students and teachers further revealed their difficulties managing personal relationships with peers, engaging with classmates, and histories
of depression. Figure 35, by Picasso, is a self-portrait of the student in which he appears to be both struggling or overcome emotionally and surrounded by two more figures of himself. The left version of himself appears to reach out to the seated figure as if to comfort or console.

Toward the end of the semester, Picasso drew a scene, Figure 36, that also incorporated three figures. During interviews, he described that this image represented him with his friends in the visual arts class. Through interviews and observations it became apparent that Picasso had developed valuable friendships as part of his participation in the inclusive visual arts class. Both of these images, although differing in technical skill and execution, represent valuable opportunities for the student to express internal feelings. Hetland et al. (2013) argue that expression is one of the studio habits of mind; as students develop an inclination to express, they will also continue to develop skill or craft “in the service of expression” (p. 71).

Figure 35. Picasso’s digital collage 2.
Ross, a third-year art student, also often used his art as a means of personal expression. Although many of the projects in his commercial design class were focused on outside issues such as creating a poster on including Turkey in the European Union, Ross found opportunities to create small projects in which more of his personality could be explored. An analysis of work produced by Ross in previous years suggested he had greatly increased his skill and alertness toward manipulating media, as his inclination toward producing artwork and continuing to express himself engaged him in visual arts classes (Hetland et al., 2013; Lowenfeld, 1947). Ross’s comic, Figure 37, demonstrates his feelings of isolation and depression his teacher mentioned. His illustration of a robot in Figure 38, although comical with a sense of dark humor, also represents the self-deprecation that all the students in this study presented. In looking at these works of art, it becomes apparent students were able to utilize visual mediums to represent their experiences and viewpoint.
It was unknown at the beginning of the current study whether students would be able to develop quantifiably better artwork in as little as one semester. By examining the three students’ growth patterns together, it is also possible to see a pattern of potential growth in visual arts over longer periods of time. Artwork was collected over the course of the semester and rated by three
scorers using a rubric (see Appendix I) on a scale of 1-5 for technical skill, use of formal qualities, and conceptual complexity.

The ratings of the artwork over the course of the semester demonstrated that every student improved in technical skills, formal qualities, and conceptual complexity areas by at least one point. Unlike many traditional, modernist, and DBAE approaches to art education that focus on skill building through exercises and bland application, postmodern approaches to art education place equal emphasis on conceptual development. The students in postmodern art classes produced conceptually interesting work which engaged them, and as it did so, their technical and formal skills also increased.

The area in which students made the most growth was conceptual complexity. The students consistently made the least growth in technical skills, suggesting that for this group of students, technical skills may have been more difficult and required a longer time to improve. On the other hand, the large increases in conceptual complexity demonstrate that regardless of technical skill, students were able to engage in abstract concepts and develop ideas with originality and sophistication. In the case of these three students, Picasso, who had the least experience, started and ended the semester with the lowest scores. Vinci and Ross, who had previous experience, started with similar scores, but Ross, who had the most experience, ended with the highest scores. The scoring of the work suggests that through inclusive visual arts education, students developed craft (technical skills) and learned to more closely observe and express themselves in visual media. To improve artmaking skills, students need extended time to practice these skills. As they do so, the current research suggests students will continue to develop dispositions or “studio habits of mind” that are used in many academic arenas and daily life (Hetland et al., 2013, p. 7).
Envisioning Leads to Action

“When envisioning, one imagines and generates image of possibilities in the mind” (Hetland et al., 2013, p. 60). Data from the current research suggest that exposure to art may help students envision other ways of being through learning about their peers and exposure to visual media. Through the interviews, the students described how they learned about their peers’ perspectives, different ways of approaching projects, and differing ways of visual representation. Vinci stated, “They were really cool; I didn’t expect that. They have their own perspective and do the work they want to do. It is not just repetitive stuff; they switch it up.” In their research with children, Cohen and Gainer (1995) found that seeing another’s concept of a tree, challenged students to go back and look again. Looking at another student’s interpretation was closely tied to seeing and understanding other ways of being. This process of learning other ways of being encourages students to envision. Are there correlations with an increase in general academic achievement for students who learn to envision other ways of being through participation in visual arts?

Research has shown that students may meet more of their potential if given an educational design that promotes the arts (Catterall et al., 2014; Viglione, 2009). Arts education creates a climate of respect and supports diverse learning styles and functional levels (Gerber & Guay, 2006; Viglione, 2009). Previous studies have also shown a positive correlation between visual arts education and student performance in other subject areas, standardized tests, GPAs, and graduation rates (Catterall & NEA 2012; Jensen, 2001; Tishman, MacGillivray & Palmer, 2002; Vaughn & Winner, 2000; Wilhelm 2002;). The challenge in studying these sorts of correlations remains in proving a significant causational relationship. As Vaughn and Winner (2000) suggest, participation in the arts and higher standardized test scores are more highly
correlated to socio-economic status than to each other, suggesting that students with high socio-economic status are more likely to participate in visual arts and score higher on standardized testing. With correlational arts and academic achievement studies, researchers run the risk of portraying arts as serving other subject areas and general academic achievement. Some in the field of art education feel this is inappropriate (Hetland et al., 2013), yet the majority of high school students who participate in visual arts will not pursue visual arts as a career. Out of the four students in this study, only Ross was interested in possibly pursuing visual arts at the college level. For those students who will not pursue arts education in higher education, we must think about how the visual, cognitive, and social skills learned through the arts can benefit them in their lives.

The second aspect of this study examined whether the skills students gained through participation in the arts were being transferred to general academic achievement. This was analyzed by collecting 83 transcripts from two high schools and coding data for the number of art classes taken, GPA, class rank, and graduation status. Statistical analysis was run to determine significance for correlational relationships. Findings from the study proved inconclusive in this regard. The transcript analysis demonstrated a weak positive correlational relationship between participation in visual arts and GPA or class rank. However, there was not a statistical difference found in the mean GPA or class rank for students who had not taken art versus those who had taken one, two, or three semesters of art.

For the historical record analysis portion of this study, the mean GPA was calculated for students who had taken zero, one, two, or three semesters of art. Students with one semester of art had the lowest mean cumulative GPA. As mentioned in Chapter 4, this may be due to low-achieving students being counseled into visual arts to fulfill their language requirements for
graduation. But the group of students who took two semesters of art and the group of students who took three or more semesters of art showed a positive increase in their mean GPA. The 17 students who had taken three or more semesters of art had a positive increase in GPA of .329. Further statistical analysis indicated a statistically significant, positive, weak correlational relationship between the number of art classes taken and class rank and that as the number of art classes taken increased, the class rank percentage decreased (which is a higher ranking since 1% is the top of the class). While the statistical analysis did not indicate a significant difference in the mean GPA or class rank, this may have been due to the small sample size, as discussed in Chapter 4. However, it is clear in looking at the statistics that one and two semesters of art did not make large differences in academic achievement. The area with the largest increase was for students who had participated in three or more semesters of art. The data from this part of the research correlates with the data regarding visual arts participation improving students’ ways of seeing the world and their habits of mind in that both sets of data indicate that sustained engagement in the arts provides the largest differences in ways of thinking and behaviors.

**Progressive Postmodern Pedagogical and Curricular Approaches in Art Rooms**

Visual arts rooms, like some other subject areas such as culinary arts, are hands-on experiential learning places. Yet, this study revealed unique characteristics of postmodern visual arts classrooms, such as opportunities for student choice and the ability to express personal interests. Visual arts classes that incorporate technology and teachers who embraced visual and popular culture as part of the curriculum were also a key factor in the successful art room. Additionally, a critical part of visual art classrooms is the incorporation of critique through which students learn to reflect on their own work while also giving and accepting criticism. The following interpretation describes the students’ interest in participating in visual arts vs. other
subject areas and the characteristics of classes that led to student engagement, which in turn led to opportunities for students to develop social interaction skills.

Three of the four students, when asked to identify their favorite class, said lunch. These were Vinci, Ross, and Flay, who participated in a majority of self-contained classes. When pressed to identify a class other than lunch, all three students identified their elective class, two visual arts and one culinary arts, I was observing. In contrast, the one student who spent the majority of his day in an inclusive setting and received support services for social skills and counseling identified science as his favorite class. When this was explored further, the student specified that art was his favorite part of the day, but he identified it as a “leisure class,” distinguishing between core academic classes and visual arts. These responses seem to represent a schism in understanding the purpose of school. It seems that the students in this study perceived school as a place they had to be, with little opportunity for socializing and personal choice. Walker (2007) explains, “There is nothing inherently unequal about difference, but differences can become inequalities” (p. 17). In the case of these students, because of Vinci’s, Ross’s, and Flay’s disabilities and school experiences, it is possible their classes became so highly structured and unenjoyable that they identified lunch, their least structured period, as their favorite class. In contrast, Ross who spent the majority of his day in inclusive settings had a different response, which might be due to his construct of the purpose of school. When asked about his favorite class, Ross identified science; he later said art was his favorite part of the day, but it was a leisure class.

