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The effects of art education on self -efficacy in middle school students

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COLLEGE OF EDUCATION

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2009

ABSTRACT

The Effects of Art Education on Self-Efficacy in Middle School Students

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Doctoral Study Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Education
Teacher Leadership

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Researchers have theorized that student achievement and its contingent effects on self-efficacy are important factors in art education. There is, however, a paucity of research addressing this relationship, which in turn affects students' and educators' levels of success. Accordingly, this study was an investigation of the relationship between art education and self-efficacy in middle school students and tested the constructivist theory, as embodied in Bandera's theories on the foundations of self-efficacy beliefs. This pretest-posttest control-group true experimental design tested the relationship between the independent variable, art education and the dependent variable, self-efficacy in middle school students. The instrument, Patterns of Adaptive Learning Scales (PALS), was employed to gather data from a treatment group (n = 60) receiving art education and a comparison-control group (n = 60) who had never taken middle school art. These quantitative data were analyzed using a one-way ANOVA. Inferential statistics yielded nonsignificant findings for the treatment group except on 1 of 14 scales, the Self-Presentation of Low Achievement Scale. Both descriptive and inferential data reinforced that levels of self-efficacy remained in the low to moderate range throughout the testing period for all participants. These reported self-efficacy profiles provided pathways for facilitating social change by driving the development of guidelines for middle school curriculum programs that support and assess the development of adolescents' self-efficacy. Furthermore, results pointed to the need for additional empirical studies that will help educators and communities better understand the relationship between art education and overall academic achievement.

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CHAPTER 1:

INTRODUCTION TO THE STUDY

Introduction

The benefits of art education extend far beyond the art classroom. Consider the following scenario from a central Georgia middle school: For the third time during his seventh-grade school year, David had returned to the same middle school. His family had moved several times that year in search of better jobs or new dwellings, but had returned once more to the same school district. David, who had never been a particularly gifted art student, requested upon his return to be placed back into art class. His art teacher was not surprised by this request; she had heard similar requests made many times throughout her 15 years of teaching, including students repeatedly asking to remain in the art room beyond their scheduled time. In a related scenario, students from other disciplines asked permission to construct or complete a science, social studies, or language arts project in the art room. These middle school students came before school, during school, and after school—all wanting to enhance their projects using art. These requests were sincere, often emphatic, and implied that students wanted and needed art beyond the traditional boundaries of the art classroom.

Notwithstanding the art-driven interests of students and art educators, the documented history of art education offers clear evidence of the persistent struggle to include art education in our schools' curricula. From the late 1800s, when art classes served the industrial needs of the local community (Stankiewicz, 1997), through the First World War, when art education was viewed as a way to advance children's motor control and visual perceptiveness (Clark, 1996), and even through the No Child Left Behind Act

(NCLB) of 2001, when proponents of art education have fought to establish its inherent value and sustain its continuance in the curriculum.

This study examined the publications of researchers, theorists, and educators that reviewed educational programs, case studies, and extensive reports on the benefits of art education. The topics include how art education has promoted self-awareness (e.g., Eisner, 1972; Lowenfeld, 1975); built self-esteem and improved behavior (e.g., Ezell & Levy, 2003; Skilling & Carstensen, 2003); increased cognitive abilities (e.g., Anderson & Milbrant, 2005; Burton, 2001; Eisner, 1979; Ohler, 2002); elevated learning in other disciplines (e.g., Lowenfeld, 1975; Nickell, 2003; Ohler, 2002); created self-satisfaction (e.g., Wilson, 1998); and enhanced learning in the affective domain (e.g., Bolin, Khramtsova & Saarnio, 2005; Liff, 2003; Main, 1992). The findings indicate art education contributes positively to student success and establishes the advantages of including art education in today's curriculum. The fundamentals of the art education curriculum, according to research, create a rich learning environment. However, none of the studies specifically examined the qualities discussed in the literature in terms of their relationship to students' self-efficacy, that is, students' beliefs in their capability to succeed.

This study's review of self-efficacy literature explored the phenomenon of self-efficacy and its benefits. Scholars reported that self-efficacious students worked harder, persisted in their tasks longer, persevered in the face of adversity, and had greater optimism with lower anxiety, all resulting in higher levels of academic achievement (Bandura 1986, 1995, 1997; Pajares, 2006). Researchers also claimed that self-efficacy

helped to prepare students not only to gain new knowledge and cultivate new skills but also to accept responsibility for their own education (Bandura, 1997; Zimmerman, 1995). Students' experiences with academic success, as indicated by self-efficacy researchers Eisenberger, Conti-D'Antionio, and Bertrando (2005) were an important part of building a stronger sense of efficacy. The review of literature on self-efficacy and its beneficial effects on students was, however, limited and only included research in the areas of students' academic subjects.

The lack of information on the relationship between art education and the enhancement of student self-efficacy has left a gap in the research for educators and policy makers who plan, implement, and support art education in America's schools. This study attempted to fill that gap by exploring the research question, "What is the relationship between art education and self-efficacy in middle school students?" Establishing a research-based justification for valid and motivational art programs was at the heart of this study. This information was critical to stimulating fruitful educator reflection on improving instructional programs so that they promoted positive student attitudes and learning. A more detailed discussion of the literature review will follow in chapter 2.

Problem Statement

Previous research found that art education environments were associated with positive intellectual and social outcomes for students. Numerous studies (Efland, 2002; Eisner 1972, 1979; Ezell & Levy, 2003; Lafer & Tchudi, 1996; Roberts, 2005) indicated that the students' hands-on and aesthetic opportunities experienced by the students in the

art education classroom contributed significantly to success factors beyond acquiring art skills, theory, appreciation, and aesthetics. It was declared that increased emotional, social, and academic achievements were attained with the likelihood of enhancing student self-efficacy (Bandura, 1997). Methods for increasing students' capacities for intellectual and social self-concept beliefs have been the constant driving force behind past and present art and non-art educational mandates (Bandura, 1997; Clark, 1996; No Child Left Behind, 2001; Soupy, 1990; Stankiewicz, 1997; Wachowiak & Clements, 2006). Seeking out practices and techniques that motivate and increase student achievement have been the goals of educational theorists and practitioners and have in turn, prompted continuous instructional research. These studies, however, left substantial gaps in their inquiries.

Specifically, the existing evidence on the enhancement of students' self-efficacy is based largely on research designs that tested self-efficacy (a) only in the academic arenas and (b) with a focus primarily on elementary and high school populations (Ketelhut, 2005). Together, these designs left open the question of the middle school student and, in particular, any link between art (as opposed to academic) education and a middle school students' self-efficacy. Closing this gap requires finding adequate solutions for testing the viability of art education based on solid peer-reviewed sources as well as theoretical foundations. Such research could lead to useful changes in best practices in the art classroom and improve understanding of the role and function of art education for the middle school student. Additionally, extending the existing knowledge on art education and self-efficacy could help establish a sound basis for the continuance

of art education in our schools as well as contribute to answering the question, "What is the relationship between art education and self-efficacy in middle school students?"

The Nature of the Study

In this study, the researcher examined the relationship between art education and self-efficacy in middle school students. Data were collected from randomly selected seventh- and eighth-grade art and non-art education students ($N = 120$) at a central Georgia middle school. The instrument, Patterns of Adaptive Learning Scales (PALS) (Midgley et al., 2000), was a 72-item measurement that included 14 scales designed to evaluate student self-efficacy beliefs as impacted by resulting classroom experiences. A one-way ANOVA was employed to assess the data on a pretest/posttest basis. The descriptive and inferential statistical data compared descriptions of feelings, perceptions, and capacity beliefs between the treatment group (art students) and comparison-control group (students who had never taken middle school art). The following research question and hypotheses guided the study.

Research Question and Hypotheses

The research question was: "What is the relationship between art education and self-efficacy in middle school students?" The null and alternative hypotheses of this study were:

HO: There is no relationship between art education and self-efficacy in middle school students.

HI: There is a relationship between art education and self-efficacy in middle school students.

A more detailed discussion of the nature of this study will follow in chapter 3.

Purpose Statement

The purpose of this experimental study was to examine the relationship between art education and self-efficacy in middle school students in central Georgia. The underlying theory of the constructivist paradigm, as embodied in Bandera's (1986, 1995, 1997 theories on the foundations of students' self-efficacy beliefs, became the conceptual framework tested in this study. The independent variable, art education, was generally defined as the study and manipulation of artist skills and techniques, art history and culture, art criticism and analysis, and visual aesthetics (Mittler & Ragans, 1992; Wachowiak & Clements, 2006). The dependent variable, self-efficacy, was defined as a person's sense of believing that he has the capacity to perform a task (Bandura, 1997). Self-efficacy can become one of the most influential factors in ensuring students' success in their personal life as well as in the school environment (Costa & Kallick, 2004; Johnson & Johnson, 1996; Murphy & Alexander, 2002). Based on the findings from research-based literature, the fundamentals of the art education curriculum were expected to provide a rich environment for the development of art skills, theory, appreciation, and aesthetics but were not limited to the possibilities of promoting students' self-efficacy beliefs.

Theoretical Base

In forming a theoretical perspective for studying the relationship between art education and self-efficacy in middle school students, the researcher found that Bandura's theories on self-efficacy together with the constructivist theory (Walker, 2002)

provided useful models. These theoretical frameworks also integrated Vygotsky's (1996) views of social and cultural impact on mental activities with Glasersfeld's (1996) insight that authentic learning depended on personal, hands-on experiences. These theorists were preceded by Dewey's statements on learning and its dependency on relationships between an organism and its environment as cited in Vanderstaeten & Biesta (1998). "Every organism participates entirely in his life world. There is no reality without experience. Every act creates a new reality. Social interaction enables and forces everyone involved in it to pay attention to the contributions made by other participants" (p. 43). The basis of the constructivist theory advocated what art education magnified: Learning is an active process in which learners must be provided with opportunities to interact with sensory data and construct their own meanings from their experience (Walker, 2002). Each meaning constructed makes a student better able to give meaning to other sensations, which can fit a similar pattern. The crucial act of constructing meaning is a mental process and the learner needs to be provided with activities that engage the mind as well as the hands. Assimilation of new knowledge in the constructivist theory is, therefore, structured directly from previous knowledge. "Learners need to discover the means by which to make meaning out of experience and the knowledge they have gained. Through art representation, the child can find new ways to represent meaning" (Wachowiak & Clements, 2006, p. 28). The applicability of the constructivists theory was pertinent to this study as it supported the research on constructing learning as an active, hands-on process as exemplified in the art education arena (Piaget, 1959; Vanderstaeten & Biesta, 1998).

The supporting theories of the constructivist base were also reflected in Bandura's (1997) established claims on the development of self-efficacy. He declared that students acquired self-efficacy from four primary sources: actual hands-on performances, vicarious experiences, forms of persuasion or encouragement, and physiological reactions (positive) to having performed or attempted the task. Bandura's basis for building self-efficacy encompassed not only the competence building elements present in art education but also replicated the essential components of the constructivist theory. Both Bandura's theories and the elements comprising constructivism laid the foundation for investigating the relationship between art education and self-efficacy in middle school students.

Operational Definitions

Aesthetic experience: aesthetic experiences include deep involvement or intense reaction by a student to a work of art (Mittler & Ragans, 1992).

Art analysis: the process of noting how the principles of art are used to organize the elements of color, line, texture, shape, form, and space (Mittler & Ragans 1992).

Art criticism: the process of studying, understanding, and evaluating art works, consisting of four stages: describing, analyzing, interpreting, and evaluating (Mittler & Ragans 1992).

Discipline-Based Art Education (DBAE): DBAE was defined in, *A Survival Kit for the Elementary/Middle School Art Teacher* (Hume, 2000) as contemporary art education that is based on four components: art production, art history, art criticism/analysis, and aesthetics.

National Visual Arts Standards: these standards were established by the National Art Education Association (Hume, 2000) and included what students should know and be able to do in the visual arts in Grades K-4, 5-8, and 9-12. They were defined as follows:

1. Understanding and applying media, techniques, and processes.
2. Using knowledge of structures and functions.
3. Choosing and evaluating a range of subject matter, symbols, and ideas.
4. Understanding the visual arts in relation to history and culture.

Self-Efficacy: Bandura (1986), a *s*ocial cognitive theorist, defined self-efficacy as

> people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances. It is concerned not with the skills one has but with the judgments of what one can do with whatever skills one possesses. (p. 391)

Visual Arts Education: the skillful presentation of concepts and/or emotions (ideas and feelings) in a form that is structurally satisfying and coherent (Lansing, 1969). It is the area of learning that is based upon the visual tangible arts such as drawing, painting, sculpting, printmaking, weaving, designing jewelry, and graphics, and so on (Anderson & Milbrant, 2005).

Assumptions

1. One must assume that the visual art education curriculum of this study was based on quality core standards that offered effective instructional content elements.
2. The sampled participants were representative of the total population of seventh- and eighth-grade students at the central Georgia middle school in this study.

3. The measurement collected honest, unbiased responses from participants each time it was administered.

4. Participants perceived art education to be an important class that could enhance their learning.

5. Participants in this study already exhibited satisfactory levels of self-efficacy in their classroom task performances.

6. Administrators supported the data collection and analysis processes of the study.

Limitations

The middle school site in this quantitative study controlled the random selection of participants to the treatment and comparison-control groups; therefore, the sample may not be representative of the population of the school or other middle schools in the central Georgia area. The ability to generalize this study may be limited.

1. The findings could be subject to contexts in which instruction was delivered, the ability and interest level of participants in visual art education, the length of time between points of data collection, and the limited length of the art classes themselves.

2. This study examined the effects of art education on self-efficacy. While the researcher cannot control the prior level of self-efficacy among the participants, one must assume that the two groups, treatment and comparison-control, are homogeneous in their prior levels of self-efficacy.

3. Even though the measurement of this study, the PALS, was designed to test self-efficacy generally, it was not art domain specific, which may affect the outcomes.

4. The quantitative statistical procedures used in this study may limit the quality and range of collected data.

Delimitations

The scope of this study encompassed an examination of the relationship between art education (independent variable) and self-efficacy (dependent variable) in middle school students.

This quantitative experimental study was confined to collecting data from 120 seventh- and eighth-grade middle school students in central Georgia. A pretest-posttest control group design (Dooley, 2001) was used to test the relationship between art education and student self-efficacy. The participants consisted of a treatment group (n = 60) receiving art education and a comparison-control group (n = 60) who had never taken middle school art. A pretest-posttest 72-item self-efficacy measurement scale, the PALS, was administered during one 9-week session. A one-way ANOVA statistical test was employed to analyze the data.

Significance of the Study

A study of the relationship between art education and self-efficacy in middle school students was important for several reasons. First, this study helped bridge a knowledge gap between art education literature and research and self-efficacy literature and research. The literature reported an abundance of valuable art education qualities that contribute to the achievements of students but rarely dealt with the influences that art education might have on self-efficacy. Self-efficacy studies explored the phenomenon of self-efficacy only in the area of students' academics. This study extended the literature on

art education and the literature on enhancement of self-efficacy in an effort to comprehend the dimensions of the relationship between the two entities.

Second, understanding relationships between art education and student self-efficacy helped reveal the underlying strategies instituted in art programs that contribute to building self-efficacy. Researchers and educators were guided to evaluate these approaches for future applications of increasing student self-efficacy across the curriculum.

Finally, this study provided pathways for facilitating social change by driving the development of (a) a greater knowledge base for the support of art education and its continuance in our schools by our policy makers, (b) programs that focus on the assessment of middle school students' self-efficacy beliefs beyond the art classroom, (c) guidelines for art and other curricular programs and social experiences that support the development of adolescents' self-efficacy, and (d) future studies and instruments to investigate self-efficacy that will inform researchers and educators of improved procedures for building student's beliefs in their capabilities.

The significance of this study, then, lies in its potential to increase support for the inclusion of art education in our schools' curricula by bridging a gap between art education and self-efficacy literature, by revealing art program strategies that contributed to enhancing self-efficacy, and by driving the development of future studies and programs to improve strategies for enhancing students' self-efficacy.

Summary

Far beyond the meaningful experiences of creating and studying art, the potential of this study was to clarify and sustain the multilayered advantages of art education for the enhancement of student self-efficacy. A well-planned and executed visual arts program not only taught students art-making skills, history, and aesthetics but also possibly led to enriched beliefs by students in their capacities to succeed at a task. This study examined the relationship between art education and middle school students' self-efficacy. During a time when art programs face daily challenges to survive and maintain a significant position in the schools' curricula, the results of this study may sustain and encourage art programs' continuance as well as extend their significance. The contents of the remaining four chapters of this study guided and reported this investigation. Chapter 2 presents a review of related art education and self-efficacy literature that deals with evolving trends in practices and procedures of art programs used to enhance self-efficacy. Chapter 3 delineates the research design and methodology of the study. Chapter 4 describes the instrument used to gather the data, the procedures followed, and analysis of the findings. Finally, chapter 5 interprets the findings, presents emerging outcomes, recommends procedures to strengthen the present study, and concludes by advocating future research designs for art education and self-efficacy.

CHAPTER 2:

REVIEW OF LITERATURE

Introduction

Since the late 19th century, art education in our elementary, middle, and high schools has struggled to validate its existence. In recent years, efforts to maintain effective art education instruction have been challenged and complicated by an ever-increasing emphasis on high achievement on nationally mandated tests as required by NCLB.

In response, researchers, theorists, and educators have conducted studies that addressed the problem and advanced educational arguments supporting the continuance of art education. Specific educational programs, case studies, and extensive reports verified the positive effects of art education on student success and guided the strategies to investigate the independent variable of this study. These founded and wide-ranging reports were organized into six constructive areas: (a) art education as it promoted self-awareness and created experiences with and understanding of the world, (b) art education as a mechanism that enhanced cognitive abilities, (c) art instruction as a means of elevating learning and improving literacy in other disciplines, (d) art education as a force that built self-esteem and improved behavior, (e) art education as a curricular contribution that planted the seeds for the appreciation of aesthetics and fostered self-satisfaction, and (f) art education as a means that helped improve sensitivity and learning in the affective domain. These various studies were used to examine the effects of art education on a broad array of student educational outcomes and pointed directly to the

fundamentals of art education as being a rich environment for the enhancement of students' self-efficacy.

However, none of the studies specifically examined the qualities of art education in terms of their relationship to students' self-efficacy, the independent variable of this study. This gap led to a review of self-efficacy literature to examine the phenomenon of self-efficacy and its effects on student success. The research question of this study reflected upon the relationship between these two primary areas of scholarship: literature on art education and literature on the sources of student self-efficacy.

Several strategies were used for searching the literature. These included online databases from Walden University: ERIC—Educational Resources Information Center, Education Research Complete, eBrary e-book collections, and A to Z E-Journal List. Research topics entered into the databases included *art education, benefits of art education, art education history, self-efficacy, self-efficacy* and *student success, adolescents' developmental characteristics, constructivism* and *teaching*. These topics led to helpful full text journal articles. Additional journal articles and texts were located at Clayton State University Library, Morrow, Georgia and Georgia State University Library, Atlanta, Georgia and borrowed from art educators' personal libraries. The main search engine, Google, was used to locate the research instrument, the PALS, as well as social research methods. Several books on self-efficacy were ordered from online bookstores such as Amazon.

Review of Related Research and Literature

Because of the vast quantities of available literature, a summary will be presented of the most relevant literature for each area.

Past and Present Challenges in Art Education

In order to better understand and appreciate the current challenges in art education, a review of its development was useful**.** Eisner (1992) suggested that history can be a source of wisdom on how current challenges in art education might be addressed. He reminded us that historical overviews created "focuses that will help us deal with the problems and potentialities of the present" (p. 41). Numerous statements by art theorists, historians, and educators clearly indicated that substantial historical overviews of art education, as compared to other disciplines, are notably limited (Efland, 1990; Eisner, 1992; Soucy, 1990; Stankiewicz, 1997). In itself, this lack of documented art education history generated important questions. Perhaps this obvious deficit was reflective of an overall societal attitude toward the value of art education and its inclusion in our schools. It must be considered that the current challenges of keeping art effective and valid in our schools could possibly be a direct result of past patterns. Examining the history of art education created insight and supported further inquiries.

The recorded history of art education in the United States began in the late 19th century (Soucy, 1990). Approaches to art education used at this time revealed that art educators were highly influenced by pressures from local business leaders. In lieu of an enriching, well-rounded art curriculum, this early model was one that only taught limited art skills (Stankiewicz, 1997). These art programs were systemized by Walter Smith in

1870 in Massachusetts and resulted in the creation of mechanical drawing courses designed to meet the industrial needs of his immediate community. Shortly following, however, the community members began to oppose these drawing classes and classified them as a needless expense; they "suggested that drawing instruction cease for the remainder of the school year, that the time be devoted to spelling" (p. 7). These community members, like many of our contemporaries, could only see the traditional literacy skills as the business of schools. In spite of the increasing diversity of secondary school curricula during this era, art remained in a position of curricular inferiority (Clark, 1996). Art educators were now forced to find new grounds upon which to rationalize the continued presence of art in schools. By the First World War, two survival strategies were widely adopted: instrumentalism and essentialism (Clark, 1996). The inherent value of art instruction (essentialism) was initially overlooked as the instrumentalists viewed art as a facilitator of broader curricular objectives such as motor control, cooperative group work, visual perceptiveness, and willingness to express ideas. These qualities were taught in the context of child-centered instruction and resulted in the emergent field of developmental psychology. This coupling of artistic activity with psychological development kept art in the elementary curricula; however, art in most secondary schools remained limited. The supporting role of art in child development began to shift in the 1960s and 1970s, and art finally became categorized as a discipline in the public schools. This development resulted in the implementation of newfound community involvement and resources. Together, these evolved into the arts-in-education movement. Notwithstanding efforts to move art education in the right direction, the policies of this

movement moved art education beyond the scope of the studio (Clark, 1996). Proponents favored the concept of "arts education" or "aesthetic education" to substantiate its existence and to give it the authority required to exist alongside the prominently directed science and mathematics curricula. Now, fine arts disciplines— music, drama, and visual arts— were treated as one, rather than separate programs in each of the arts. This began to draw public attention to the arts as neglected subjects in the curricula. However, the inherent values of art remained blended with the other disciplines (Efland, 1990).

Accountability became the new educational watchword in the 1980s and 1990s, and emphasis on curriculum changed from considerations of content to the identification of effective devices to evaluate and measure a student's mastery of facts. This led to cost-accounting measures of efficiency as well as a renewed concern for excellence in education. Teaching became focused on improving the teaching of scientific, mathematical, and technological subjects. Again, art education slipped into the category of curricular extras.

The 21st century brought with it new legislation directing educators to leave no child behind. Art education was initially included as a core subject in the NCLB Act of 2001. In 2003, funds were cut because the Bush Administration had a policy of terminating small categorical programs with limited impact in order to fund higher priorities (USDE, 2003). History repeated itself as educational priorities were aimed toward the core academic subjects of English, mathematics, and science (NCLB, Title 1). Intense focus on standardized testing in these subjects "will mean less emphasis on art, music, history, and other subjects" (Rose & Gallup, 2003, p. 46). Art education programs

were especially vulnerable to cuts when educational funds were troubled and/or time restraints were placed on daily classroom schedules due to the proliferation of mandated tests. As a result, art education programs became diminished and fell into the categories of "'art as recess' or 'art as enrichment' and often functioned as a bribe or reward" (Chapman, 2005, p. 13). Additional prospects indicated that art programs could become extracurricular or cut altogether from the curriculum (National Art Education Association [NAEA], 2003). This syndrome led to art education being perceived as "hands-on, minds-off activities to be earned" (p. 13).

Researchers Pianta, Belsky, Houts & Morrison supported by The National Institute of Child Health and Human Development (NICHD) and Early Child Care Research Network (2007) examined students' opportunities to learn in more than 2500 U.S. elementary school classrooms. The results "did not appear congruent with the high performance standards expected for students or for teachers as described by most state teacher certification and licensure documents" (Pianta et al., 2007, p. 1796). The focus on learning, they found, was geared toward performance of basic reading and math skills. Few opportunities were provided for students to work in small groups, to learn problem-solving or reasoning skills or other content areas. Even though teachers met credentialing standards and focused their teaching on standards-based reform, their patterns of instruction remained inconsistent in instructional areas that would add depth and meaning to a student's growth. Although troubling, the researchers reported that learning in the classroom had not been affected by the very principles that were intended to create such opportunities. Their investigations revealed that well-trained teachers teaching the

standards might not close the achievement gap but might instead lead to instruction that was overly broad and thin. Researchers claimed that meeting the goals of standardized testing might ironically deprive students of learning opportunities.

Through the years, art education was openly challenged. In particular, doubts were continually expressed about its assumed value and contribution to educational achievement. Present day art theorists and educators (Efland, 2002, Eisner, 1972, 1979; Ezell & Levy, 2003; Lafer & Tchudi, 1996; Roberts, 2005) evidenced art to be a significant contributing factor to the emotional, social, and academic achievements of children, resulting in closing the gap on both the performance levels across the curriculum and on standardized tests.

Art Education Promoted Self-Awareness and Understanding of the World

As a middle school art teacher, this researcher knew that art encompassed the daily lives of middle school students. Young adolescents entered the school hallways and classrooms dressed in combinations of designer apparel that were stitched and painted with flamboyant logos and motifs, all beyond the styles of yesterday. Another glance revealed intricately woven shoelaces that matched shirts, jackets, and vests; book bags were often embellished with dozens of colorful key chains and patches; and notebooks were plastered with glittery, holograms sports, music, and video images. Even the hairstyles of the students had become artful expressions with their intricately shaved or woven patterns. Lockers, a student's only personal and private space on campus, were collaged with photos, magazine cutouts, ribbons, mirrors, and trinkets. New technology had created cell phones that students could use not only to call home but also to produce

and record visual images. These artistic images and artifacts shaped the students' lives and helped to construct their sense of culture (Ballengee-Morris & Stuhr, 2001).

According to Grossberg (1992), visual objects from a student's culture transmitted knowledge, language, codes, and values of everyday life. Experiences with the visual arts richly augmented the ordinary life experiences and often led students to increased understanding of their existence, culture, and world. As such, visual arts held an esteemed role in the transmission and perpetuation of culture, "therefore, knowledge about art is knowledge about many expressive mediums found within human existence" (McDonald & Fisher, 2002, p. 2). In an address at the Los Angeles Music Center, Charles Broudy commented on the universal importance and powerful communications found within art:

> What a culture deems important, it enshrines in art. The origin of the tribe, its gods, tragedies, and victories are transformed into artistic images through legends, drama, sculpture, architecture, song, dance, and story. Without the images of art, these ideals and values cannot make a lasting impact on the members of the culture; they are the memory of the culture. (as cited in McDonald & Fisher, 2002, p. 3)

A student's identity and sense of meaning for life were often enhanced through created or acquired visual images and objects.

Vygotsky (1971) stated,

> Psychological investigation reveals that art is the supreme center of biological and social individual process in society, that it is a method for finding an equilibrium between man and his world, in the most critical and important stages of his life. (p. 59)

It has been maintained by researchers and educators that the middle school years are indeed transitional, critical, and important years (Caskey & Anfara, 2007). Dewey (1934)

stated that aesthetic experiences were the ultimate human experience and that their presence in schools was one of the highest virtues of meaningful education. Reports such as these by early educators remained timely and equated with what the students of today are doing naturally. On their own time and cognition, students surround themselves with culturally visual artifacts.