Through the interviews it became clear that the students valued the freedom and choice that occurred in the art room. Kern et al. (2002) and Skerbetz and Kostweicz (2013) found that simple curricular changes to whole-classroom curricula, including choice-making
opportunities and incorporating students’ interests, positively influenced behavioral and academic outcomes of students with ED. Art educators allow for choice-making opportunities through open-ended projects and pedagogical approaches that permit students greater physical and mental freedom in the classroom than might exist in other subjects (Gerber & Guay, 2006). For example, Picasso and Vinci, in the digital classes, were allowed to pick a favorite song and create digital composite images about the songs. The teachers did not limit song choices, and in talking to both students, their buy-in into the project was apparent. Ross, also in a digital class, expressed a clear preference for an initial logo design project because he was able to choose “whatever I wanted to do.” One benefit to an inclusive experience in art education is the progressive contemporary and visual culture-based curricula that many art teachers incorporate.

An important aspect of progressive postmodern approaches to art education is the opportunity for choice and decision making. The literature suggests that constructivist-based pedagogical and curricular approaches to art education, such as postmodernism, provide opportunities for students to develop high-level thinking skills, develop decision-making capabilities, and identify social norms (Efland, 2002; Eisner, 2002; Metcalf, Gervais, Dase & Griseta, 2005; Walker, 2001). In research with special education students, Mason et al. (2004) found many art teachers felt offering choice and opportunity within the context of creating art prepared students to make better choices in the future. This hypothesis is supported by researchers (e.g., Gresch, Hasselhorn, & Bogeholz, 2013; Levy Nahum et. al., 2010) who have found that explicitly teaching students decision-making strategies and implementing project-based learning can have significant effects on students’ decision-making capabilities. Yet, too often students are taught social skills, such as decision making, in isolated settings such as small-group counseling. According to Daniels (2008), students who lack capabilities in this area should
be taught with their peers rather than in isolation using materials, strategies, and activities good for all students. In the case of this study, students were learning social interaction skills through the normal routines of inclusive visual arts education. For instance, during critiques students had to learn how to look at and structure feedback to their peers and then take feedback and apply it to their own work.

Critics have argued that art education at the high-school level too often focuses on the preparation of students for fine arts careers through skill building and traditional projects (Freedman, 2003; Short, 1998). In the case of this study, it appeared that the art foundation class Picasso participated in was focused on teaching the traditional skill-based curriculum. In contrast, the digital-based classes, including a digital foundations class, provided opportunities for students who were interested in pursuing fine arts careers but also engaged all students in expressing personal interests and producing high-quality images. Picasso, who participated in both classes, demonstrated a clear preference for the more progressive curriculum of the digital arts class. Although it should be noted that despite his preference, he made excellent progress in his art skill development and areas of social interactions in the traditional foundation class. The other two students, although given the opportunity to pursue traditional arts, had also chosen to participate in digital arts classes that incorporated issues of visual culture, contemporary social issues, and personal interests.

The students in this study placed a high value on a less structured environment with opportunities for student choice. Traditionally, many interventions have taken strict behavioral approaches in which students’ learning and social interactions are highly regulated. Yet literature suggests that teaching students social and decision-making skills in project-based learning is optimal for students’ skill development, retention, and future application (Gresch, Hasselhorn, &
While teaching decision making and social skills could occur in many classroom environments, students appeared to be successful in visual arts education for several reasons. First, students said they felt safe and respected in the art room while also describing a strong personal connection to the teachers. Second, progressive curricula engaged students in the project development leading to art learning and the development of positive social interactions. While many teachers might feel that students with ED are unable to successfully engage in and learn academic content in a less structured setting, this research suggests that these students were able to achieve large growth in art skills in as little as one semester. Finally, the students demonstrated increases in positive social interactions during the semester, which were learned through behaviors modeled by teachers, observations of and interactions with peers, and interest in learning the content.

**Developing Social Interaction Skills**

To help students develop social competence and skills, such as social interactions, educators should integrate skills into the daily curriculum and provide students with opportunities to demonstrate those skills in various settings (Patterson et al., 2006). Additionally, a constructivist theorist would argue that students learn best from and with other peers, building knowledge based on social interactions. Yet three out of four students in this study spent the majority of their day in self-contained settings with other peers who also struggle with emotional and behavioral issues. These environments tend to be isolating while offering little opportunity to practice social skills yet alone learn from peers who excel in these areas (Jones et al., 2004; Wexler, 2011). Jones et al., 2004) found that teachers of ED students often develop classroom cultures in which they have limited contact with each other and other students. Researchers in the arts (e.g., Eisner, 2002; Jensen, 2001) have long advocated for and...
found evidence to support arts education as a catalyst in the development of social skills and fostering long-term engagement in learning. Through learning experiences such as critiques, students learn how to appropriately converse and share work while also accepting criticism. The visual arts classrooms provided opportunities for students to develop the ability to engage in long-term projects and learn through interactions with fellow peers. Although most approaches to working with students with ED are behaviorist in origin, researchers have not found one particular approach to be the most appropriate. Instead they have recommended that students need more opportunities for practicing application of social skills in real-life situations or project-based learning (Gresch, Hasselhorn, & Bogeholz, 2013; Greshem et al., 2004; Kern et al, 2002; Kohn, 2000; Levy Nahum et al., 2010).

**Engagement in art learning.** All of the students who participated in this study had previously exhibited avoidance behaviors in regard to learning in school. The student histories revealed absenteeism, skipping class, not completing work in class, sleeping in class, and performing other off-task behaviors. One of the research questions of this study was designed to determine if students would become more engaged in their learning in visual arts classrooms. Hetland et al. (2013) describe how visual arts instruction moves beyond teaching the craft of visual arts. The authors claim that the arts develop a habit of mind to engage and persist: “Teachers in rigorous visual arts classes present their students with engaging projects, and they teach their students to connect to the assignments personally, to persist in their work, and to stick to a task for a sustained period of time” (p. 52). During the interviews, one teacher confirmed this idea, stating that because students are often making projects related to current visual culture in the visual arts classes, “the outcome of the projects tends to be more current and modern” and “they have that ownership of what they know and trying to make it the best as possible.”
As part of the interviews, the two students in more progressive visual arts classes, Vinci and Ross, talked about how choice in the art room increased their interest and engagement in art. Ross stated, “I just liked being able to do whatever.” Although this statement sounded as if the requirements and structure were vague, the teacher had clear requirements about digital programs, purposes of the assignments, and techniques students needed to learn and integrate. What the teacher left open to students was the choice of concept and the type of visual imagery students could develop. Vinci described similar feelings in being able to design a website about an artist of his choosing and picking a song to illustrate. Picasso also had opportunities for student choice, particularly in the calligraphy and figure projects. However, more opportunities for student choice existed in his Digital Photography class, for which he expressed a clear preference. In contrast, the student in culinary arts had little opportunity for choice, as the recipes and meals were chosen by the teacher. Hetland et al. (2013) explain, “Teachers can help students engage by setting up projects that include choice, a practice often under-emphasized” (p. 59).

The students showed varying levels of engagement. At the beginning of the semester, Picasso, in his first semester of art, showed the lowest level of engagement and Ross, in his third semester of art, showed the highest. By the end of the semester, the difference in student engagement was greatest for the student in his first time in an inclusive art class, increasing by 36%. In contrast, the student in culinary arts showed a small difference in engagement, increasing by just over 3%; however, this student did start the semester at a much higher level of engagement.

Because of the small sample size, it is hard to make generalizations, but a pattern of engagement emerged from this research. For the three students in visual arts, engagement at the beginning of the semester was correlated to their previous number of art classes taken, so the student with the most art experience had the highest level of engagement. However, changes in
engagement from the beginning to the end of the semester were most significant for the student in his first semester of art. About the student in his first semester of art, the teacher reflected, “I feel that we got to a place that was productive. There were certain days that were better than others.”

In talking with students and teachers at the end of the semester, additional insights regarding what motivated students were revealed. The student in culinary arts expressed and demonstrated a clear preference for the hands-on lab days, saying that “everybody really goes into foods just to cook.” Students in visual arts described not only the freedom of choice in developing personal projects but also the teaching style. One student stated, “He shows it to you on the big screen, breaks it down, and not just hands it to you.” This statement demonstrated the student needed to receive information in multiple modalities and structured in a way that supported his learning. With these teaching techniques, the student was able to effectively learn the concepts and apply them to his own work. This was in contrast to the culinary arts teacher who mainly provided verbal directions and rarely gave demonstrations. The students also described peer and teacher relationships as motivating factors to engage in learning.

Developing peer relationships. One of the research questions addressed the ability of visual arts to impact positive peer-to-peer interactions over the course of the semester. Observational data were collected at the beginning and end of the semester. The three students in visual arts and the student in culinary arts exhibited an increase in the percentage of possible positive peer-to-peer interactions. The student in his first semester of visual arts had the greatest increase in percentage of positive peer-to-peer interactions, increasing by over 30%. The students in their second and third semester of visual arts increased 7% each. The student in culinary arts
had the least percent increase at 6%. The interviews with students and teachers further revealed information regarding the development of peer relationships.

The students in the visual arts classes commented positively on their ability to casually interact with peers during art. When I asked Picasso what he liked best about art, he said, “Mostly socializing.” However, his remark about liking art for socializing seemed to be contradictory to his behavior at the beginning of the semester. The teacher confirmed this in her own observations: “He doesn’t socialize with anyone in the class; he doesn’t seem to have any friends in the class.” While Picasso did not outwardly exhibit social behaviors, he did value the opportunity and, by the end of the semester, had greatly changed his behaviors by actively seeking out interactions with classmates. Vinci commented that he had opportunities to talk to people more in digital foundations than his other classes and that has led to him getting to know people better.