Eisner (1972) asserted that the benefits of art education fell into two main areas: contextualist justification (extrinsic) and essentialist justification (intrinsic). During the contextualist domain, the prime value of art enhanced the student's individual experiences with an understanding of the world. This extrinsic approach to the visual arts provided opportunities that vivified life and often guided students to make appraisals of their real-world connections that otherwise would be lost. For instance, in *Bandera*, a painting by Orozco, a Mexican social realist painter of the 1920s-1940s, two common townsmen are hunched over, dramatically carrying a huge flag and guns. In the distance, a barefoot and pregnant woman stood. The men are headed into the dark expanse of the night that surrounds them. Visually, Orozco told us what it felt like to leave one's beloved and go into the field of battle. "Artists through the ages have used art to express the values they cherish and to provide statements about the conditions of man, the nation, and the world" (Eisner, 1972, p.15). Presently in our schools, many students have also been left behind by their fathers, mothers, other family members, or friends for the battlefields of the Middle East. Even those who have not experienced this separation first hand know this war because the events are flashed before them constantly on their television screens. Seeing the images in Orozco's *Bandera* discloses ideas and feelings

hidden within the minds of the students and helps them to connect to humanity as a whole. According to Eisner's (1972) theory, during the teachings in art class, after students examine and give meaning to the functions of human experience as evidenced in artworks like *Bandera,* they would then at some level connect these artistic experiences to their own life experiences. Thus, the ideas of their culture would take on additional significance that according to Eisner's theory of contextualism could "enable those students with less perceptivity to learn to see what was unseen and having seen through art, are the better for it" (p.16). Views of the world and self are effectively enhanced when art educators employ the interpretive strategy of denotations and connotations to help students better understand, evaluate, and enjoy the visually constructed world in which they live (Barrett, 2003).

"*Denotations* are what you literally see in a picture; *connotations* are what the things and words imply or suggest by what they show and how they show it" (Barrett, 2003, p.11). During art history discussions and the processes of analyzing artwork, students learn to decode the images and interpret the meanings in artwork, which can in turn sharpen their personal insights into the visual qualities of their lives. Learners of all ages successfully decipher the many messages circulating in the images and objects of their visual culture when given the opportunities and strategies. The ability of students to interpret the images with which they live is immensely important. This process confirms or denies students' personal beliefs and promotes increased understanding of one's culture.

During adolescence, students enter the formal operational state, a point at which they develop the capacity for abstract thinking. One of the important characteristics of this stage is that students begin to draw conclusions not only from real-world confirmations but also from premises, which rest on rules of logic. These expanding thought processes lead to new, effective strategies for acquiring information and solving problems (Berk, 2005). The cognitive processes of formal operations are applied to a wider range of situations during art education where "students are required to match theory (connotations) against evidence (denotations) and then reflect on their thinking" (p. 557). These aesthetic experiences increase students' reflective abilities, which in turn build a basis for enhancement of their personal belief systems and understanding for their world.

"Today's students need visual literacy skills and knowledge that enable them to encode concepts as well as decode the meaning of society's images, ideas, and media of the past as well as our increasingly complex visual world" (Sandell, 2006, p. 33). Art teachers are responsible for teaching students to explore not only what something is but also how something is through creative expression and critical response. This process is both informative and transformative.

> Through the informative process of critical response, students perceive, interpret, and finally judge ideas connected to visual imagery and structures, past and present. Through the transformative process of creative expression, students generate artistic ideas that they elaborate, refine, and finally shape into meaningful visual imagery and structure. (p. 33)

The development of perceptual sensitivity became one of the major benefits of art education as exemplified in Eisner's (1972). Self-awareness was amplified because of the

visual relationships built through the images found in a students' world. This observation invited direct "inquiry and investigation and offered new knowledge about self and the world" (Burton, 2001, p.34). Hence, the extrinsic values of art education were well supported and could not be denied.

The second art educational theory that Eisner (1972) discussed was intrinsic in nature and was referred to as essentialist justification. This justification emphasized the rewards that students gained from personally delving within. This self-discovery required no special knowledge or experience, and what a student knew or did not know bore no relationship to his creative expression. Lowenfeld and Brittain (1975) supported this same theory.

> One sometimes hears that there are definite steps to the creative process and that preparation is the first and most important step. However, it can be seen that children create with the aid of whatever knowledge, they happen to have at the time. The very act of creating can provide new insights and new knowledge for further action. (p. 5)

The constructivist theory indicated that art students have the benefit of not only enhancing their learning though their senses but that the expression of what had been internalized was unique and valuable and extended a student's sense of personal awareness beyond himself and into the world around him. "Yet in most areas other than the arts the senses are apt to be ignored. The greater the opportunity to develop and increase sensitivity and the greater the awareness of all the senses, the greater will be the opportunity for learning" (Lowenfeld & Brittain, 1975, p.6). These intrinsic and extrinsic benefits of art education as defined by Eisner, Lowenfeld, and Brittain provided art

educators with endless pathways to explore and research, as well as rendered them with a great sense of worth in their teaching.

Cognitive Abilities Were Sharpened

Sousa (2001) claimed that visual art education affected student learning and success by engaging many skills and abilities. "The human brain," he stated, "has the incredible ability to form images and representations of the real world or sheer fantasy within the mind's eye" (p. 228). These talents were valuable and allowed human beings to develop advanced and sophisticated cultures. This imaging process was performed in the right hemisphere of the brain and created mental visualizations of objects, events, and arrays related to new learning. It also represented a major way of storing information in the brain (Sousa, 2001).

> The more information an image contains, the richer it is. Research evidence is clear: Individuals can be taught to search their minds for images and be guided through the process, which through hemispheric integration, enhances learning, increases retention, and improves the quality of life. (p. 228)

As noted in Gowan's report (1980) there was a drop in creativity in most children at about the fourth-grade level. He suggested that this drop was due to the

> extinction of right hemisphere imagery due to over teaching of left hemisphere functions of reading, writing, and arithmetic which occurs at that time, and the lack of stimulation of right hemisphere functions caused by the lessening or absence of music and art in the curriculum. (p. 28)

The practice and development of creative expression in art education stimulated the right hemisphere of the brain. This process enhanced the mind's eye, which not only reviewed the contents of visual memory, but also formed new or modified images, as a student's thoughts require.

Burton (2001) stated that art education promoted students' thinking, feeling, and sensing to higher, more informed levels. She believed that through active, hands-on, bodily manipulations of materials, important learning took place. "For as materials bring responses into focus for the mind, so they simultaneously act as vehicles of reflection, provoking new shades of meaning and enriching the immediate significance of the originating thought, memory, or event" (p.38). The ongoing action between creating with an art medium and reflecting on the outcome were intrinsically valuable.

Burton further explained that because of experiences in art education, different and distinctive ways of knowing were brought into new perspectives for students. Often through these exercises of the imagination, children were led to ask questions and construct narratives about their lives that otherwise they would not. "It is the art experience that transforms an inner event by taking it on a journey outward into a new kind of reality, and it is the role of the imagination along this journey to unify and intensify the outcome" (Burton, 2001, p. 38).

According to Burton, recent research undertaken at Teachers College indicated that a number of specific cognitive abilities were strengthened during artistic experiences. She reported that four abilities appeared to come into play in a student's artistic development: elaboration, originality, fluency, and resistance to closure. The capacity for elaboration enabled youngsters to be attentive to parts and details of their ideas, explore and bring into play further information, and, in general, to entertain different possibilities on an idea, problem, or experience (Burton, 2001). Originality allowed students to take some of these possibilities and transform them into new and fresh ideas, establishing

pathways to building independent thinking. Fluency increased a student's ability to make ideas flow forward and backward interweaving ideas and thoughts into new unities. Resistance to closure was the ability that a student had to keep an open and independent mind, to think about new ideas independently from others. Eventually, students were able to increase their thinking and move it forward into new domains of vision and understanding.

Burton continued to point out that recent research indicated that these abilities were all "strongly represented among young people who have been exposed to art education for considerable periods of their education" (Burton, 2001, p.39). The conditions for learning were greatly magnified if the students' minds were at work considering and filtering possibilities and making leaps and jumps between new ideas and old facts. The importance of these experiences was they did not exist as a single isolated outcome; rather, they offered larger dimensions that tapped into the students' connections to themselves and their world. Burton explained,

> During the construction of a painting, drawing, or sculpture a student makes a connection with his inner thoughts and the materials used; as a result, new and different ways of encountering the world come into view, are tested and layered, and become interwoven within unified wholes we call works of art. (p.39)

Eisner (1972) pointed out that one of the most valuable benefits of art education, the development of problem-solving skills, resulted when a student was most challenged with decisions that had to be made in order to create a work of art. For example, when a student faced a white sheet of paper on which he must create a vision that conveyed what he intended, he must be in touch with his ideas as well as the materials before him. The

student must manage the materials so that they function as a medium, while at the same time working through problems that inevitably occurred in the act of creation. While all of this was going on, the student must face the challenges of the specific assignment by employing the principles of art such as unity, balance, emphasis, and proportion that had been assigned, so that his work not only reflected his vision but also hung together as a whole. In this situation the student was coping with thousands of interactions of the visual qualities that emerged through his use of materials and his own ideas conceived to be his artistic purpose (Eisner, 1972). Hence, problem-solving skills were implemented and tested as works of art emerged. These cognitive abilities were multi-faceted and carried over into many areas of the student's education beyond the art classroom.

Art Instruction Elevated Learning and Improved Literacy in Other Disciplines

Although the arts were often thought of as separate subjects, like chemistry or algebra, they really were a collection of skills and thought processes that transcended all areas of human learning (Sousa, 2001). Eisner (1998) stated that when the arts were taught well, they promoted cognitive competencies that benefited learners in every aspect of education and helped to prepare them for the demands of the 21st century. Eisner identified eight competencies:

1. The perception of relationships: Creating a work in art helped students to recognize how parts of a work influence each other and how they interact.

2. An attention to nuance: Art teaches students those small differences, like color, shading, and form had large effects in making an artwork satisfying.

3. The perspective that problems had multiple solutions and questions had

multiple answers: When creating works of art, students looked at multiple options.

4. The ability to shift goals during the process: While working to produce works of art, students recognized and pursued goals that were not thought of at the beginning. Art helped students see that ends can shift in the creative process.

5. The permission to make decisions in the absence of a rule: Students were required to call upon personal judgment in absence of specific rules. This process allowed them to assess what felt right and to decide when a task was done well.

6. The use of imagination as the source of content: Art enhanced students' abilities to visualize situations and to use their mind's eye to determine if their planned action was correct.

7. The acceptance of operating within constraints: Art gave students a chance to use the constraints of a medium with which they were producing and inventing new ways to use those constrains productively.

8. The ability to see the world from an aesthetic perspective: Art taught students to use fresh, new ways of perceiving traditional images (Eisner, 1998).

Eisner's eight competencies were closely related to Bloom's (1956) taxonomy of the cognitive domain. Bloom's enduring and useful model for enhancing thinking identified six levels of complexity of human thought. These levels, from the least to the most complex, were knowledge, comprehension, application, analysis, synthesis, and evaluation. Bloom's three upper levels of higher thinking— analysis, synthesis, and evaluation— coincided closely with Eisner's theories on student learning in the arts.

Together, Eisner and Bloom's theories emphasized the cognitive growth opportunities implemented during art education:

1. Analysis is the ability that a student had to examine the relationships of the parts to each other and to the whole. The learner reorganized information into categories and was able to understand both content and structure of the material.

2. Synthesis refers to the ability to put parts together to form something new. This level stressed creativity with emphasis on forming new patterns and structures.

3. Evaluation is concerned with judgment or assessment of different options within the creation of a work of art (Sousa, 2001).

"The upper three levels (analysis, synthesis, and evaluation) described a *divergent* thinking process, because the learner's processing resulted in new insights and discoveries that were not part of the original information" (Sousa, 2001, p.255). Additionally, divergent thinking was described as the generation of multiple and unusual possibilities used to solve a task problem. Divergent thinking became the thinking process of creative learners. This process was contrasted to convergent thinking, which involved arriving at a single correct answer—the process emphasized in most classroom curricula and on intelligence tests (Guilford, 1985). Anderson and Milbrant (2005) restated Csikszentmihalyi's theories on the qualities found in divergent thinkers as ones that led to enhanced problem solving techniques because creative learners did not restrict themselves to agreed-on ways of thinking or agreed-on solutions. When the learner was thinking at these upper levels, thoughts flowed naturally from one concept to the other, and boundaries disappeared.

Extensive studies were conducted substantiating art education as a contributing factor for improving literacy in our schools. As part of a case study, Nickell (2003) discovered that students in a targeted school exhibited a decline in reading literacy between their second and fourth grades. This was evidenced by low reading scores, below proficiency assessment records, and poor performances on the Iowa Tests. As a result of comprehensive research, Nickell (2003) became convinced that art education could play a significant role in the growth of a student's reading literacy expressions and connections.

Nickel related that the findings on extensive studies performed by Eisner indicated that art education helped create a concrete learning situation for subjects such as reading. "Art work brings obscure and vivid parts of a passage together; contributes to the development of emotions and understanding of written ideas; and synthesizes unity of text, making the aesthetic experience possible, which is, in essence, reading comprehension" (Nickell, 2003, p. 21). Furthermore, Nickell commented on reports made by the National PTA. This organization stated that connecting students to the visual arts increased their interest in the world. Additionally, the National PTA report suggested that students who were involved in formal visual art instruction learned: (a) the weight of vocabulary definitions, (b) how to make extended evaluations, and (c) the benefits of working in groups. The organization also revealed that visual art enhanced self-esteem by allowing students to have positive experiences within the classroom setting (Nickell, 2003).