Vinci’s teacher stated, “I allow them to be involved in conversations as long as their work continues….Most of the times their conversations start to be more about the work they are making.” The teacher described this relaxed classroom environment as important “so they feel more comfortable, so they are willing to share their ideas with others, and then when we have critiques, they are more willing to trust each other.” Ross’s art teacher also stated that the social nature of the art classroom was important for students, and he allowed students to socialize as long as it did not interfere with their work.

In talking with each of the students in visual arts, I inquired into the development of friendships outside of the classroom environment. Because these students are often isolated, it is important for them to connect to other students in the schools. Additionally, one of the students had suffered from bullying and struggled with friendships outside of art. All three students stated
they had developed friendships outside of class. When asked to describe the nature of these relationships, the students identified interactions on social media such as Instagram, online message boards, Facebook, and Snapchat. Two of the three students were also engaging with their friends in person outside of the classroom environment.

In contrast, the culinary arts student, Flay, did not have the same opportunities to socialize. Unlike the visual arts classrooms in which students had the freedom to move around the room or interact with students online, the culinary arts teacher mentioned that “there was really no opportunity that he had to interact with other students.” Although Flay appeared to develop a familiarity with some of the students, he did not develop any friendships outside of the class. Flay stated, “Towards the end, I probably became more open to talking to other people, but there are still people that I don’t really talk to or associate with because of the personalities. I don’t want to deal with other people’s drama.”

As students spend more time in visual arts classes, they learn from and with their peers. Through this process students learn acceptable behaviors in working with peers and critiquing others’ work as well as how to accept feedback on their own work. The three students in art also described developing friendships with peers and learning to accept and value fellow students with differing perspectives. Yet these kinds of social interactions need to be practiced over several semesters or years, as the data from this research suggest that students in each consecutive art class increase these skills. This is supported by research that shows training and practice should be implemented over a period of six to nine months, which is the equivalent of two semesters, to optimize maintenance and generalizability of social skills (Maag, 2006).

There were several conditions in the visual arts classroom that led to positive student interactions. First was the freedom to move around class and interact with fellow students in non-
structured ways, which led to the ability to practice and develop relationships that extended out of the classroom environment. Second, the students’ personal interests, such as comics or music, were valued, and the arts classroom provided opportunities for students to interact with others of varying perspectives. Eisner (2002) stated the arts celebrate multiple perspectives, as illustrated at the end of the semester by one student who reflected about his classmates: “They have their own perspective and do the work they want to do.” Finally, the student in his third semester of art was able to take a mentorship role in the classroom, assisting fellow students with the aspects of the digital program. For the three students in visual arts, the classroom provided opportunities to develop and practice social interactions that led to meaningful relationships between peers.

**Student and teacher relationships.** Through the interviews with students it became apparent that their relationships with the teachers mattered greatly. Students said variations of, “I like him; he’s cool,” or commented on the teacher’s ability to joke around in class. Every teacher in the study made a concerted effort to connect with the students, asking them about their favorite books or shows, checking in on difficult days, and providing one-on-one assistance. Yet, from the beginning to the end of the semester the social interaction with the least mean difference in score was student and teacher relationships. Interestingly, the students never mentioned a desire to please the teacher, even though they valued the relationship.

In reflecting on the comments students made in contrast with the data on student observations, it became apparent that the number of positive student-to-teacher interactions was not essential. Instead what was important to the students was the kind of classroom culture the teachers were creating. Students described classrooms in which they felt safe, respected, and valued. One student stated, “As long as you get your work done, he [the teacher] is okay with it.” Another student explained it was important to “see a friendly face.” He went on to explain that
“different teachers have different personalities . . . you have that person that yells all the time . . . and I be like it’s not that serious.” Those comments indicated that students appreciated a relaxed environment in which they were respected and allowed to converse as long as they were producing work.

During the interviews, none of the teachers attributed the art content to the reasons students felt safe in the classrooms. They talked more about the environment and pedagogy that led students to feel this way. Ross’s teacher stated, “So a lot of these kids I have known for a long time, so I have built a rapport . . . He just feels very comfortable and safe in the art classroom.” In reflecting on this, it appears that one unanswered question from this research is how visual arts classrooms create comfortable and safe spaces for students.

The heart of this research is not about what students did in art, but what they learned through art. By examining the artwork produced by the students in the study, it was possible to see visual products as a reflection of these students’ ways of seeing the world. In foundation classes in which students practice observing, Picasso learned to more accurately see the world around him. Both Picasso and Vinci struggled as novice image makers to interpret, focusing on details rather than being able to make generalizations and see the big picture. Additionally, Ross’s and Picasso’s work exhibited characteristics of isolation, frustration, and negative feelings of self-worth. As students learn to observe, interpret, and express themselves through visual imagery, they also build skills of envisioning other ways of being. Through the interviews, the students described how they learned about other students’ ways of thinking and creating through the interactions in art classes. However, the data regarding the students’ ability to envision other ways of being and then act on it or transfer the skills learned in visual arts to other areas—as measured by GPA, class rank, and graduation—proved inconclusive. Finally,
pedagogical and curricular approaches used in the visual art rooms were clear reasons for student engagement. Through engaging students in learning, those same students were given opportunities to positively interact with and develop social interaction skills with their peers. It became clear that the student and teacher relationships were a large motivating factor for students’ engagement in elective classrooms. While this data suggests promising results of inclusion for students with ED in visual art classes, there were many challenges as well.

Challenges to Including Students with ED in Visual Arts Classes

This study was developed under the belief that inclusive approaches to art education are the optimal approach for students with ED. However, challenges occur in successfully including students with ED in these classroom settings. Rosenberg et al. (2010) state that teachers often feel they cannot handle students with ED and lack the expertise and skills to address extreme behaviors. Students in this study exhibited externalizing behaviors that were sometimes disruptive to the classroom environment, such as walking out of class, calling out to students, and having difficulty interacting with peers. Students also exhibited avoidance behaviors that teachers often tried to address through redirection. These behaviors sometimes required teacher interventions, breaks in instruction, or additional effort on the part of the teacher. One teacher stated, “He is extremely enthusiastic, but also in need of gratification of people’s awareness of his presence. He tends to have an issue with getting to class on time. I almost start to wonder if he shows up late, just so people notice him walking in the room.” While all the teachers stated they had received IEPs with accommodations for each of the students, one teacher noted that the IEPs lacked information on how to address challenging behaviors.

Teacher: In the beginning it really frustrated me, because I thought you know there has to be a way to win this kid over, there has to be a way to make it fun for him. Or to help him relax to get him out of his shell a little bit.
Interviewer: But you don’t get any sort of dialogue about well when he puts his head down in these classes these are what other teachers do or these are techniques we have found that are really good at engaging him?

Teacher: No not at all.

Interviewer: Okay, this is good information to know, because I feel like the amount of information that the teachers are getting is regarding these students is very minimal.

Teacher: It is very minimal.

The teacher who made this comment was a new teacher in the school. Other teachers in the study noted that they knew strategies because they had either reached out directly to the case supervisor or had developed a working knowledge of effective approaches for redirecting the student through previous experiences.

According to Keifer-Boyd and Kraft (2013), there are a “number of barriers that may impede successful inclusion of students experiencing moderate to severe disabilities within the art classroom setting” (p. 79). Through observations it was noted that students in this study often required a larger percentage of the teacher’s attention than their peers. Teachers were sometimes observed spending 10-20% of the class period interacting with the individual students in this study even though the classrooms consisted of 25-30 students. Unlike students with learning disabilities or cognitive disabilities, para-educators did not appear to provide support for students with ED in the classroom. However, these students often needed extra support in academic learning, including developing ideas, staying engaged in learning, using new technologies, and refining ideas. However, many para-professional and teachers’ aides have limited knowledge of artmaking and digital computer programs and would therefore be an ineffective support. It seemed that the students and teachers would benefit from smaller class sizes in which they could focus more attention on each student.
One important aspect of how disability impacted student learning was simply how much or little work the students completed. Because this particular group of students struggled with engagement in learning, they often completed less work than their peers. The students were frequently absent, and one sometimes skipped classes. Picasso, in his first semester of art, spent less time on each piece of work than his peers, telling the teacher “I’m done” and sat and read while other students were still working. Vinci, in his second semester of art, often spent long periods of time starting to engage in the project. The student in his third semester of art exhibited few of these behaviors but was often seen browsing the internet during class. These actions no doubt impacted the amount of student learning that occurred but should have been accommodated for, as it was a direct result of his disability.

Despite the challenges, all teachers in this study commented that they would welcome the student back to the class, and two of the three art students did continue in classes with the same teacher. The culinary arts student chose not to continue in culinary arts. However, these teachers also knew the purpose of the study and may have felt pressured to make such a claim to support the research. While including students with ED may present challenges, it is clear from the interviews that the students not only benefited but also greatly enjoyed their arts experiences.

**Recommendations**

Based on the findings of this research, two areas of recommendations can be made. The first set of recommendations examine engaging students with ED in visual arts classes. The second set of recommendations regards art education as an opportunity to practice social skill interactions and develop studio habits of mind (Hetland et al, 2013).

What should art teachers consider to effectively engage students with ED in visual arts classes? Many art teachers may be used to working with students who are enthused about
participating in art. While the four students in this study expressed a desire to be in visual arts and culinary arts during their interviews, the teachers were often surprised to find out the students had chosen to be in the class because they sometimes exhibited behaviors that seemed to be in contradiction to these statements. Avoidance and off-task behaviors included students putting their head down in class, failure to engage in work, and failure to complete work. All four students also exhibited behaviors reflective of issues of acceptance and belonging, including struggling to appropriately interact with peers and creating visual work reflective of personal feelings of lack of self-worth. However, students’ behaviors improved as they became more engaged in the work of the class. For teachers working with students with ED, more information regarding effective strategies provided with the IEP and accommodations documents would be beneficial in implementing strategies from the beginning of the teaching experience.

Teachers should be reminded that students with ED need extra encouragement and support to engage in the work of the lesson. From this research, strategies have been identified that successfully engage students. Supporting student learning can occur through verbal reminders, one-on-one tutoring, and developing a rapport with students. Teachers should help students feel accepted through creating personal connections and demonstrating understanding of differences in behavior for students with ED. All of the teachers in the study mentioned making an effort to discover students’ personal interests through discussions about other classes the students were taking, books students were reading, music students were listening to, or exploring outside interests. To effectively communicate lesson ideas and instruction, teachers need to incorporate strategies in which information is presented through multiple modalities such as blogs, worksheets, PowerPoints, videos, and demonstrations. Additionally, information should
be available so students can easily reference instructions at a later time. This is especially helpful for students with ED who may miss classes or struggle to engage in instruction on specific days.

The students in visual arts for this study were particularly interested in contemporary projects in which they were able to make connections to visual culture. Traditional foundations classes often focus on building skills through the exploration of principles and elements of design through projects such as a still life or figure drawing. However, all three of the students in visual arts participated in a postmodern digital class that included and valued visual culture such as popular-culture brand logos, comics, graphic novels, movies, websites, and advertising media. Two of the students enjoyed a project in which they designed a composite image based on a favorite song. All of the students placed a high value on choice and personal expression, which may not be present in a traditional skill-based or foundations class. Their scores on artwork with extensive opportunities for personal choice consistently scored higher. Teachers should consider building opportunities for incorporating postmodern philosophies of visual culture, conceptual development, and meaningful personal choice into as many projects as possible.

How can teachers and administrators support students with ED to develop social skills and interactions through visual arts? Traditionally, social skills have been taught in small-group settings. Additionally, students with ED may spend large portions of their days in structured and segregated classes designed for students with ED. However, the current research suggests that students may benefit from opportunities to practice and develop social interactions in inclusive environments (Patterson et al., 2006). Students with ED in inclusive visual arts classrooms have the ability to interact with peers who exhibit appropriate social interactions. Art classes present low-risk opportunities for students to engage in peer tutoring and critiques, practicing social interactions in a natural setting. Teachers should discuss and model appropriate
behaviors for these social interactions. The benefit to allowing students to develop these skills in visual arts classrooms is a curriculum and pedagogy that build on student interests and engage students in peer interactions while reinforcing positive behaviors and social skills. When appropriate, students with ED should enroll in inclusive visual arts classrooms to practice and develop social interactions.

**Suggestions for Further Research**

Several areas for future research emerged from the research. First is how visual arts classrooms create the sense of comfortable and safe spaces for students. Throughout the research, students emphasized their comfort within the art room and their fondness for the art teacher. Research into this issue should be completed in two phases. First a large-scale survey of high school students in visual arts should be completed to determine if the idea of the art room as a comfortable and safe space holds true for a larger population. Then a multiple case study method incorporating interviews and observations could be conducted to better understand the classroom culture that exists in visual art rooms. Further research into this issue could prove important in understanding the unique nature of art rooms.

The second area involves the attributes of curriculum in digital vs. traditional fine arts classrooms. From this research, it became apparent that the digital classes incorporated more contemporary visual culture while providing opportunities for student choice. It is unknown if this was due to the sample from the study or reflective of a greater trend in high-school arts. From this study it became apparent that more information is needed regarding trends in content subject matter and pedagogical approaches in art education. A large-scale survey designed to elicit responses from a representative sample of high school teachers regarding course titles, curriculum focus, inclusion of visual culture, assignments, and opportunities for student choice
could lead to insights regarding different and similar emphases of digital classes vs. traditional methods in visual arts education.

The third and final unanswered question is in regard to the relationship among arts participation and GPA, class rank, or graduation status for students with ED. Because the sample size was too small to find statistically significant results for some of the tests, this research would need to be replicated with a larger population to re-address the question. For statistical significance to be found for GPA and class rank, a minimum of n=159 transcripts would need to be collected. Additionally, to analyze statistical significance for graduation status, a sample of transcripts would need to be five times larger with an n=415. Because of the low prevalence of this disability type and limited access to inclusive visual arts classes, this larger study size would either come from working in a very large district with 20,000 or more high school students or several districts with a combined enrollment of at least 20,000 high school students.

**Reflections**

As someone who has benefited from participation in visual arts education and taught students with ED, this study was designed to research the benefits of an inclusive visual arts experience. However, several assumptions, based on researcher bias, were made about the research. Coming into this research, there was an assumption that students would enjoy participation in visual arts and grow through this experience. This study was also developed under the belief that inclusive approaches to art education were the optimal situation. There was also an assumption, based on personal experience and literature, that students who participated in visual arts would show significant increases in GPA. The use of second observers, multiple raters, and triangulation of data helped to minimize researcher bias in data collection and analysis.
The challenges of gaining access to work with this population proved to be much greater than initially anticipated. School districts and parents were often wary of participation. Several school districts declined to participate in this study. Over half of the identified population of students declined to participate. Due to issues of privacy, the researcher was unable to contact the parents or students to discuss the study until they had agreed to participate. Additionally, two school districts had no students with ED in inclusive visual arts classes. One school district explained that because this population of students was behind academically, they often had to retake classes. If they had an elective period, they were encouraged to take physical education. These may be some of the reasons that so few studies regarding research with students with ED in visual arts have been published.

This research is significant for the field of art education and special education because it adds to an area in which little research has been conducted. Few studies have been published that focus on art education and students with ED, and the nature of these studies varied, with only one including quantitative data (Isis et al., 2010; Lepic, 2004; Munley, 2011; Tomaszkiewicz, 1984; Viglione, 2009). Only five studies have reported findings that describe elements of cognitive engagement and arts for students with ADHD, ED, and LD (Anderson, 2015). Previous research has examined art skill development for students with disabilities, but there is a lack of knowledge regarding artmaking for students with ED. While the literature review demonstrated correlations between arts participation and general academic achievement, there is almost no research that focuses on correlations exclusively for students with disabilities, particularly on art education for students with ED. Additionally, research in the field of special education has focused almost exclusively on behavioral interventions from behaviorist or cognitive approaches for students with
ED. Instead this research focuses on the ability of students to build art skills and change behaviors through constructivist pedagogical approaches.

**Conclusion**

This case study, which included four high school students with ED in elective hands-on classes and historical data from two high schools, illustrated important examples about how students with ED can learn and interact with peers and teachers. Hetland et al. (2013) explain that “getting good at anything requires persistence . . . and engaging in work is the key to persistence in any discipline” (p. 59). Over time the three students in visual arts developed fluency and skills in artmaking, which leads to confidence in their work and better peer relationships. Additionally, all the students with ED highly valued the teacher relationship, which can best be built up over time. However, it became clear that the students and teachers had different interpretations of their behaviors in the class, which was problematic. Yet, perhaps the most significant finding for students with ED is that a highly structured environment is not necessarily required for students to be successful. Rather, a pedagogical approach that emphasizes student interaction and personal choice allowed students to effectively interact with peers and promoted student learning and social skills.

In this study, students with ED were successful in less structured environments, with constructivist approaches, by learning from and with peers regarding social norms, engaging in work, and developing visual arts skills. Students were exposed to acceptable social norms such as individual work habits, working with peers, providing critique of other’s work, and accepting feedback on their own. For the students in visual arts, Picasso, Ross, and Vinci, they described developing friendships with peers and learning to accept and value fellow students with differing perspectives. Additionally, all three students described how their peers influenced their
artmaking. Picasso and Vinci were inspired to create higher quality images due to the work they observed peers creating. Ross responded to his peer’s critique of his lack of color and started to incorporate more colors into his own work. In contrast, the student in the culinary arts class was in a more highly structured environment with little opportunity for personal choice and student interactions. Unlike the other students in this study, he did not exhibit or describe situations in which he learned through his observations of or interactions with peers, nor did he develop friendships with his classmates.

Students with ED and their teachers had different perceptions of their motivation, achievement, and attitudes. In observations students were observed exhibiting avoidance behaviors, disruptive behaviors, slow to engage in work, and rebuffing peers. The exception to this was Ross, who exhibited these behaviors to a lesser degree than the others, which may be reflective of his disability or the fact he was in his third class with the same art teacher. For the other three students, at the beginning of the semester, the teachers all expressed doubt as to why they were enrolled in their classes and whether they enjoyed their time there. However, through interviews, the students expressed a clear desire to be in the classes and interact with peers. All four of the students had taken the elective classes for specific reasons and looked forward to their time in the class. The gap between the teacher’s interpretation and the student’s statements represent a clear difficulty in working with students with ED. Teachers need to be reminded that for students with ED their behaviors are often inconsistent with their internal emotions.