Chapman, as reported by Nickell (2003) attested to the intellectual and emotional connections made during visual art experiences as a way of increasing a student's ability to problem solve. It was concluded that during the processes of art education, students grew more comfortable with the techniques of self-expression and consequently became more positive and authentic learners. Realizing the powerful implications of his research, Nickell began plans to improve literacy at the targeted school by integrating art education into the reading classes and reading into the art classes. During the period of September 2002 to January 2003, the goals for the participants in the third grade class included improving oral fluency, written accuracy, and reading comprehension. The art processes used to implement these objectives included lesson plan designs for use in art and reading classes. In art classes, these designs included:

1. Adapting the art curriculum to include the implementation of specific reading strategies. Teachers employed art production, art criticism, and aesthetics to accomplish this goal. Examples of projects included: Reading about cameras and photography followed by the construction of a pinhole camera; designing and painting posters on Australia after reading about the country and its people; creating a line movement drawing in pen, ink, and watercolor after reading about the history of Van Gogh; writing an essay on the emotions found in their paintings and sharing their stories both written and orally with the class; sculpting a famous person's name or image in clay and reading about this character's history; reading a popular comic strip, studying comic drawing techniques, and designing a cartoon story panel.

2. Creating a word wall in the art room with third grade words of fluency to use in art activities and projects.

3. Adding oral presentations that discussed and reflected on completed artwork.

Designs for use in the reading classroom included:

1. Adapting the reading curriculum to emphasize art content.

2. Adding an art activity to the 2-hour reading block.

3. Reading orally to students twenty minutes per day, while displaying artwork that built upon the meaning, emotion, or subject of the passage. These art displays along with inferring questions about conflicts and resolutions of the story stimulated a visual format from which personal art could be produced (Nickell, 2003).

For achievement comparisons, all data from the targeted third-grade class was compared to a controlled third-grade class not receiving the aforementioned interventions. At the conclusion of the project, the following was reported:

> The instructional reading strategies with the inclusion of art—by the end of the project students were adding more words and sentences to describe their artwork or the main idea of the story. During Art Instruction, by week 12, students were sharing their ideas in cooperative groups. (Nickell, 2003, p.39)

In addition to these academic achievements, the targeted group's classroom behavior had improved significantly. The results of the assessment scores showed an improvement of oral fluency, written accuracy, and reading comprehension by 12 students in the targeted group. The controlled group showed an improvement by two students. The results of this study related that in the targeted third grade, with the inclusion of art content in the

reading block and implementing reading strategies during art class, assessment scores improved.

Improvement of low reading scores and literacy through art education were not limited to Nickell's targeted group of students. Lowenfeld & Brittain (1975) related that several weeks after enrolling in an art class, a group of low achieving ninth grade students improved academically. The instructor of this class attempted to change the self-concept of these low achievers by providing an up beat, positive classroom environment with positive feedback on their works of art. The students were encouraged to create works of art that were meaningful to them personally. Lowenfeld and Brittain explained there was a great sense of satisfaction in expressing one's own feelings and emotions in art. Once a student experienced this process and became comfortable with it, the student became even more encouraged in his own independent thinking.

> Art, through self-expression, can develop the self as the important ingredient in experience. Because nearly every emotional or mental disturbance is connected with a lack of self-confidence, it is easy to see how the proper stimulation of the child's creative abilities can provide a safeguard against such disturbances. (p. 19)

The individual's own expression of prime importance was a direct response to the development of a positive self-concept of ability and attitude towards achievement. In addition, Eisner (1972) testified that art education in the classroom setting was a unique contribution to human experience and understanding and at times improved students' test scores. However, he argued that "although it is possible to use art for the attainment of non-artistic ends (improving test scores and literacy in reading and other subjects), the

major justification for the teaching of art lay precisely in its unique contributions to "educating artistic vision" (p. 257).

During Nickell's (2003) research he encountered literature that indicated art education not only improved reading literacy but sustained writing skills as well. He reported that Kelloge specified in his research that "children who are encouraged to continue to scribble and are given materials to create pictures, over time will have greater control of their drawing lines and written letter development" (p. 27). Eisner (1972) contributed to this idea also, "For young children, especially, art is said to develop the finer muscles and hence improve the child's coordination" (p. 9). In spite of these findings, Eisner (1972) noted that it was not a worthy argument to teach art because it contributed to the fine muscle development of the young students. This, he claimed, could be acquired in many other fields as well.

Other positive effects of art upon writing literacy were reported by Ernst (1998). She suggested that writing was based on individual expression. By encouraging children to write with a visual image in mind, or to create a drawing before writing, students were more contented for ideas, allowing their writing to be more vivid and meaningful. In her writing workshops, Ernst provided her student with sketchpads and drawing pencils. Ernst believed that drawing equals good writing. She discovered that some of her students moved from pictures to words and others from words to pictures. In a fourth-grade writing workshop, she challenged her students to try to paint a picture or an idea with words. One day in class she leaned over her student's shoulder and read her plan for a picture:

> ‘The crashing waves tumble on the rigid rocks. The thunder roars overhead. The wind blows the sky above. The rapid waves soar through the ocean. The twisted skies flash with light.’ I could clearly see her plan. Her smile indicated she knew she had captured this in words. The drawing that followed was colorful and beautifully detailed. (p. 28)

Another student,

> Anna, in the same workshop, sketched the back of a little girl holding a palette and a brush, painting pine trees against a sky. Apparently she was planning her writing assignment by drawing a picture of herself at work. During work time she zoned in on this image and completed another page in her writing journal. (p. 29)

Ernst revealed that she began each morning with a drawing in her own sketch journal.

> Drawing gives me a focus, lets me settle into the day and gives me time to think. Writing usually follows; as I observe my drawing I often discover my thinking as it spills onto the page. Drawing and writing are a part of my literacy. (p. 28)

Personal, social, and academic success in reading and writing literacy were reported as enhanced and more successful when they were combined with art education techniques**.** The following reports exemplified increased student learning when art education was implemented into other curriculum areas beyond reading and writing.

Ohler (2000) came to believe, after years of teaching, that art had a new importance in the curriculum and should be included in the daily classroom experiences for all students. “Those who do not create art for a living will use it, manage it, interpret it, or interact with in ways that simply did not exist ten years ago” (p. 17). Ohler related an eye-opening experience he had a few years ago that helped him fully appreciate art’s new importance in education. He was watching a tenth-grade student struggle at his computer, trying to create a multimedia presentation for a language arts project. The student was not struggling with the technology; in fact he was clicking around on the

screen with comfort and ease. It was the aesthetics that seemed impossible to arrange. This student was working with design, graphics, and video clips and was unable to achieve the desired product. He was trying to create art and no one had shown him how. For Ohler, this was not an isolated incident. He saw it happen from school to school, from grade level to grade level, and from subject to subject.

> The multimedia environment of the Web requires students to think and communicate as designers and artists. The age of art has arrived, leaving behind the text-centric world that has guided us for so long. The language of art has become the next literacy—or the fourth R. (p. 16)

Ohler, like other noted authorities in this literature review, pointed out specific strengths he saw his students gain through art education. First on Ohler's list was the valued capacity for students to gain improved expression. "If our goal is to provide kids with the means to realize their potential and to communicate with others, then art is an obvious avenue to help achieve that goal" (Ohler, 2000, p. 17). Secondly, a relationship existed between the arts and improving cognitive functions. Ohler reported on Murfees' findings that vocabulary and reading comprehension were significantly improved for elementary students in the Arts Alternatives program in New Jersey. Art required expertise in synthesis and evaluation; developing these skills in one area helped in others areas as well. Thirdly, Ohler added, "the arts are motivational, inducing students to attend school and be receptive learners" (p. 17).

Finally, he supported the theory that there was no better way to understand and experience the diversity and commonality of humanity than through art. Multicultural awareness and personal growth were at the heart of art's contribution to students. Ohler

claimed, “When art becomes imbedded in our curriculum as strongly as the three Rs, it will become self-perpetuating and unquestioned” (Ohler, 2002, p. 18). Fortunately, because of the world of multimedia, additional opportunity and support for art education existed. Additional case studies demonstrating the use of specific art activities to effectively teach basic concepts in math and science followed.

In a sixth-grade math class, students created artistic renderings of factor trees and hung them as mobiles. They also made quilts out of geometric shapes, using fraction concepts and area and perimeter calculations. In a life science classroom, students made rubbings of leaves and bark to compare plant structure. To complete this project the students bound the rubbings in a hand made book (Sprague & Bryan, 2001). The teachers of these students provided opportunities for student achievement in each of their subject areas with hands-on, mind-engaging art activities.

Art brought literacy to a group of English students who were having a difficult time understanding the concepts presented in Shakespeare’s plays. Collaboration between an art museum and the English class helped students gain understanding for Shakespeare. Students were required to visit a community art museum to view three works of art that correlated to their study of the play *Julius Caesar*. The visuals *The Assassination of Julius Caesar; Julius Caesar, Act IV;* and *Aloha, Julius Caesar* helped the students to “infer, predict, remember, analyze, and enjoy Shakespeare’s *Julius Caesar* on a level not typically experienced” (Barry, 1997 p. 634). One student reported,

> Ever since I saw the works of art, I have been able to recall, almost completely, the images and feelings I experienced. More importantly, the visuals activated my prior knowledge and sparked my interest in the story. At first I did not think I

> knew very much about Caesar, but after I viewed these three works of art, it all seemed to come back to me. Also, after seeing the works, I became genuinely interested in learning more about Caesar. (p. 635)

This union between an art museum and the English class created meaningful and extended learning experiences.

Another museum, New York's Museum of Modern Art, also became an unexpected learning environment for science students. Here they looked closely at works of art, reasoned about what they saw, and transferred these same thinking skills to a science activity. A Visual Thinking Curriculum (VTC) in which 162 9 and 10-year-olds were trained to look closely at works of art and talk about what they saw generated the learning tools used to analyze scientific objects (Trishman, MacGillivray & Paimer, 1999). Over the course of a year, these students participated in an average of seven to eight VTC lessons, each being approximately 40 minutes in length. All of the classes also visited the Museum of Modern Art in New York City at least twice. After one year of participating in this curriculum, students where shown non-art images from their science classes and asked to analyze them using the same two questions they had employed to analyze art: "What is going on in this picture?" and "What do you see that makes you say that?" Reponses to the science images were scored in terms of amount of reasoning about evidence used.

Students that had participated in the VTC classes achieved higher scores on evidential reasoning on the science task. The students appeared to have visual and reasoning skills acquired from looking at works of art, which they then deployed when given a scientific image. This study presented clear evidence that skills learned through

the arts can transfer to science. This study lent weight to the argument that the arts "add value to what and how students learn beyond specific subject matter attainment. Thus, engaging in art criticism is a worthy skill to develop, as a tool for developing art appreciation and thinking well in other disciplines" (Trishman, et al., 1999, p. 153).

A bridge between art making and poetry writing skills formed a link between two communities. On Thursday, November 17, 2005, 80 students from three Mississippi high schools came together on the beach at Bay St. Louis to fly kites that they had created from the debris of Hurricane Katrina. The kites were adorned with poetry that the students had written. Visual art teachers, language arts teachers, and their principals from Ocean Springs High School, Laurel High School, and Bay St. Louis High School collaborated to guide their students in a seven-day kite making/poetry writing project. The teachers worked with DreamYard teaching artists sponsored by the Mississippi Arts Commission Whole Schools Initiative (Lord & Robinson, 2005). Following their workshop, the teachers returned to their respective high schools and taught students and other teachers the skills of kite building and poetry writing. The goal of this collaborative project was to integrate the use of art and language arts education to help young people identify their own power to help their communities rebuild in the wake of the disaster. This project not only celebrated the courage for community renewal but also the power of collaboration and the possibilities inherent in bringing art and other disciplines together. Many significant personal, social, and academic issues were touched upon by the successful work of these students and teachers. The strength and positive impact of art education was experienced beyond the schools' curricula into many communities.

Motivated by a plan for school improvement, intrigued by the possible outcome of combining into an interdisciplinary thematic-centered curriculum the disciplines of Spanish, and visual art, a study team at St. Charles High School in Illinois, initiated the five year La Frontera project (Kling & Zimmerman, 1999). They called the class La Frontera which meant "the border" because they crossed traditional borders of school disciplines. As the team began, they modified their traditional scheduling structure by blocking two periods to combine the Spanish and art classes. Now, students had a longer, more meaningful time frame in which to apply knowledge presented, nurture relationships with teachers and peers, and participate in group activities and projects. This integrated approach emphasized connections and relationships rather than separate subject/separate skill-based learning. The curriculum was organized around themes and topics, essential questions, and real life issues while including appropriate content knowledge that met district standards. The team garnered support through student and parent surveys and administrative level endorsement. Conclusions from the La Frontera project provided evidence that an integrated curriculum does have a positive effect on student achievement. A larger proportion of La Fontera students continued on to upper level Spanish classes than students who participated in traditional Spanish classes. Students in La Frontera consistently demonstrated higher curricular achievement in art than students in traditional art classes. Induction of students into the National Art Honor Society and Advanced Placement Art enrollment showed a disproportionately high number of La Frontera students (Kling & Zimmerman, 1999).

Together these studies presented positive data, promoting the inclusion of art education in the curriculum. “If students can understand concepts from their fields of study in a way they can visualize them, experience them, and express them, they will retain and use that knowledge wherever they go” (Tilney, 2001, p. 25). This literature evidenced examples of how art education’s stimulating and enriching curriculum became a successful contributor to student achievement.