Even though several of the students with ED exhibited below-grade-level skills in artmaking, they improved in their use and application of technical, formal, and conceptual skills in visual arts. The pilot studies indicated that students with ED may enter a high school art class with skills below those expected of their age. One of the teachers from the pilot study suggested
this may be due to frequent absenteeism associated with their disability. It was unknown if, for these students, they would demonstrate an increase in skills related to visual arts, especially in as little as 14-16 weeks. The scores from their artwork over the course of the semester demonstrated that every student improved in technical skills, formal qualities, and conceptual complexity areas by at least one point, with the most growth in conceptual complexity. While one of the teachers from the pilot study surmised that students with ED might struggle with abstract thinking in similar ways to students with autism, this proved to be untrue. Rather, the large increases in conceptual complexity demonstrate that regardless of technical skill, students engaged in abstract concepts and developed ideas with originality and sophistication. It was found that for students with low technical skills in areas of drawing and painting, engaging in digital work proved to be highly rewarding due to the quality of images produced.

These case studies led to insights about students with ED regarding learning in the visual arts, challenges in successfully participating in inclusive environments, pedagogical environments that supported student interactions and learning, and correlations between visual arts participation and general academic achievement. Additionally, the interpretation revealed important information regarding perceptions of student engagement and interest, the student-teacher relationship, student interactions with peers, and accommodating disability. A key aspect of this research was utilizing the case study method, which values each student as a unique individual. While some students may exhibit behaviors that are challenging in the day-to-day teaching experience, educators must remind themselves that no child comes to school wanting to fail. Instead students need support through student-teacher relationships and progressive curricular and pedagogical approaches to develop skills necessary to becoming a successful adult. There are other implications that can be drawn from the findings of this research. Some of those have been mentioned in the interpretations
section of this chapter. Other conclusions and implications may be drawn by those who read this dissertation, especially persons who look at the data through a different theoretical perspective.

Blandy (1991) expressed concern about art teachers’ dependence “on a functional-limitations orientation” (p. 141). Past research on students with ED has focused mainly on improving behaviors, with little attention to art skill development or a link between arts education and social skill development. Data from this research study demonstrates that students with ED have the ability to increase their engagement in arts learning when provided an arts education experience that promotes postmodern approaches, including student choice, social interactions, and contemporary visual imagery. However, the data also indicate that students benefited the most from sustained engagement in the arts. It is hoped that this research demonstrates that sustained engagement in the arts may be key for significant and maintained changes in student art learning, social skill interactions, and general academic achievement.
References


APPENDIX A
QUESTIONS FOR ART TEACHER INTERVIEWS AT THE BEGINNING
OF THE SEMESTER
Appendix A

Questions for Art Teacher Interview at the beginning of the semester

1. Can you first describe the setting in which you teach art?
   Take details of:
   a) Place
   b) Type of school
   c) Grade level
   d) number of classes
   e) number of students per class

2. Next can you describe in more depth the various art classes you teach?
   Take details of:
   a) what is the subject area?
   b) what is the mediums you work with?
   c) what are the goals for each class?
   d) how much experience are students expected to have in visual arts to take this class?

3. I would like to get a sense of your philosophical approaches regarding art education:
   a) What do you see as the purpose of art at the high school level?
   b) Reflecting on your teaching, which lesson stands out as your favorite lesson? Why?

4. What sort of social interactions do you plan to include as part of your pedagogy?
   a) In what ways do students interact with each other on a daily basis?
   b) Does mentoring or student led teaching occur in the classroom?
   c) Do you incorporate formative and/or summative critiques?
   d) What is the format for these critiques?
   e) How do students interact with you on a daily basis?
   f) What are the ways you interact with students regarding their artwork? Orally? Written? Daily?
      Weekly?
   g) Do you perform demonstrations?
   h) Do you work one-on-one with students? How often? Is one-on-one tutoring driven by the
      student’s request or the teacher seeing a need?

5. Within your art classes, approximately what percentage of students are diagnosed with a disability of:
   a) ED?
   b) Other disabilities?

6. What are some general ways that you have had to modify and accommodate the lesson to meet the
   needs of students with ED?

7. For students in your classes with IEPs and 504 plans what kind of information do you normally
   receive regarding IEPs, disability, and appropriate accommodations?
a) How is this information communicated to you?

b) If you have questions or concerns regarding a student with a disability what steps would you take? Who would you talk to?

8. This coming semester student ___________ with ED will be in one of your classes. Have you previously interacted with/taught this student?
   a) If you have experience with this student, what are your general observations regarding this student?
   b) What strengths/weaknesses have you seen regarding social interactions?
   c) What strengths/weaknesses have you seen regarding art skills?
   d) What strengths/weaknesses have you noted regarding conceptual skills and art?
       **** repeat this question for each student with ED the teacher will be working with during the semester

9. I would like to get a sense of the curricular goals for the class that student ________________ with ED will be taking with you:
   a) What class will this student be taking with you?
   b) What are some of the major projects that will occur as part of this class?
   c) What media will you be working with as part of this class?
   d) What skills do you plan on teaching as part of this class?
   e) What are some of the concepts/big ideas you hope to teach in this course this semester?
   f) In what ways do you plan to document/measure student growth in art skills?
   g) In what ways do you plan to document/measure student growth in art concepts?
       **** repeat this question for each student with ED the teacher will be working with during the semester

10. Thank the teacher for taking the time to do a pre-interview and make a plan for observations, collection/documentation of student work and the mid-term interview.
APPENDIX B
QUESTIONS FOR ART TEACHER INTERVIEWS AT THE END
OF THE SEMESTER
Appendix B

Questions for Art Teacher Interview at the end of the semester

1. To start off with I would like to get your general thoughts on how things have gone this semester with ____________ student.
   a) What comments or information would you like to share in regards to this student?
   b) What do you think has been this students’ greatest success in the semester?
      (if this is different from mid-term interview follow up on the changes)
   c) What do you think has been the most challenging issue for this student so far?
      (if this is different from mid-term interview follow up on the changes)

2. Take the time to look through the images of student work with the teacher. Describe what you see as the skill and conceptual goals for each project. Ask the teacher to provide information and confirm the researcher’s conclusions about each image, discussing strengths and weaknesses.

3. At the mid-term interview, I asked you to describe the social interactions of students __________________________. I would like to take some time to start by reviewing these interactions:
   a) In what ways does ______________ interact with each other on a daily basis?
   b) Has ______________ engaged in any sort of mentoring relationship?
   c) Are there any peer relationships that student ________________ is struggling with handling appropriately?
   d) Do you feel the student is responsive to formative critiques? What evidence or change in the artwork have you seen that supports this?
   e) Do you feel the student is responsive to summative critiques? What evidence have you seen that supports this?
   f) How do students interact with _______________ on a daily basis?
   g) What are the ways you interact with students regarding their artwork? Orally? Written? Daily? Weekly?
   h) What if any changes have you seen in how student _______________ is interacting with you and other peers in the class?
   i) Do you feel that there are any parts of class/the lesson that student _____________ is not engaged with or struggles to complete? How have you tried to address this? Have you seen any changes in how this student is engaged in class throughout the semester?
   ** If there any changes or follow up from the mid-term address with the teacher
   **** repeat this question for each student with ED the teacher will be working with during the semester

4. At our last meeting you noted the following strengths/weaknesses of student ____________ regarding art skills: (use the student artwork images for this discussion)
   a) Have you seen changes in art skills?
   b) Can you give examples of areas in which you have seen changes?
c) You had said in the first meeting you would be addressing _______________ art skills. Do you feel that student _______________ has demonstrated a high level of each of these skills? Can you explain why or why not?

**** repeat this question for each student with ED the teacher will be working with during the semester

5. At our last meeting you noted the following strengths/weaknesses of student _______________ regarding conceptual skills and art: (use the student artwork images for this discussion)
   a) Have you seen changes in art conceptual skills?
   b) Can you give examples of areas in which you have seen changes?
   c) You had said in the first meeting you would be addressing _______________ big ideas or concepts. Do you feel that student _______________ has demonstrated understanding about each of these ideas? Can you give examples?

**** repeat this question for each student with ED the teacher will be working with during the semester

6. Can you describe the project that has been the most successful for student _______________?
   a) Why do you think this project was successful? (use the student artwork images for this discussion)

7. Can you describe the project that has been the least successful so far for student _______________?
   a) Why do you think this project was difficult? (use the student artwork images for this discussion)

8. What do you think the greatest challenge has been for this student in your class?

9. What do you think has been the most challenging thing for you working with this student?

10. What might you do differently in the future when working with a student with ED?

11. What other information would you like to tell me about student _______________?

12. Thank the teacher for taking the time to do a final interview and participating in the research project.
APPENDIX C

QUESTIONS FOR NON-CORE SUBJECT AREA TEACHER INTERVIEWS
AT THE BEGINNING OF THE SEMESTER
Appendix C

Questions for Non-Core Subject Teacher Interview at the beginning of the semester

1. Can you first describe the setting in which you teach?
   Take details of:
   a) Place
   b) Type of school
   c) Grade level
   d) number of classes
   e) number of students per class

2. Next can you describe in more depth the various classes you teach?
   Take details of:
   a) what is the subject area?
   b) what is the mediums you work with?
   c) what are the goals for each class?
   d) how much experience are students expected to have in visual arts to take this class?

3. I would like to get a sense of your philosophical approaches regarding education:
   a. What do you see as the purpose of ______ (the non-core subject class) at the high school level?
   b. Reflecting on your teaching, which lesson stands out as your favorite lesson? Why?

4. What sort of social interactions do you plan to include as part of your pedagogy?
   a. In what ways do students interact with each other on a daily basis?
   b. Does mentoring or student led teaching occur in the classroom?
   c. Do you incorporate formative and/or summative critiques?
   d. What is the format for these critiques?
   e. How do students interact with you on a daily basis?
   f. What are the ways you interact with students regarding their work? Orally? Written? Daily? Weekly?
   g. Do you perform demonstrations?
   h. Do you work one-on-one with students? How often? Is one-on-one tutoring driven by the student’s request or the teacher seeing a need?

5. Within your classes, approximately what percentage of students with disabilities are classified as:
   a) ED?
   b) Other disabilities?

6. What are some general ways that you have had to modify and accommodate the lesson to meet the needs of students with:
   a) ED?
7. For students in your classes with IEPs and 504 plans what kind of information do you normally receive regarding IEPs, disability, and appropriate accommodations?
   a. How is this information communicated to you?
   b. If you have questions or concerns regarding a student with a disability what steps would you take? Who would you talk to?

8. This coming semester student ___________ with ED will be in one of your classes. Have you previously interacted with/taught this student?
   a. If you have experience with this student, what are your general observations regarding this student?
   b. What strengths/weaknesses have you seen regarding social skills?
   c. What strengths/weaknesses have you seen regarding art skills?
   d. What strengths/weaknesses have you noted regarding conceptual skills and art?
   **** repeat this question for each student with ED the teacher will be working with during the semester

9. I would like to get a sense of the curricular goals for the class that student ________________ with ED will be taking with you:
   a. What class will this student be taking with you?
   b. What are some of the major projects that will occur as part of this class?
   c. What media will you be working with as part of this class?
   d. What skills do you plan on teaching as part of this class?
   e. What are some of the concepts/big ideas you hope to teach in this course this semester?
   **** repeat this question for each student with ED the teacher will be working with during the semester

10. Thank the teacher for taking the time to do a pre-interview and make a plan for observations, collection/documentation of student work and the mid-term interview.
APPENDIX D
QUESTIONS FOR NON-CORE SUBJECT TEACHER INTERVIEW AT
THE END OF THE SEMESTER
Appendix D

Questions for Non-Core Subject Teacher Interview at the end of the semester

1. To start off with I would like to get your general thoughts on how things have gone this semester with ___________ student with ED
   a) What comments or information would you like to share in regards to this student?
   b) What do you think has been this students’ greatest success in the semester?
      (if this is different from mid-term interview follow up on the changes)
   c) What do you think has been the most challenging issue for this student so far?
      (if this is different from mid-term interview follow up on the changes)

2. At the mid-term interview, I asked you to describe the social interactions of student ___________. I would like to take some time to start by reviewing these interactions:
   a) In what ways does ______________ interact with each other on a daily basis?
   b) Has ______________ engaged in any sort of mentoring relationship?
   c) Are there any peer relationships that student ______________ is struggling with handling appropriately?
   d) Do you feel the student is responsive to formative critiques? What evidence or change in the artwork have you seen that supports this?
   e) Do you feel the student is responsive to summative critiques? What evidence have you seen that supports this?
   f) How do students interact with ______________ on a daily basis?
   g) What are the ways you interact with students regarding their artwork? Orally? Written? Daily? Weekly?
   h) What if any changes have you seen in how student ______________ is interacting with you and other peers in the class?
   i) Do you feel that there are any parts of class/lesson that student ______________ is not engaged with or struggles to complete? How have you tried to address this? Have you seen any changes in how this student is engaged in class throughout the semester?
** If there any changes or follow up from the mid-term address with the teacher
**** repeat this question for each student with ED the teacher will be working with during the semester

5. Can you describe the project that has been the most successful for student ______________?
   a) Why do you think this project was successful?

6. Can you describe the project that has been the least successful so far for student ______________?
   a) Why do you think this project was difficult?

7. What do you think the greatest challenge has been for this student in your class?

8. What do you think has been the most challenging thing for you working with this student?

9. What might you do differently in the future when working with a student with ED?
10. What other information would you like to tell me about student ________________?

11. Thank the teacher for taking the time to do a final interview and participating in the research project.
APPENDIX E

QUESTIONS FOR ART STUDENTS WITH ED AT THE BEGINNING OF THE SEMESTER
Appendix E

Questions for art students with ED – Beginning of the Semester

(This interview starts with open-ended questions, students may answer some of the later questions in the first two questions)

1) Tell me about your experience in art classes:
2) Describe your favorite project that you have done in high school art:
3) Describe the visual arts classes you have taken in high school:
   Take Detail of:
   a. Number of classes
   b. Types of classes
   c. Medium learned in those classes
   d. Number of classes per year
4) Why did you take these art classes? (some probing on the following details may be necessary)
   a. Requirements by school
   b. Under advisement by someone- who is that person?
   c. Personal choice
   d. Interest in teacher
   (if this is the students first art class jump to question #9)
5) Which was your favorite art class and why? (some probing on the following details may be necessary)
   a. Title of class
   b. Focus of class
   c. Mediums worked with in class
   d. What you did in the class on a daily basis
   e. Amount of instruction by teacher
   f. Amount of independent work time for student
   g. Outside work completed as part of class?
6) What are some of the art skills that you feel you have learned in your high school experience?
   (some probing on the following details may be necessary)
   a. Materials/mediums you feel comfortable using
   b. Types of art created (drawing from life, conceptual, etc)
   c. Knowledge about artists/art movements/art terminology
7) Do you feel that this class has taught you any skills in how you work with other students?
   (some probing on the following details may be necessary)
   a. Working in groups
   b. Ability to respond to criticism by other students
   c. Respect for other students’ opinions
   d. Other responses
8) What are some of the other ways in which taking art has influenced your experience in high school?
   a. How do you feel when in art class?
b. How do you feel about school when you are taking art classes vs. when you are not taking art classes?

c. Other responses

9) Do you make artwork outside of school? (provide options, comics, painting, drawing, digital art, photography)
   a. Describe the material method:
   b. Why do you like this kind of artwork?

10) What do you feel are your strengths in art skills? (some probing on the following details may be necessary)
   a. Materials/mediums you feel comfortable using
   b. Types of art created (drawing from life, conceptual, etc)
   c. Knowledge about artists/art movements/art terminology

11) In the past when you have taken art classes- what has been your favorite project and why?
   a. Do you have a favorite artist?
   b. Do you have a favorite art style?

12) What are you hoping to learn in this class?

13) In regards to interacting with other people and staying on task:
   a. Do you feel that you know what kind of behaviors are expected of you?
   b. Have you participated in critiques before? Did you like them?
   c. How do you feel when a teacher gives you suggestions to improve your project?
   d. How do you feel when a student gives you suggestions to improve your project?
   e. Is there any part of the class you find it difficult to pay attention/stay on task (i.e. during teacher presentations, demonstrations, independent work, clean up)?

14) What do you most look forward to in art?

15) What are you most concerned about in regards to art class?
APPENDIX F
QUESTIONS FOR ART STUDENTS WITH ED AT THE END OF THE SEMESTER
Appendix F

Questions for art students with ED – End of the Semester

(This interview starts with open-ended questions, students may answer some of the later questions in the first two questions)

1) Tell me about your experience in art classes:
2) Describe your favorite project that you have done in high school art:
3) Do you feel that this class has taught you any skills in how you work with other students? (some probing on the following details may be necessary)
   a. Working in groups
   b. Ability to respond to criticism by other students
   c. Respect for other students’ opinions
   d. Other responses
4) What are some of the other ways in which taking art has influenced your experience in high school?
   a. How do you feel when in art class?
   b. How do you feel about school when you are taking art classes vs. when you are not taking art classes?
   c. Other responses
5) Do you make artwork outside of school? (provide options, comics, painting, drawing, digital art, photography)
   a. Describe the material method:
   b. Why do you like this kind of artwork?
6) What do you feel are your strengths in art skills? (some probing on the following details may be necessary)
   a. Materials/mediums you feel comfortable using
   b. Types of art created (drawing from life, conceptual, etc)
   c. Knowledge about artists/art movements/art terminology
7) In regards to interacting with other people and staying on task:
   a. Do you feel that you know what kind of behaviors are expected of you?
   b. Have you participated in critiques before? Did you like them?
   c. How do you feel when a teacher gives you suggestions to improve your project?
   d. How do you feel when a student gives you suggestions to improve your project
   e. Is there any part of the class you find it difficult to pay attention/stay on task (i.e. during teacher presentations, demonstrations, independent work, clean up) ?
8) Did you feel that your social interactions changed in this class throughout the semester?
   a. Why?
9) What project/part of the class did you most enjoy in?
10) What project/part of the class did you enjoy the least?
11) I would like to take some time to look through the samples of your work we collected. For each images ask the student to describe:
   a. The title (if there is one)
b. The skills worked on

c. The concept behind the artwork

d. What decisions they made and why (i.e. Choice of material and subject)

e. What they thought they did well

f. What they would improve on
APPENDIX G

QUESTIONS FOR NON-CORE SUBJECT STUDENTS WITH ED AT THE BEGINNING OF THE SEMESTER
Appendix G

Questions for non-core subject students with ED – Beginning of the Semester

(This interview starts with open-ended questions, students may answer some of the later questions in the first two questions)