Art Education Built Self-Esteem and Improved Behavior

The following case studies highlighted the potential of art programs to promote positive changes in students’ behavior, resulting in increased self-esteem and academic achievements. During a three-year innovative arts program that facilitated teaching and interaction between artists and institutionalized juvenile offenders, it was found that the youth attending the art workshops displayed significantly less disruptive behavior. During art classes a more peaceful manner of expression was exhibited by the participants. Results also suggested that involvement with the arts reduced recidivism. While art classes kept the troubled youth physically and mentally occupied in a constructive way, students had rich opportunities for personal growth. “Art instruction teaches youth about themselves, their sensations and their ideas, and shows them unexpected ways of understanding other people and the world” (Ezell & Long, 2003, p. 108). Often art was cathartic, providing a release of tension in a manner that was not dependent on the normal verbal communication of feelings. To these youth, it became a socially acceptable outlet for releasing tension.

Other qualities of character evolved as the students continued in their art program. Because of the explicit details and extensive work required to complete works of art, the qualities of endurance and patience as well as feelings of competence were developed. For many of these juveniles, these were new feelings and ones of exhilaration. “Taking a sense of ownership and responsibility for something successfully accomplished decreased their delinquent behaviors, improved their academic performance, and gave way to a higher rate of graduation” (Ezell & Long, 2003, p. 109). Students personally acknowledged having a sense of increased confidence, self-esteem, and self-awareness because of having participated in the art workshops. The workshops provided these students with a safe but challenging learning environment. They received positive attention and recognition from their instructors as well as from local artists who volunteered their time to teach and motivate. Exhibition of the students’ artwork also provided them with a positive voice in the community, a contribution that was new, but satisfying. Another case study demonstrated behavioral and personal-esteem transformation of a high school community through the arts.

Byron Center High School in Michigan had an embarrassingly poor band and choir. The school board and administrators knew that they had to either eliminate the arts totally from their school or make an exemplary fine arts program. Basically, they favored cancellation as they “considered the arts to be for kids who lacked authentic ability to do anything” (Skilling & Carstensen, 2003, p. 32). The principal, William Skilling, was not convinced that this was the right thing to do. In an effort to gain insight into his students’ needs, he met with some of the school’s fine art students to discuss the future of their arts

program. These students exhibited extreme passion for their art and Mr. Skilling's heart and attitude were changed. He began to think big about the arts in a new way. He wanted excellent teachers, outstanding facilities including a performing arts theater, an art gallery, and of course superior equipment would be needed. Extended efforts were made to raise community awareness and support for the project. Private donations purchased pianos and the acoustical shell. Additional endowments were received.

Within five years, Byron Center High School had gone from a failing fine arts facility to an exemplary one. The principal himself had gone from ignorance to an appreciation of the arts and its importance as an integral element of a well-rounded education. Mr. Skilling reported, "Arts involvement boosted student achievement in academic areas, reduced discipline problems and gave non-traditional or at-risk students a niche to explore their own creativity and be successful" (Skilling & Carstensen, 2003, p. 33). The arts created additional positive effects on the participants at the high school. It became cool to be involved in the arts.

One star athlete auditioned for a part in *My Fair Lady* in the winter of 2001 and later described the experience as "the best thing I did in high school" (Skilling & Carstensen, 2003, p. 34). During the 2001-2002 school year, 85% of the student body was involved in fine arts performances or classes. One tenth of the student body was in the school musical and academic results improved. "Average ACT scores had gone up for five consecutive years, and state achievement test scores increased" (Skilling & Carstensen, 2003, p.34). Included in Skilling and Carstensen's article was a report from the Michigan Council for Arts and Cultural Affairs stating that a background in the arts

was found to be a common denominator among highly successful corporate leaders. "Successful leaders are visionary, creative people and the arts help foster this creativity. If you want to educate tomorrow's leaders, the arts are an important foundation" (Skilling & Carstensen, 2003, p. 33). While enhancing the lives of students and a community, education in the arts improved students' self esteem which led to improved grades in the academics and test scores.

Art Education Enhanced Sensitivity and Learning in the Affective Domain

Bloom's (1956) taxonomy of educational objectives, as discussed in the beginning of chapter 2, received wide acceptance in the educational community. The objectives that Bloom and his colleagues pioneered were classified into three domains: cognitive, affective, and psychomotor. "Cognitive objectives are satisfied when students obtain an appropriate level of knowledge, and affective objectives are satisfied when students obtain an appropriate level of internalization or value for the content. Psychomotor objectives are satisfied when students reach acceptable levels of physical skill which are often irrelevant for classroom instruction" (Bolin, Khramtsova & Saarnio, 2005, p. 154). Notwithstanding the acceptance of Bloom's taxonomy, educators chose to focus mainly on the attainment of cognitive objectives, often ignoring the affective domain (Bolin et al., 2005; Liff, 2003; Main, 1992). Bloom, Madaus and Hastings, as cited in Bolin et al. (2005) reported that as instructors devoted more and more time to cognitive objectives, they pushed the affective objectives further into the background. Educators spent most of their teaching time teaching facts that students must know instead of teaching students why they should know these facts. Research has shown when

the affective domain was ignored, learning and retention were reduced. Furthermore, it was discovered that learning within the affective domain is strongly linked to the scholarly growth of students. Psychologists proved through brain research that humans largely think through their feelings. Therefore, successful creation of an environment for cognitive learning greatly depends upon how a student feels about what is being taught—the affective domain (Bolin et al., 2005; Liff, 2003; Main, 1992; M. Ryan, personal communication, March 19, 2007). "The problem with ignoring affective outcomes lies in its subtle impact on overall instruction. When instructors teach only to the cognitive domain, students may have trouble finding value in the information" (Bolin et al., p. 154). Daniel Goleman, as reported by Liff (2003), related that traditional IQ contributed, at best, about 20% to the factors that determined life success. The other 80% resulted from other factors, which fell within the affective domain. "The components of emotional intelligence may be a more powerful predictor of important life outcomes than intellectual intelligence alone" (p. 29). Liff (2003) and Ryan (2007) maintained that children and adults were feeling beings first. These claims spoke to the need for social and emotional learning across the grade levels in education.

To implement affective objectives in the curriculum, one instructor assigned her students a daily journal writing task to reflect on their course topics. Even though the journals came in various forms, at the conclusion of the course the instructor found that they had several characteristics in common. First, the journal entries showed that the students reflected on the relevance of course topics to their own personal experiences, which stimulated affective thinking. Second, the journaling encouraged students' self-

expression, linking information from the class to their real world attitudes and opinions. Finally, the journals provided valuable feedback to the students about their growth and change (Bolin et al., 2005). This study's literature review demonstrated how the affective qualities exemplified by students during art education classes were similar to the affective qualities reported in the students' journals.

A valuable element found in art education that stimulated the student's creativity and learning was the personal feelings of the students, which were metaphorically referred to as "the heart" of learning. Art education classrooms were optimal for learning and became the gateway to increased sensitivity and learning in the affective domain. These affective objectives in the art curriculum triggered learning processes by personalizing the curriculum which in turn promoted self-awareness and created experiences with and understanding of the world (Ballengee-Morris & Stuhr, 2001; Barrett, 2003; Berk, 2005; Eisner, 1972; McDonald & Fisher, 2002; Vygotsky, 1971). Self-aware students were able to reflect upon and recognize their own state of being and be clear about the causes of their feelings. Being able to understand one's emotions facilitated the opening of avenues to meaningful thinking and learning (Liff, 2003). Students explored significant affective learning in art education through active, hands-on, bodily manipulations of materials which heightened a student's thinking, feeling, and sensing (Burton, 2001; Sousa, 2001). The development of problem-solving skills resulted when a student was most challenged with decisions that must be made to create a work of art (Eisner, 1972). Additional indicators of affective learning were the cathartic effects that art education environments made on students, guiding them to qualities of endurance,

patience, and a sense of accomplishment. These characteristics of improved behavior and increased self-esteem equated with improved learning (Ezell & Long, 2003; Skilling & Carstensen, 2003).

The Alberta Department of Education conducted a survey asking their students' parents to list specific signs of learning they would like to see demonstrated by their children (Lambert & Himsl, 1993). This list defined many elements of the affective domain and equally represented the values and emotions that triggered the learning process. The main indicators listed by the parents for acceptable learning behaviors were: self-esteem, self-worth, motivation, communication skills, interpersonal relationships, problem-solving skills, happy and positive attitudes, creativity, curiosity, and questioning. The last item on the valued behaviors list was academic excellence (Lambert & Himsl, 1993). This listing of behaviors not only specified desired qualities esteemed by parents but magnified the same objectives implemented in art education. These elements nurtured and fostered affective development by promoting student interactions, verbal and hands-on responses, lesson-designs, and management strategies that were sensitive to and inclusive of objectives in the social and emotional domains.

Art Education Fostered Pleasure and Self-Satisfaction

Perhaps the most beneficial aspect of art education was the one that was most often overlooked and definitely the one most devalued in the eyes of educators and administrators—that was, the enjoyment and pleasure of creating art. Art making has been viewed as a behavior that was specific to the human species. Some other animals, the elephant for example, were conditioned to daub paint on paper or canvas, but they do

so only to be rewarded with food or petting from their trainers. “Only humans, Homo sapiens, make things just for their own sake and for the pleasure that comes with the making” (Wilson, 1998, p.1). Moreover, art-making behaviors were a conscious act of humankind since the beginning of time.

> Our forefathers, who emerged sometime between 1.5 and 1.9 million years ago, exercised thought processes beyond their biological needs. They mixed iron oxides with water or animal fat and heated them to create a natural red ochre pigment for staining skin, bone, earth, and objects interred with the dead. (p.3)

Stepping back in time only evidenced that humankind demonstrated the innate desire to make new things that were not found in nature. This joining together of objects, using whatever methods the process called forth was a self-conscious act of creation; the intent was to produce meaningful compositions that brought pleasure (Wilson, 1998). Based on the extensive observations of various societies, it was known that humans had an intrinsically aesthetic nature. They liked to make something special to set their most meaningful experiences apart from the everyday ones. “Making special implied intent or deliberateness. When shaping or giving expression to an idea or embellishing an object, or recognizing that an idea is artistic, one acknowledged a specialness that without one’s activity or regard would not have existed” (p. 6). Realizing the historical extent of man’s art making endeavors, theorists searched for the biological roots of art. Wilson (1998) reviewed the research efforts of Eibl-Eibesfeldt on the subject. He reported that this researcher generally viewed art as an extension of other and more basic behaviors such as communication and gaining dominance. These behaviors, Wilson theorized, were passed down from generation to generation, and therefore became genetic in nature; clearly art

was more than just something humans do for pleasure and special events, but it was something they inherently do. Creatively joining together objects became something they were driven to do in order to satisfy basic needs and desires. This aesthetic form came from the heart and soul of the artist. The message here was imperative to educators: The benefits of art education lay far beyond building cognition, improving test scores, promoting positive attitudes and self-worth —at the soul of art resides pure joy.

The experience of making art, according to Anderson and Milbrandt (2005), was intrinsically significant. They pointed out in their text that art making and play came from similar pleasure-seeking centers in the psyche and the pleasure associated with them enticed the art makers to engage in something conducive to their survival. "The survival function of play and art is that they allow us to learn, in pleasurable, non-threatening circumstances what things are like and how things work" (p. 143). Additionally, as students engage in positive art-making learning, the pleasure they experience results in new and satisfying levels of communicating something significant and meaningful about their lives.

The Mississippi Arts Commission (MAC) funded schools since 1991 to embed the arts into regular classroom instruction. For the last five years, the program became known as the Whole Schools Initiative (WSI). It reported a host of academic, social, and personal benefits enjoyed by students as a consequence of infusing the arts across the curriculum (Corbett, Wilson & Morse, 2004).

> The arts added considerable value to students' education. Academically, art heightened students' comprehension and retention of content and sharpened their ability to think critically and creatively about the material. Socially, the students'

> had increased opportunities to communicate with one another on school-related matters. Personally, students became more confident in school because those that had heretofore been unsuccessful academically often found that they stood above their classmates in the arts. Most importantly, students reported increased enjoyment and motivation. (p. 2)

Art had always been a way of celebrating ordinary experiences. Communities and cultures made art because art made everything special. When art was used to celebrate ordinary experiences, these experiences took on new meaning and significance. By making events and things stand out from the everyday norms, art transformed, reorganized, and enhanced our concepts of ourselves and our world (Wachowiak & Clements, 2006).

Accepting and Extending the Claims

Regardless of art education's persistent struggles for acceptance and inclusion in our schools, this study's literature review magnified its widespread and positive influences on students' personal, social, and academic achievements. Researchers', educators', and theorists' publications as early as Dewey (1934), Vogotsky (1971*),* Eisner(1972*),* and Lowenfeld (1975) to present day works including Efland (2002), Corbett et al., (2004), and Anderson and Milbrant (2005) all substantiated art education's value and existence. If one stepped back, combined these claims, and viewed them as a whole, additional benefits and advantages are revealed. These qualities facilitate the formation of additional strengths in students as a bi-product of their art experiences. The beliefs held by students about their capacities to achieve are enhanced through the acquired skills, demanded quality thinking, and persistence required in art making experiences. The implications of this research had led convincingly to the inquiries of this

study: “What is the relationship between art education and student self-efficacy?” A closer look at what researchers have said about self-efficacy establishes grounds for continued research.

The Role and Development of Self- Efficacy in Students

One educational assumption encompassing self-efficacy reflects that the beliefs students hold about their capacities to succeed are the vital forces that direct their endeavors (Johnson & Johnson, 1996). If held with positive attitudes, “these self-efficacy beliefs provide the foundation for motivation, well-being, and personal accomplishment in all areas of life. Unless young people believe that their actions can produce the results they desire, they have little incentive to act or to persevere in the face of difficulties that inevitably ensue” (Pajares, 2006, p. 339). Guiding students to be as successful as possible in managing their personal achievements is a vital role of teachers. Achieving such success often requires changing behavior which is very challenging for students, their families, and educators working with them. Many factors influence behavior change: knowledge, skills, attitudes, beliefs, and social support. One important variable is self-efficacy, the belief that students hold about their capabilities to perform specific behaviors necessary to achieve their goals. Considerable research established that one’s self-efficacy influenced the likelihood of behavior change (Bandura, 1995, 1997; Pajares, 1996, 2002; Schunk, 1994; Zimmerman, 1995).

> Social cognitive theorist, Bandura (1986), defined self-efficacy as
>
> people’s judgments of their capabilities to organize and execute courses of action required to attain designated types of performances. It is concerned not with the

> skills one has but with the judgments of what one can do with whatever skills one possesses. (p. 391)

It is important to note that often a mistaken understanding of the role of self-esteem versus that of self-efficacy exists. Robert Sternberg, as cited in Eisenberger et al. (2005) made the distinction clear. “Every child becomes more self-efficacious when they accomplish something they didn’t think they could. If you want mediocrity embrace self-esteem; if you want growth embrace self-efficacy” (p. 7).

Unlike self-efficacy, the qualities of self-esteem are individual, personal characteristics, which have a certain stable influence on overall behavior. On the other hand, self-efficacy is related more to specific situations and tasks (Lenz & Shortridge-Baggett, 2002). For instance the qualities of self- esteem include judgement of self-worth, predict satisfaction, and produce contentment while the qualities of self-efficacy include judgment of personal capabilities instead of self-worth, predict effort and motivation instead of satisfaction and produce goal achievement instead of focusing on contentment. (Eisenberger et al. 2005). Zimmerman (1995) extended this concept when he added that the motivational effects of efficacy “are not limited to a specific task but can extend to other tasks in the same context” (p. 206). One might find it therefore plausible, that self-efficacy generalizes from one learning situation to another.

Several sources existed for building and enhancing a student’s self-efficacy (Bandura, 1997). The first source, a student’s own experiences with success, or mastery experience, was extremely powerful in enhancing self-efficacy. When students believed their efforts were successful, their confidence to accomplish similar tasks raised.

> Once a person has high self-efficacy, she or he tends to generalize from one experience to another. Students who are certain of their capacities tend to attribute any future failure to situational factors like not enough effort or bad strategy. Students with low self-efficacy will sooner attribute failure to their own incapacity. (Vanderbiljl & Shortridge-Baggett, 2002, p. 11)

Source two allowed students to build their efficacy beliefs through vicarious experiences while observing other students in similar learning environments. The successes or failures of role models altered a student's beliefs to the degree that they felt similar to the model in the same areas. For instance, watching a classmate succeed at the skills needed to create a work of art convinced other students that they too could possibly conquer the challenge (Bandura, 1997; Zimmerman, 1995).

Students often depended on others to give them feedback and judgments about their academic attainment. Often students were not yet skilled at making accurate self-appraisals and, therefore, depended on the encouragement from parents, teachers, and peers whom they trusted. These verbal persuasions, source three, boosted their confidence in their academic capacities and resulted in enhanced self-efficacy (Bandura, 1997; Usher & Pajares, 2006). Lastly, Bandura (1997) hypothesized that students interpret emotional and physiological states such as experienced tension, anxiety, and depression as signs of personal deficiency. Students learned to evaluate their own emotions as they experienced physiological conditions and interpreted these as indicators of personal efficacy. What students believed about these symptoms influenced their self-efficacy and provided cues to expected success or failure (Usher & Pajares, 2006).

Extensive research on the concept of self-efficacy was especially prominent in the field of education (Pajares 2006). Scholars reported that "regardless of previous

achievement or ability, self-efficacious students work harder, persist longer, persevere in the face of adversity, have greater optimism and lower anxiety, and achieve more" (p. 343). Zimmerman (1995) claimed that self-efficacy helped to prepare students not only to gain new knowledge and cultivate new skills but to accept responsibility for their own education. Achievement qualities such as these needed favorable circumstances for growth and refinement. To stimulate these attributes, educators had to plan and provide rich experiences that shaped their students' perceptions of their abilities to succeed in school.

Defining the Relationship Between Art Education and Student Efficacy

At this point, one might begin to draw a meaningful connection between art education and students' heightened self-efficacy by examining Bandura's four efficacy formation processes: mastery experience, vicarious experience, social persuasions, and physiological reactions and relating them to students' experiences in the art classroom. Bandura stated that students' mastery experiences were the most influential source of self-efficacy information. Self-efficacy theorists related the development of self-enhancement "to raising competence through genuine success experiences with the performance at hand, through authentic mastery experiences" (Pajares, 2006, p. 344). Looking more closely into the arena of the art classroom, it became clear that hands-on, skill-developing experiences were a major focus. Art students had the opportunity to practice, demonstrate, and master challenging artistic skills almost daily. This work was performed individually as well as in groups which added to the child's sense of accomplishment (Burton, 2001). Art educators noted that the design of these skill-

building tasks were challenging but also were held to an accomplishable level of difficulty. If so, then successful completion of the project was self-rewarding and energizing, and the formation of self-efficacy beliefs were initiated (Ohler, 2000).

In addition to the importance of building mastery experiences, students formed their efficacy beliefs through vicarious experiences—observing others performing similar tasks (Bandura, 1997). This theory lay in the thought that "If he can do it, then so can I!" This process of do as I do was a daily occurrence in the art room. Art students in the middle school are surrounded by other students who are similar in capabilities. Lenz and Shortridge-Baggett (2002) explained that similar characteristics among students in a classroom had a positive influence on learning. When a vicarious model was comparable in age, ethnic background, socio-economic status, and education level he was usually seen as an indicator of a person's own capacities. Students therefore identified with the model and watched the demonstrations without question or judgment. During art making, students saw their peers fail, start over, fail, and begin again. These attempts at start and restart were very typical of middle school students who were learning new art techniques. Many art teachers used peer models to teach skills. "Models whom students believe are similar to themselves are apt to exert better effects on observers' self-efficacy for learning" (Schunk & Meece, 2006, p. 88). Art skills modeled by artists or educators during classroom instructional videos were also effective examples of vicarious learning. In addition to the vicarious experiences produced while observing and interpreting the actions of models, students also made social comparisons with each other during class

time, which formulated powerful influences on self-efficacy beliefs (Pajares, 2006; Zimmerman, 1995).

The third source of self-efficacy information was acquired from verbal messages and persuasions that students received (Bandura, 1997). One major focus of an effective art teacher was to promote a positive learning climate in which inquiry, creativity, and individuality thrive. The pedagogy of the visual art teacher prepared him to establish an effective, positive, and productive atmosphere in the classroom. Encouraging and praising the genuine efforts and persistence of the students impacted their capability beliefs. (Wachowiak & Clements, 2006). The nontraditional approaches to assessment (i.e., seeking evidence of learning within the natural art experiences or results of those experiences) used in the art classroom were less obtrusive than traditional testing situations, and often resulted in making the efforts of the student more memorable and meaningful (Armstrong, 1994). Evaluation and critiquing students' artwork in this manner was a valuable and necessary part of the art curriculum and created opportunities to enhance the development of not only their skills but eventually their self-efficacy.

The fourth source of self-efficacy stemmed from the information that people obtained from their physiological and emotional states (Bandura, 1997). Students' interpretations of their experienced anxieties, stresses, or incidents of depression created elements of negativity and lowered self-efficacy. This researcher's examination of art education literature revealed numerous and significant findings where incidents of stress, peer pressure, and anxiety were minimized for students during participation in art classes. Overall behavior improved, with increased school attendance and fewer visits to the

school nurse (Bolin et al., 2005; Ezell & Long, 2003; Liff, 2003; Ohler, 2002; Skilling & Carstensen, 2003). Bandura reported that "self-affirming beliefs promote development of skills and a sense of personal efficacy" (p. 101). These beliefs helped students maintain the effort and perseverance needed to maximize their work toward the achievement they were seeking or they already possessed.

This literature review examined in detail the relationship between the positive elements of art education and their positive effects on student success as well as investigated the elements of self-efficacy and related how the experiences in art education classes encompassed the qualities of these elements for enhancement of students' self-efficacy.

Concerns and Considerations for Art Education

Art education programs were especially vulnerable to being cut or reduced when education funds were troubled and/or time restraints were placed on daily classroom schedules due to the proliferation of mandated testing. These programs became extra-curricular or eliminated altogether from the curriculum (National Art Education Association [NAEA], 2003). This syndrome led to art education being perceived as "hands-on, minds-off activities to be earned" (Chapman, 2005 p. 13). Because art classes were not mandated to administer state standardized tests perhaps they appeared to be less significant. Representatives of the National Endowment for the Arts and the Arts Education Program agreed that it said a great deal to educators that the arts did not employ standardized testing. "It says something about what we value and how we show what we value. Based on this one could conclude that we don't value the arts" (Newnan,

1990, p. 52). Although some statewide art assessments were under development, it was not clear whether or not art tests would ever be considered as a standard to measure in-school learning (Arts Education Partnership, 2003; Hatfield & Peeno, 2002). The assumption was that educators believed that state-tested subjects were the only ones considered to be valuable. However, it was noted that during the instructional time dedicated to the teaching of facts for standardized tests, important learning experiences were often lost. Even though some theorists such as Newman (1990) indicated that art education cried out for testing, which would ensure accountability, other leaders in educational theory renounced such testing. In response to Newnan's claims, Howard Gardner (1990) stated, "…the use of standardized tests answer a need that legislators and school board members think they have, but it does not answer the needs of youngsters" (p.57). Gardner was careful to clarify his statement by explaining that he is not against assessment; in fact, he believed that assessment was a natural and important part of professional growth. However, Gardner believed that assessments should be more than something students do with a number two-pencil and multiple-choice questions. He advocated that real assessment should incorporate elements that focused on tasks that children performed. Art portfolios, as example, were a meaningful alternative.

One of the most important facets of this study was to define and demonstrate the value of art education as a catalyst that bridged art concepts to student development in other subject areas. However, when these interdisciplinary connections were employed, it was significant to stress that the integrity of the art skills and techniques were maintained. This was a challenge. Too often art educators were tempted to steer clear of mixing the

elements and principles of art with other subject matter. They wanted to be cautious about the way art was integrated across the curriculum. The arts could become too simplified, resulting in becoming the "handmaidens to enrich other subject areas, rather than as rich and complex sources of content and skills for students" (Roucher & Lovano-Kerr, 1995, p. 22). Art had to be more than just an aid that enriched student learning in other subject areas. Pitfalls occurred when art was used primarily as a tool for learning about other subject areas, justifying it as making learning more active or fun, for example, making a salt map during a social studies lesson to learn about the Great Lakes. In a lesson plan such as this, beyond the information of the Great Lakes Region, did the teacher discuss the various forms of sculpture that could be used in making three-dimensional maps? Were examples of land formation sculptures observed and critiqued by the students? Did the teacher define the art vocabulary terms, high relief and low relief, so that students would understand the different levels of sculpture built on flat surfaces? Was information given to the science students on how artists build armatures to support their sculptures? Did students learn about adding found objects to their sculptures to make them more representational and realistic? If not, then the science/art assignment separated content from process. Inclusion of art across the curriculum meant teaching the elements of art-making, art history, aesthetics, and art evaluation necessary to teach the across-the-curriculum subject as well as the art education topics and factors. Combing these vital ingredients brought the active hands-on benefits of art education to other subjects.

In order to sustain art education in the schools of today, a university technology professor suggested, only half kidding—that we rename art. "The word comes with too much baggage. Being an artist implies a life of penury, emotional pain, and public misunderstanding" (Ohler, 2000, p. 18). He went on to suggest that in order to keep art alive in our schools it should be renamed something that could be rolled over into the literacy portion of the school's curriculum. "Then let it evolve in the eyes of the school to that which art educators and theorists already know it is—a leader in student growth and development" (p. 19). As a leader in student growth and development it was compensatory for educators to make opportunities to support and extend the benefits of art education into all areas of their students' lives. Harnessing professional learning communities to study, visualize and implement valid art programs was, as evidenced in the literature review of this study, at the heart of student growth, achievement and enhancement.

Research Basis for the Methodology, Data Collection, and Analysis

This quantitative true experimental study tested Bandura's (1997) theories on self-efficacy together with the constructivist theories (Walker, 2002) which advocated that learning was an active process in which learners must be provided with opportunities to interact with sensory data and construct their own meanings from it. The crucial action of learning was ignited through the mental process of constructing meaning, which was best initiated by engaging not only the mind but the hands as well (Bandura, 1997; Milbrandt & Anderson, 2005; Sousa, 2001; Vanderstaeten & Biesta, 1998). Noted features of

Bandura's theories and the constructivist learning theory that distinguished them from other theories suggested the following:

1. Learning was an active rather than passive process.
2. Learning was by nature social and likely to occur when learners shared ideas, inquired, and problem solved together.
3. Learners, to go beyond rote learning, had to have opportunities that made sense of new knowledge, and created meaning for themselves based on individual and shared experiences.
4. Reflection and metacognition contributed to the construction of knowledge and the process of sense-making.
5. New learning was mediated by prior experience, values, and beliefs. (Szabo & Lambert, 2002, p 205)

The principles of constructivism have evolved based on the contributions of educational theorists and practitioners whose work had influenced teaching and learning through implementation of the features of this construct. Even though Dewey never used the term constructivism, his ideas contributed greatly to its formulation (Walker, 2002). He expressed views that students must give meaning to learning and make sense of new knowledge based on their individual and collective life experiences. These personal experiences, he stressed, were essential to learning. "Every organism participates entirely in his life world. There is no reality without experience. Every act creates a new reality. Social interactions enable and force everyone involved to pay attention to the contributions made by other participants" (Vanderstaeten & Biesta, 1998, p. 43). Piaget's theory on the stages of cognitive development expanded the understanding of learning and contributed to constructivism. His views placed students at the center of their own learning through the active construction of knowledge (Walker, 2002). When students moved through the highest levels of Bloom's taxonomy of thinking skills and utilized the

principles of analyzing, synthesizing, and evaluating, they were employing constructivist behaviors (Souse, 2001). These students demonstrated a much greater depth of understanding in their learning.