1) Tell me about your experience in___________________________ class:
2) Why did you take this class? (some probing on the following details may be necessary)
   a. Requirements by school
   b. Under advisement by someone- who is that person?
   c. Personal choice
   d. Interest in teacher
3) Do you feel that this class has taught you any skills in how you work with other students?
   (some probing on the following details may be necessary)
   a. Working in groups
   b. Ability to respond to criticism by other students
   c. Respect for other students’ opinions
   d. Other responses
4) In regards to interacting with other people and staying on task:
   a. Do you feel that you know what kind of behaviors are expected of you?
   b. Have you participated in critiques before? Did you like them?
   c. How do you feel when a teacher gives you suggestions to improve your project?
   d. How do you feel when a student gives you suggestions to improve your project
   e. Is there any part of the class you find it difficult to pay attention/stay on task (i.e. during teacher presentations, demonstrations, independent work, clean up) ?
5) What do you most look forward to in___________________________?
6) What are you most concerned about in regards to___________________________ class?
APPENDIX H

QUESTIONS FOR NON-CORE SUBJECT STUDENTS WITH ED AT THE END OF THE SEMESTER
Appendix H

Questions for students with ED – End of the Semester

(This interview starts with open-ended questions, students may answer some of the later questions in the first two questions)

1) Tell me about your experience in ________________________ class :

2) Do you feel that this class has taught you any skills in how you work with other students? (some probing on the following details may be necessary)
   a. Working in groups
   b. Ability to respond to criticism by other students
   c. Respect for other students’ opinions
   d. Other responses

3) In regards to interacting with other people and staying on task:
   a. Do you feel that you know what kind of behaviors are expected of you?
   b. Have you participated in critiques before? Did you like them?
   c. How do you feel when a teacher gives you suggestions to improve your project?
   d. How do you feel when a student gives you suggestions to improve your project?
   e. Is there any part of the class you find it difficult to pay attention/stay on task (i.e. during teacher presentations, demonstrations, independent work, clean up) ?

4) Did you feel that your social interactions changed in this class throughout the semester?
   a. Why?

5) What project/part of the class did you most enjoy in?

6) What project/part of the class did you enjoy the least?
APPENDIX I

ANALYTIC RUBRIC FOR ARTWORK EVALUATION
Appendix I

Analytic Rubric for Artwork Evaluation

Technical Skill

<table>
<thead>
<tr>
<th>Performance Level</th>
<th>Performance Descriptor</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Is able to manipulate the chosen media with an outstanding level of confidence and skill. Shows outstanding knowledge of the particular qualities of this media and is able to apply it to the content of the work in a highly expressive manner. The technical resolution in the artwork well exceeds the typical skill potential for student of this age and educational experience.</td>
</tr>
<tr>
<td>4</td>
<td>Is able to manipulate the chosen media with an above average level of confidence and skill. Shows good knowledge of the particular qualities of this media and is able to apply it to the content of the work in a reasonable effective way. The technical resolution in the artwork is above the typical skill potential for student of this age and educational experience.</td>
</tr>
<tr>
<td>3</td>
<td>Is able to manipulate the chosen media with a satisfactory level of confidence and skill. Shows fundamental knowledge of the particular qualities of this media and is able to apply it to the content of the work to achieve a rudimentary level of expression</td>
</tr>
<tr>
<td>2</td>
<td>Has difficulty manipulating the chosen media. The art work is below the basic skill potential for student of this age and experience. Shows limited knowledge of the particular qualities of this media and has difficulty applying it to the content of the work in order to achieve a very basic level of expression.</td>
</tr>
<tr>
<td>1</td>
<td>Cannot manipulate the chosen media. The art work is well below the basic skill potential for student of this age and experience. Shows no knowledge of the particular qualities of this media and does not understand how to apply it to the content of the work in order to achieve a basic level of expression.</td>
</tr>
</tbody>
</table>

Formal Quality

<table>
<thead>
<tr>
<th>Performance Level</th>
<th>Performance Descriptor</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Is able to employ the selected elements and/or principles of design to achieve a high level of resolution in art work. The use of elements and principles achieve highly</td>
</tr>
</tbody>
</table>
effective expressive outcomes and are appropriate to the content of the work. The formal qualities of the art work demonstrate knowledge of composition that well exceeds the typical understanding for student of this age and educational experience.

<table>
<thead>
<tr>
<th>Performance Level</th>
<th>Performance Descriptor</th>
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<tbody>
<tr>
<td>4</td>
<td>Is able to employ selected elements and/or principles of design to achieve a good level of resolution in art work. The use of elements and principles achieve a good level of expressive outcomes and are appropriate to the content of the work. The formal qualities of the art work demonstrate knowledge of composition that is above typical understanding for student of this age and educational experience.</td>
</tr>
<tr>
<td>3</td>
<td>Is able to employ the selected elements and/or principles of design to achieve a basic level of resolution in art work. The use of elements and principles shows some level of expressive outcomes related to the content of the work. The formal qualities of the art work demonstrate basic knowledge of composition that is typical for student of this age and educational experience.</td>
</tr>
<tr>
<td>2</td>
<td>Has difficulty using selected elements and/or principles of design to achieve a small degree of resolution in art work. The use of elements and principles shows limited expressive outcomes which may not necessarily be related to the content of the work. The formal qualities of the art work demonstrate limited knowledge of composition that is below expectations for student of this age and educational experience.</td>
</tr>
<tr>
<td>1</td>
<td>Can not use selected elements and/or principles of design to achieve any degree of resolution in art work. The use of elements and principles shows no expressive outcomes. The formal qualities of the art work demonstrate no knowledge of composition.</td>
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</tbody>
</table>

**Conceptual Complexity**

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<tr>
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<tbody>
<tr>
<td>5</td>
<td>Ideas generated in the work show a very high level of originality and sophistication reflecting extensive research and experimentation. Images, composition, and technical processes are combines to effectively communicate ideas. The content of this work demonstrates conceptual knowledge that well exceeds the typical understanding for students for this age and educational experience.</td>
</tr>
<tr>
<td>4</td>
<td>Ideas generated in the work show a high level of originality and sophistication reflecting some research and experimentation. Images, composition, and technical processes are chosen to communicate ideas in an understandable way. The content of</td>
</tr>
<tr>
<td>Score</td>
<td>Description</td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
</tr>
<tr>
<td>3</td>
<td>Ideas generated in the work show some level of originality and limited sophistication reflecting minimal research and experimentation. Images, composition, and technical processes are chosen to communicate ideas in a basic way. The content of this work demonstrates basic conceptual knowledge typical understanding for students for this age and educational experience.</td>
</tr>
<tr>
<td>2</td>
<td>Ideas generated in the work show a very limited level of originality reflecting very little research and/or experimentation. Images, composition, and technical processes do not combine to communicate well. The content of the work demonstrates very limited conceptual knowledge below the typical understanding for students for this age and educational experience.</td>
</tr>
<tr>
<td>1</td>
<td>Ideas generated in the work are largely derivative showing no original thought with no evidence of research and/or experimentation. Images, composition, and technical processes do not communicate well. The content of the work demonstrates very limited conceptual knowledge below the typical understanding for students for this age and educational experience.</td>
</tr>
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</table>
APPENDIX J
PARTIAL INTERVAL RECORDING FORM
Appendix J

Partial Interval Recording Form

Directions: If student is exhibiting one of the three behaviors listed in the key, then it will be noted with the code. Each student will be observed for five minute on/off for the entire class period.

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<tr>
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</tr>
</tbody>
</table>

Behavior Key:
P-P=Positive Peer-peer interaction, P-T= Positive Student-teacher interaction, SE=Student Engagement
APPENDIX K

EMAIL TO RECRUIT PARTICIPANT ART TEACHER
Email to Recruit Participant Art Teacher:

Dear (Fill in Teacher’s Name):

I am writing to ask you to participate in a study that I am conducting on “Art Education and Students with ED” as part of my doctoral work at Northern Illinois University. As part of this study, I would like to follow art classes that include high school aged students diagnosed as having an emotional disability. The study includes three teacher interviews, observation of the classroom over a semester, two interview with students, and collection of artwork to gain perspective on their experience in the art classroom.

I am hoping that you would agree to participate as I believe that you have valuable experience that would lead to enhancing the quality of this study. Could we set up an initial interview lasting approximately 1 hour, to determine if your class meets the criteria for the study? These interviews can take place at your school or in a public venue such as a coffee shop, depending upon your availability. Would you be able to meet with me in the coming months?

Sincerely,

Kelly Gross
Kgross1@niu.edu
Ph.D. Student
Northern Illinois University
APPENDIX L
CONSENT FOR TEACHER
Appendix L

To be printed on NIU letterhead

Consent Form for Teacher

ADULT (18 or older)

Department of Art and Design Education at Northern Illinois University

I agree to participate in the research project titled “Art Education and Students with ED” being conducted by Kelly Gross, a doctoral student at Northern Illinois University. I have been informed that the purpose of the study is to examine the benefits of taking visual arts classes for students with emotional disorders. The research is focused on two areas: developing art skills and concepts and social competence (as measured by positive peer interactions, positive peer-teacher interactions, and engagement in arts classroom activities).

I understand that if I agree to participate in this study, I will be asked to complete at least three interviews approximately one hour in length, with the possibility of a follow up interview. A follow up interview may be necessary to clarify or probe answers from the first interview or in the event that further questions need to be asked. The follow up interview would be approximately 15-30 minutes in length. Each interview will be recorded in an audio format. Additionally, the interviewer will be observing my classroom throughout the semester and may ask for recommendations of students with IEP’s that designate a disability of emotional disorder to interview as part of the study.