In this study, the constructivist theory tested the relationship between art education and enhancement of self-efficacy in middle school students at a central Georgia middle school. The independent variable, art education, was generally defined as the study and manipulation of art-making skills, art history and culture, and visual aesthetics (Mittler & Ragans 1972). The dependent variable, self-efficacy, was generally defined as a student's sense of believing he/she has the capacity to perform in order to achieve and be effective (Costa & Kallick, 2004). In formulation of a theoretical perspective for studying the factors in art education that contributed to middle school student's self-efficacy, the use of the constructivist theory, according to Milbrandt & Anderson, 2005; Sousa, 2001; Szabo & Lambert, 2002; Vanderstaeten & Biesta, 1998; and Walker, 2002 provided an effective model. The elements of the constructivist theory aligned closely with the primary sources for building self-efficacy as proclaimed by Bandura (1997). Both theories encompassed the competence building elements present in art education and supported the active processes, social interactions, and shared meaning experiences of the art education environment as fundamental contributors to individual knowledge construction and enhancement of self-efficacy (Bandura, 1997; Galsserfeld, 1996; Wachowiak & Clements, 2006; Walker, 2002). The corresponding elements of these theories are paralleled throughout the literature review of this study.

At the same time, some obstacles existed with the implementation of the constructivist theory. “Teachers admit that there are barriers to using this approach regularly because it takes more time. There are a lot of pressures to cover, an ever expanding curriculum, and the tyranny of quick-answer testing of all types” (Sousa, 2001, p. 262).

Researchers and theorists Creswell (2003); Dooley (2001); and Trochim (2006) documented the elements of this design explicitly which revealed the elements needed by this researcher to test the hypothesis of this study; what is the relationship between art education and self-efficacy in middle school students. These factors included: pretest/posttest design; random assignment of participants to a treatment and comparison-control group; effective sample size (Macfarlane, 2002); controls for internal threats including history, maturation, testing, instrumentation, mortality, and selection interactions (Dooley, 2001; Trochim, 2006); and pretest reactivity (Dooley, 2001). The related research and literature demonstrated that the true experimental design was the most effective method to meet the requirements of this cause-effect study.

Aspects of the quantitative design approach that supported its selection for this study emerged from the literature as well and indicated that the best approach to test the dependent variable, art education and its effects on student self-efficacy, the independent variable, was the quantitative approach (Creswell, 2003; Gravetter & Wallnau, 2005). The structured procedures required by the one-way ANOVA to obtain the descriptive and inferential data were direct and often used in the field of education by researchers, educators, and policy makers.

The instrument used to test the variables of this study was the Patterns of Adaptive Learning Scales. The 72 items on the scales tested self-efficacy generally in three contexts with 14 supporting scales. The literature supported its reliability, validity, and effectiveness as a test of self-efficiency (Anderman et al., 2003; Midgley et al., 1998; Schunk & Meece, 2006).

Conclusion

The review of research and literature for this study integrated the most relevant and current published knowledge on art education and self-efficacy. The findings were consistent and indicated that students engaged in art education environments reaped a wide range of positive benefits. The literature also suggested that these benefits concurred closely with the basic sources employed to enhance students' self-efficacy. These factors presented support for the goals of this study: to test the elements in art education to find what relationship, if any, existed between this construct and the construct of student self-efficacy. If significance was found then support for art education's continuance in our schools would be strengthened. Content of this study's methodology follows in chapter 3.

CHAPTER 3:

METHODOLOGY

While researching the relationship between art education and self-efficacy in middle school students, this quantitative experimental study tested Bandera's (1986, 1995, 1997) self-efficacy theories as linked to the framework of the constructivist paradigm. Methodological procedures used to examine this relationship are presented in this chapter. A discussion of the experimental research design employed in this study is followed by a description of the middle school setting and sample population. The treatment, instrumentation, and data collection processes are also reviewed. Finally, the measures utilized to assure protection of the participants are reported in detail. Based on the findings ascertained by this methodology, along with the research-based literature, the intent of this study was to determine whether effective art education programs could help formulate and enhance middle school student self-efficacy. This information was critical to stimulating fruitful educator and policy maker reflections on how to implement art-education research into educational settings for the advancement of students' beliefs in their capabilities to succeed.

Research Design and Approach

A pretest-posttest two group true experimental design was used in this study. In notation form, the design can be depicted as:

Treatment Group: O---------X---------O

R

Comparison-Control Group: O----------O

where:

R = Symbolized that the two groups were randomly assigned from the same pool of participants.

0 = Symbolized that the measurement scale was administered in a pretest posttest design.

X = Symbolized that the treatment, art education, was received only by the treatment group.

According to the research designs described by Dooley (2001), the pretest-posttest control-group true experimental design provided an effective format to test the cause-effect relationship between the independent variable of this study, art education and the dependent variable, self-efficacy in middle school students. Several reasons emerged for selection of the true experimental design. First, it was considered by several researchers to be one of the strongest of the four main experimental designs with respect to internal validity (Creswell, 2003; Dooley, 2001; Trochim, 2006). Second, elements of other designs lacked specific factors of the true experimental design necessary to conduct this study effectively. The pre-experimental design did not have a control group to compare with the treatment group. The quasi-experimental design required both control and treatment groups but did not randomly assign the participants to the groups which was an essential element to the validity of this study. The single-subject design involved observing the behavior of a single participant or a very small number of participants over time (Creswell, 2003). One of the contributing factors to the validity of a study is a large

sample size such as that used in this true experimental design (N =120). Additionally, a small sample size as reported by Macfarlane (2002) could reduce the power of a study while larger sample sizes assured more statistical significance between the two groups.

The components of the true experimental design that controlled for common threats and strengthened internal validity became the third reason for selecting this design. The common threats that were controlled and strengthened by this design included history, maturation, testing, instrumentation, mortality, and selection interactions (Dooley, 2001; Trochim, 2006). Controlling for the threat of history and history of maturation was accomplished by testing the treatment and the comparison-control groups simultaneously. Threats to instrumentation were controlled by the standardized measurement procedures and the precise manner in which they were conducted for both groups for both the pretests and posttests. Selection interactions described as posttest differences and explained as a function of pretest differences were eliminated because each participant was randomly assigned to a group (Dooley, 2001). Random assignment was designed for the purpose of creating equivalency between the groups. One of the ways this researcher attempted to assure that random assignment to groups was successful was to employ a pretest component as part of the true experimental design. The pretest allowed a back-up check on equivalence of the groups before the intervention X, the independent variable—art education— was introduced. "If the groups prove not to be equivalent on the pretest, the pretest scores can be used to adjust statistically for the nonequivalence" (p. 184). Reviewing the treatment and comparison-control groups' pretest data for equivalency allowed the researcher to make necessary

adjustments to each groups' participants before the intervention occurred. If groups differ at the onset of the study, any differences that occurred in test scores at the conclusion are difficult to interpret and may be meaningless. These differences could be adjusted by selecting only the participants whose test scores were within a certain range and then randomly assigning them to the two groups (Gribbons & Herman, 1997). Additionally, some statistical analysis programs could adjust pretest score results to posttest score results to equate for score differences.

The true experimental design surfaced as being the most effective method to meet the requirements of this cause-effect study. More complicated designs and approaches entailed accessing much larger populations and using more lengthy data collection periods, both elements that were not available to this researcher. The important characteristics of the design used in this study could not only be implemented ethically and legally but were also essential to test the research question of this study which was, "What is the relationship between art education and self-efficacy in middle school students?" The design's primary weaknesses resulted in problems that could arise from the reactions of participants and administrators to knowledge of the varying experimental conditions (Trochim, 2006). Specific steps and procedures taken to reduce these problems in this study are discussed in the Validity Threats to Treatment section.

The above-mentioned techniques of this research design were used to obtain data during one 9-week grading period, using a 72-item pretest-posttest measurement scale, the Patterns of Adaptive Learning Scales (PALS; Midgley et al., 2000). This true experiment allowed the art teacher-researcher to compare the effects of the relationship

between art education and the enhancement of self-efficacy of middle school students. Additional advantages of using this design included the capabilities of obtaining data directly from a relatively large number of individuals in a relatively short period of time (Fogelman, 2002). This rapid turnaround in data collection exacerbates data analysis, creating possibilities for a more direct implementation of enhanced educational practices.

Factors encompassing the selection of the quantitative design approach for this study were influenced by the research problem, the personal experiences of the researcher, and the audience for whom the report would be written. The best approach to test the factors in art education that influenced the enhancement of student self-efficacy, as a step towards supporting the continuance of art education in our schools, was the quantitative approach. The cause and effect thinking, reduction of the research problem to specific variables, hypotheses, and questions along with collection of data on a predetermined measurement scale were elements of the quantitative approach that met the needs of this researcher. The structured procedures and rules of quantitative research created a direct and comfortable process for the researcher. At last, the quantitative approach with its explicit methods for collecting and reporting data were highly supported and used in the field of education by researchers, educators, and policy makers.

Population, Sample, and Setting

The population for this study consisted of all 2007-2008 seventh-and eighth-grade students at a central Georgia rural middle school, a total of 178 students. This population was selected because of its age appropriateness to the research goals and its accessibility to the researcher. The returning seventh- and eighth-grade students were selected over the

new sixth-grade students because of the upperclassmen's familiarity, understanding, and previous experiences with the middle school's classroom procedures and environment. These accumulated experiences strengthened the participants' confidence levels and abilities to make valid and informed choices of whether to participate or not to participate in the study. Additionally, the data collecting process for this study occurred within the first half of the new school year, a time when most sixth-grade students would be involved in the overwhelming task of acclimating to the middle school environment.

Because the researcher of this study was the middle school's art teacher, she had access to the names in the population and could sample the students directly. All participants were selected using random sampling to assure that no bias existed in the selection process. Each member of the population had the same probability, $p = 1/178$, of being selected (Gravetter & Wallnau, 2005). Each student's name was assigned a number, compiled into one composite list in random order, and entered into the school's scheduling software. The computer software, School Administration Student Information System (SASI), randomly placed students into their core curriculum and elective classes, one of which was visual arts with 60 available placement slots. Using the sample size and confidence interval calculator (Pearson Assessments) for 5% error rate, 95% confidence level, and a population of 178, the ideal sample size was 120 participants. Ken Fogelman (2002) stated that with a 95% confidence interval, the researcher is certain that the true population mean will be within the range of two standard errors on either side of the sample mean. This guide allowed the researcher to decide in advance the desired sample size, the level of uncertainty the researcher was willing to accept, and

what range of possible difference from the true population results could be tolerated (Salant & Dillman, 1994). “In this way the researcher, and others interested in the findings, can see and evaluate the level of precision with which the results can be interpreted” (Fogelman, 2002, p. 105). All seventh- and eighth-grade students who had taken art during the 2007-2008 school year were invited to participate in the measurement. Of those students who consented to participate, 60 were randomly selected to form the treatment group. In addition, all seventh-grade and eighth-grade students who had never taken middle school art were invited to participate in the measurement. Of those students who consented to participate, 60 were randomly selected to form the comparison-control group. Random selection of the treatment group members occurred by placing the names of the consenting art students in a hat from which, the scale administrator drew 60 names to form the treatment group. Similarly, random selection of the comparison-control group occurred by placing the names of the consenting non-art students in a hat from which, the scale administrator drew 60 names to form the comparison-control group. This process kept both groups of participants equal in number, totaling 120 participants.

The random sampling provided the best way to achieve equivalency within and Between Groups. Specific characteristics of the population were naturally stratified as a result (Creswell, 2003). These characteristics included both females and males, all income levels, extended range of physical and mental abilities, and cross-sectional representation of cultural, ethnic, and other demographic elements. The students in the

comparison-control non-art group eventually took art. As a result, all students received the same educational benefits at some point during the school year.

Treatment

All treatment group participants met in their art education class for 55 minutes a day, 5 days a week for a period of 9 weeks. The researcher of this study, a certified art teacher, who had taught art education at the middle school level for fifteen years, taught these classes. She implemented the same curriculum for each seventh-grade class and the same curriculum for each eighth-grade class. The curriculum included 5 weeks of studio production, focusing on drawing, painting, sculpting, printmaking, and graphic design skills and techniques. Additionally, 2 weeks of art history were presented with a review of selected artists and their cultures, time periods, and art forms. Also included in the 9-week curriculum was a 2-week study of aesthetics, encompassing interpretation and analysis of works of art, culminating with a field trip to the local art museum. These segments intermingled with one another and implemented state- and county-mandated seventh- and eighth-grade art education curriculums.

The comparison-control participants, the non-art students, met 5 days a week for 55 minutes per class for 9 weeks in a variety of other classes including both academic and elective classes. Experienced, certified middle school education teachers taught these classes. They implemented state- and county-mandated seventh- and eighth-grade curriculums for each subject taught.