I am aware that my participation is voluntary and may be withdrawn at any time without penalty or prejudice, and that if I have any additional questions concerning this study, I may contact Kelly Gross at 504.473.5998 and Kerry Freedman (815) 753-7879. I understand that if I wish further information regarding my rights as a research subject, I may contact the office of Research Compliance at Northern Illinois University at (815) 753-8588.

I understand that the intended benefits of this study include knowledge and recommendations pertaining to educating high school students with emotional/behavior disorders and/or autism.

I have been informed that potential risks and/or discomforts I could experience during this study include questions about my personal approach to teaching. I understand that all information gathered during this research will be kept confidential by using pseudonyms in place of identifying school, teacher and student names. General descriptive information may be used, such as: “a private school in northern Illinois in the suburbs of Chicago” or “a 17 year old female student”. Additionally the recordings and transcribings of the interviews will only be accessible by Kelly Gross and faculty advisors Dr. Kerry Freedman, Dr. Douglas Boughton, and Dr. Jesse Johnson.

I understand that my consent to participate in this project does not constitute a waiver of any legal rights or redress I might have as a result of my participation, and I acknowledge that I have received a copy of this consent form.
Signature of Subject  Date

I agree to allow the interviewer to record this interview in an audio format. This allows the researcher to have a more accurate record of the interview. The audio format will be transcribed and all identifying information will be removed keeping this interview and references to students/places confidential.

Signature of Subject  Date
Appendix M

To be printed on NIU letterhead

Parental Consent Form

Department of Art and Design Education at Northern Illinois University

Your child/ward is invited to participate in a research study titled “Art Education and Students with ED” being conducted by Kelly Gross, a doctoral student at Northern Illinois University. The purpose of the study is to examine the benefits of taking visual arts classes for students with emotional disorders. The research is focused on two areas: developing art skills and concepts and social competence (as measured by positive peer interactions, positive peer-teacher interactions, and engagement in arts classroom activities).

Your child’s/ward’s participation in this study will consist of two interview approximately thirty to forty minutes. He or she will be asked to participate in an interview to discuss their experience in arts classes as part of their high school experience. Each interview will be recorded in an audio format.

Additionally, the interviewer will ask for permission to take digital images of artwork completed by the students that is discussed as part of the interview. The images of artwork may be used as part of publication about the research. Any information attached to the image which could indentify your child/ward will be kept strictly confidential using pseudonyms in place of identifying school, teacher and student names.

Participation in this study is voluntary. Your decision whether or not to allow your child/ward, as well as his or her assent to participate will not negatively affect your or your child/ward. Your child/ward will be asked to indicate individual assent to be involved immediately prior to participation, and will be free to withdraw from participation at any time without penalty or prejudice. If you have any additional questions concerning this study, you may contact Kelly Gross at 504.473.5998 and Kerry Freedman (815) 753-7879. If you wish for further information regarding my rights as a research subject, you may contact the office of Research Compliance at Northern Illinois University at (815) 753-8588.

The intended benefits of this study include knowledge and recommendations pertaining to educating high school students with emotional disorders. The potential risks and/or discomforts that your child/ward could experience during this study include questions about their artwork that may be personal in nature. Information obtained during this study may be published in scientific journals or presented at scientific meetings, but any information which could indentify your child/ward will be kept strictly confidential using pseudonyms in place of identifying school, teacher and student names. General descriptive information may be used, such as: “a private school in northern Illinois in the suburbs of Chicago” or “a 17 year old female student”. Additionally the recordings and transcribing of the interviews will only be accessible by Kelly Gross and faculty advisors Dr. Kerry Freedman, Dr. Douglas Boughton, and Dr. Jesse Johnson. Recordings will not be used for any other internal purposes.
I agree to allow my child/ward ______________________________(Fill in Name) to participate in this research study and acknowledge that I have received a copy of this consent form.

____________________________________________________________
Signature of Parent/Guardian Date

I agree to allow the interviewer to record my child/ward in an audio format. This allows the researcher to have a more accurate record of the interview. The audio format will be transcribed and all identifying information will be removed keeping this interview and references to students/places confidential.

____________________________________________________________
Signature of Subject Date

☐ I agree to allow images of my child’s/ward’s artwork to be published.

☐ I do not agree to allow images of my child’s/ward’s artwork to be published.

____________________________________________________________
Signature of Parent/Guardian Date
APPENDIX N
STUDENT CONSENT FORM
Appendix N

To be printed on NIU letterhead

Consent Form

Students (over 18)

Department of Art and Design Education at Northern Illinois University

I agree to participate in the research project titled “Art Education and Students with ED” being conducted by Kelly Gross, a doctoral student at Northern Illinois University. I have been informed that the purpose of the study is to examine the benefits of taking visual arts classes for students with emotional disorders. The research is focused on two areas: developing art skills and concepts and social competence (as measured by positive peer interactions, positive peer-teacher interactions, and engagement in arts classroom activities).

I understand that if I agree to participate in this study, I will be asked to complete two interviews approximately 30-40 minutes in length. Each interview will be recorded in an audio format. Additionally, the interviewer will ask for permission to take digital images of any artwork that I discuss. The images of artwork may be used as part of publication about the research. Any information attached to the image which could identify you will be kept strictly confidential using pseudonyms in place of identifying school, teacher and student names.

I am aware that my participation is voluntary and may be withdrawn at any time without penalty or prejudice, and that if I have any additional questions concerning this study, I may contact Kelly Gross at 504.473.5998 and Kerry Freedman (815) 753-7879. I understand that if I wish further information regarding my rights as a research subject, I may contact the office of Research Compliance at Northern Illinois University at (815) 753-8588.

I understand that the intended benefits of this study include knowledge and recommendations pertaining to educating high school students with emotional disorders.

I have been informed that potential risks and/or discomforts I could experience during this study include questions about my artwork that may be personal in nature. I understand that all information gathered during this research will be kept confidential by using pseudonyms in place of identifying school, teacher and student names. General descriptive information may be used, such as: “a private school in northern Illinois in the suburbs of Chicago” or “a 17 year old female student”. Additionally the recordings and transcribing of the interviews will only be accessible by Kelly Gross and faculty advisors Dr. Kerry Freedman, Dr. Douglas Boughton, and Dr. Jesse Johnson.

I understand that my consent to participate in this project does not constitute a waiver of any legal rights or redress I might have as a result of my participation, and I acknowledge that I have received a copy of this consent form.
I agree to allow the interviewer to record this interview in an audio format. This allows the researcher to have a more accurate record of the interview. The audio format will be transcribed and all identifying information will be removed keeping this interview and references to students/places confidential.

I agree to allow images of my artwork to be published.

I do not agree to allow images of my artwork to be published.
Appendix O

To be printed on NIU letterhead

Assent Form

Students (under 18)

Department of Art and Design Education at Northern Illinois University

I agree to participate in the research project titled “Art Education and Students with ED” being conducted by Kelly Gross, a doctoral student at Northern Illinois University. I have been informed that the purpose of the study is to examine the benefits of taking visual arts classes for students with emotional disorders. The research is focused on two areas: developing art skills and concepts and social competence (as measured by positive peer interactions, positive peer-teacher interactions, and engagement in arts classroom activities).

I understand that if I agree to participate in this study, I will be asked to complete two interviews approximately 30-40 minutes in length. Each interview will be recorded in an audio format. Additionally, the interviewer will ask for permission to take digital images of any artwork that I discuss. The images of artwork may be used as part of publication about the research. Any information attached to the image which could indentify you will be kept strictly confidential using pseudonyms in place of identifying school, teacher and student names.

I am aware that my participation is voluntary and may be withdrawn at any time without penalty or prejudice, and that if I have any additional questions concerning this study, I may contact Kelly Gross at 504.473.5998 and Kerry Freedman (815) 753-7879. I understand that if I wish further information regarding my rights as a research subject, I may contact the office of Research Compliance at Northern Illinois University at (815) 753-8588.

I understand that the intended benefits of this study include knowledge and recommendations pertaining to educating high school students with emotional disorders.

I have been informed that potential risks and/or discomforts I could experience during this study include questions about my artwork that may be personal in nature. I understand that all information gathered during this research will be kept confidential by using pseudonyms in place of identifying school, teacher and student names. General descriptive information may be used, such as: “a private school in northern Illinois in the suburbs of Chicago” or “a 17 year old female student”. Additionally the recordings and transcribings of the interviews will only be accessible by Kelly Gross and faculty advisors Dr. Kerry Freedman, Dr. Douglas Boughton, and Dr. Jesse Johnson.

I understand that my consent to participate in this project does not constitute a waiver of any legal rights or redress I might have as a result of my participation, and I acknowledge that I have received a copy of this consent form.
I agree to allow the interviewer to record this interview in an audio format. This allows the researcher to have a more accurate record of the interview. The audio format will be transcribed and all identifying information will be removed keeping this interview and references to students/places confidential.

I agree to allow images of my artwork to be published.

☐ I agree to allow images of my artwork to be published.

☐ I do not agree to allow images of my artwork to be published.
APPENDIX P
SCREENSHOT FROM G*POWER
APPENDIX Q
BENCHMARK RATINGS OF ARTWORK
## APPENDIX Q

### Benchmark Rankings of Artwork

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