Data were collected from both the treatment group and the comparison-control group during one 9-week session. The treatment group data were collected from the

participants during their art classes and the comparison-control group data was collected from the participants during their biweekly, school-wide released time study sessions referred to by the school as PAWS, a title selected to reflect the school's mascot. The comparison-control group's collection time and place were arranged and delegated by the school's principal. To allow for adjustments and schedule changes, the pretests were administered at the end of the first week. Posttests were administered at the end of the eighth week. Pretest follow-ups for absent students took place the second week and posttest follow-ups occurred during the ninth week.

Validity Threats to Treatment

Dooley (2001) reported that threats to experimental construct validity might occur with the manipulation of the independent variable (art education). He noted that considerations must be made by the researcher to prevent the treatment group from receiving additional stimuli beyond the intended intervention. Addressing possible factors that could confound the relationship between the program delivery and data outcome were taken into account before the intervention began. Accordingly, a review of the confounding variables related to quality instruction was conducted and a plan to prevent contamination, bias, and experimenter expectancy to the treatment group was implemented. First, to control for variations in the program delivery, careful focus was placed on standardizing the art education teaching objectives and their manipulation. These planned objectives were aligned closely to the required state and national art standards, thus keeping the art education units defined and exact. Second, no additional incentives, events, or lesson plan activities were devised to enhance the students'

perceptions or experiences in the art classroom beyond the normal, expected curriculum. Finally, the art teacher-researcher intentionally and purposefully avoided any subtle behaviors or clues that pointed the participants to the hypothesis of the study. Being close to the study, the researcher needed to maintain appropriate protocol and integrity of the study's process. One of the approaches used to keep bias separate from the study's findings was to extend an effort to avoid any emphasis or reminders to the participants that they were in a study. Keeping the participants in their natural art room setting reduced any apprehensions and expectations on the part of the participants to comply with possible demand characteristics of the study (Belmont Report, 1979; Dooley, 2001). Consequently, if these confounding variables were controlled then the only qualifying uniqueness in this experiment would be the art education treatment.

Efforts to maintain experimental construct validity must also be conducted to prevent threat of contamination of the comparison-control group. These randomly selected participants were seventh- and eighth-grade students who had never taken middle school art. Events that could contribute to control group contamination consisted of any unplanned or additional stimuli that would spoil the experimental contrast. These elements would be acquired outside of the study by the control group in an effort to replace the denied treatment (Dooley, 2001). To control for such contamination, minimized contact between the treatment and comparison-control participants was implemented by separating the participants' classroom locations at the study's site. Ignorance as to the names of group participants was also maintained to prevent diffusion of shared study experiences.

In addition to these steps to maintain experimental construct validity, this researcher prearranged for a trained, nonbiased scale administrator—a local board of education consultant—to deliver, administer, and collect the pretest posttest measurement scales. Furthermore, the art teacher-researcher was not present during the pretest-posttest measurement and remained ignorant as to which participants volunteered to take the measurement and which participants did not volunteer. This researcher also avoided reviewing the participants' responses to the pretest in order to prevent bias from occurring. Instructions for the scale as well as all words and behaviors of the scale administrator strictly followed a script that was used with all participants (Dooley, 2001) (see Appendix A). This standardization was monitored by a research assistant/neutral observer, a middle school sixth-grade special education teacher, to assure its success. Both the administrator and research assistant did not have previous contact with the seventh- and eighth-grade students at the middle school test site and agreed to maintain confidentiality of participants (see Appendixes B and C). Additionally, all consent and assent forms were returned directly to the scale administrator.

The findings from this study and how they generalize to other populations, times, and settings determined external validity. The extent to which the results applied beyond the subjects, setting, and particular events of this study established the level of external validity. To support the generalization of this study, this researcher needed, according to Dooley (2001) to replicate the study in different populations, times, periods, and settings. Attempts to increase external validity without a full-scale replication were made by this researcher by including a variety of participants in the study (Dooley, 2001). Because this

true experiment involved treatment that occurred at a specific time in the school year, the replication created by long-term studies could not be accommodated.

Additionally, discrepancies in data observations between the groups were not extreme or unusually far from other observations and as a result required no adjustments in an effort to maintain validity and trustworthiness of the data (Dooley, 2001; Gravetter & Wallnau, 2005; McClure, 2003).

Instrumentation

This study's instrument, the Patterns of Adaptive Learning Scales (PALS), (Midgley et al, 2000), was employed as a general measure of student self-efficacy (see Appendix D). The 72 items composing this measurement scale were designed to measure student attitudes and beliefs in their personal capabilities in three contexts: (a) personal achievement goal orientations; (b) perception of classroom goal structures; and (c) academic-related perceptions, beliefs, and strategies. These three contexts were subdivided into 14 scales, each with items assessing dimensions of self-efficacy. Context 1, personal achievement goal orientations consisted of three subscales: mastery goal orientation, performance-approach goal orientation, and performance-avoid goal orientation. In sequence, these scales indicated that the students' purposes or goals were to develop their competence, to demonstrate their competence, and to avoid the demonstration of incompetence while in an achievement setting. Context 2, perception of classroom goal structures included three subscales: classroom mastery goal structure, classroom performance-approach goal structure, and classroom performance-avoid goal structure. In order, these scales reflected that the students' perceptions of engaging in

work in the classroom were to develop competence, to demonstrate competence, and to avoid demonstrating incompetence. Context 3, academic-related perceptions, beliefs, and strategies comprised eight subscales: academic efficacy, academic press, academic self-handicapping strategies, avoiding novelty, cheating behavior, disruptive behavior, self-presentation of low achievement, and skepticism about the relevance of school for future success. The academic efficacy scale referred to students' perceptions of their competence to do their class work. The academic press scale referred to students perceptions that their teachers pressed them for understanding. The academic self-handicapping scale referred to strategies that were used by students so that if subsequent performances were low, those circumstances, rather than lack of ability, were seen as the cause. The avoiding novelty scale referred to students' preference for avoiding unfamiliar or new work. The cheating behavior scale referred to the students' use of cheating in class while the disruptive behavior scale indicated students' attitudes towards engaging in behaviors that were disruptive. The self-presentation of low achievement scale pointed toward students' preferences to keep peers from knowing how well they are achieving in school. The final scale for Context 3, the skepticism about the relevance of school for future success scale, referred to students' beliefs that doing well in school would not help them achieve success in the future. Elements of the scales' factors, their descriptions, their number of items, and the reliability coefficients were described in Appendix E.

The PALS was used to examine the independent variable, art education and its influence on the enhancement of self-efficacy, the dependent variable of the study, by comparing data gathered directly from the art student treatment group and the non-art

student comparison-control group in a pretest posttest process. The data compared descriptions of feelings, perceptions, and beliefs between students who had experienced art education and students who had not.

The items on the student scales were measured using a 5-point Likert response format scoring procedure where 1 = not at all true, 3 = somewhat true, and 5 = very true. This system of scoring was used to transform the information captured from the participants into units of interpretation for each of the 14 scales, all measuring or trying to measure the same self-efficacy phenomenon. It was noted at this point that a common concern among researchers was the legitimacy of using Likert scale data with parametric statistics that required interval data, such as the ANOVA. Carifio and Perla (2007) stated in their report,

> Misunderstandings, along with a lack of knowledge of a number of key empirical facts, leads to perhaps the most widely known erroneous or mythical claim about 'Likert scales' which is that Likert scales are ordinal scales and thus only non-parametric statistical tests may and should be used with them. (p. 110)

Many studies reported that while technically the Likert scale item was ordered, using it in parametric tests was valid under certain conditions. For example, Carifio and Perla (2007); Glass, Peckham and Sanders (1972); and Lubke and Muthen (2004) found that it was possible to find true parameter values in analysis of variance using Likert scale data if the item had a 5- to 7-point response format, the underlying concept was continuous, and the intervals between points were approximately equal. The specifics of the measurement scale items for this study incorporated these criteria.

Additionally, three or more items on the instrument were always used for each scale to assess a construct and establish reliability. In this way, error was reduced, and it became evident if participants answered the various items on a scale in a consistent way. Each participant used a Number 2 pencil to mark the appropriate responses on an answer sheet, which was scored by a Scantron machine at the investigator's office. Once the treatment and control groups' pretest-posttest measurement scales were completed and scored, the response sheets were housed in a file cabinet in the investigator's home.

The PALS instrument was used and referenced in many other self-efficacy studies, some of which were validated and promoted by self-efficacy theorist Bandura (Schunk, & Meece, 2006). The instrument was used with both elementary and secondary school classrooms. The measures usually were worded in general (non domain-specific) format as used in this study; however, to meet the needs of other studies, the items were constructed using terms that referred to a specific academic domain. In most cases, internal consistency was higher for the domain-specific measures (Anderman et al., 2003). Carol Midgley and other designers of the PALS from the School of Education, University of Michigan provided evidence of this instrument's construct validity by extensively examining correlations between scores on the PALS instrument and scores on instruments measuring other closely related constructs (Midgley et al, 1998).

The personal goal orientation scales were among the "most reliable and valid measure of these constructs, for use with samples of adolescents" (Anderman & Midgley, 2003, p.527). This was reflected in several studies, in both cross-sectional and longitudinal research. The scales confirmed good concurrent, discriminate, and construct

validity as well as established as stable and internally consistent over time (Anderman et al., 2003). According to reports published on PALS research (Ames, 1992; Anderman & Midgley, 2003; Anderman et al., 2003; Harackierwicz, 2005; Midgley et al., 1998), the PALS measures were among the best existing motivation measures.

> They have been demonstrated to be both valid and reliable in samples of various ages, ethnicities, and cultures. They are strongly related to a variety of educational and psychological variables, and they are sensitive to developmental changes in students' goals and beliefs. (Anderman, et al., 2003, p. 18)

The 14 scales composing this instrument were determined to be reliable, valid, and served as a useful tool for collecting important information revealing the relationship between art education and the enhancement of middle school students' self-efficacy.

Establishment of the PALS' scales and subscales validity and reliability was documented in several studies with respect to the following statistical information. In one study conducted by the authors of the PALS (Anderman et al., 2003), the items assessing personal mastery goal orientation, performance-approach goal orientation, and performance-avoidance goal orientation were subjected to confirmatory factory analysis using LISREL 8. Maximum likelihood estimation was used. Data were assessed using covariance matrices and listwise deletion of data. In addition, multiple fit indices were used to test the hypothesis that the measures were distinct albeit correlated. It was reported that "the model displayed excellent fit [χ^2 (116, N = 647) = 298.55, p<.001; GFI = .95; TLI = .95; CFI = .96; RMSEA = .049 with P (0.05) = .55]" (p.14). Additionally, the alpha reliabilities for each subscale as reported in the PALS manual (Midgely et al.

2000) and noted in Appendix E of this study, ranged from 0.71 – 1.01, which showed acceptable to excellent internal consistency.

In an additional validation study that sought to establish the validity of PALS using an Australian sample of senior school students, the data for each of the PALS subscales was subjected to a Confirmatory Factor Analysis using LISREL 8.3 (Smith, Sinclair & Chapman, 1999). All estimates were based on the Maximum Likelihood and polychoric correlation matrices which indicated an adequate fit to the data: [χ^2 (435, N = 408) = 6654.88, p<.01; RMSEA = 0.08; GFI = 0.82; NNFI = 0.82]" (Smith, et al., 1999, p.2-3).

To assess the robustness of the three-factor model of the PALS, a third study conducted a confirmatory factor analysis using LISREL 8.5. All screening procedures used to assess conformity to underlying assumptions produced satisfactory results, (p < 0.001; RMSEA = 0.07; GFI = 0.91; NNFI = 0.88) indicating a moderate to good fit to the data and providing support for the applicability of the PALS with EAP language learners from different cultural backgrounds (Woodrow & Chapman, 2002).

A reliability generalization study was also completed on the PALS (Ross, Blackburn & Forbes, 2005) to assess the predication of the different orientation scales and the adaptation of the items to meet research needs. "The reliability generalization was a meta-analytical technique designed to assess reliability coefficient variability across studies and identify sources of variability" (p. 453). With this in mind, the researchers of this study examined 30 studies in which the PALS scales were used and sample specific reliabilities were reported. Study sample sizes ranged from 102 to 703 (M = 351.41, SD =

159.80) and yielded 103 internal consistency reliability coefficients. "Confirmatory factor analytic procedures were used to assess factorial validity. A three-factor was supported, χ^2 (116, N = 647) = 298.55, comparative fit index = 0.96, goodness-of-fit index = 0.95, Tucker Lewis index = 0.95, root Mean Square error of approximation = 0.049" (p. 456.) Results of the analysis of this study as well as the aforementioned studies indicated that the PALS yielded reliable scores on average. The results suggested that researchers could draw meaningful and useful inferences from scores on this instrument. The items reported to be legitimate forms of measurement for the content, predictability of criterion, and hypothetical concepts of self-efficacy.

Data Analysis

To examine the effects of art education on the self-efficacy of middle school students and to test the data generated by the measurement scale the PALS, a one-way ANOVA was employed. The one-way ANOVA hypothesis-testing procedures met the numerous conditions of this study. First, the one-way ANOVA, a one-way statistical procedure using only one independent variable, was effective for this study as it only had one independent variable, art education. Secondly, the processes of the one-way ANOVA design were used to test the equality of two or more means at one time by using variances (Plonsky, 2009). The intention of the data analysis of this study was to evaluate mean differences between the two groups in this study, the treatment group—art education students and the comparison-control group, the non-art students. A ratio of variance was produced which was a comparison of the variance amongst the different groups to the variance amongst all the individuals within those groups (Gravetter & Wallnau, 2005).

Thirdly, the intentions of this study embraced the assumptions of the one-way ANOVA. These assumptions required that the participants of the study would be randomly assigned to groups and the sample sizes between the groups would be close to equal. Also, the design required that the distribution of means by groups were normal with equal variances. Furthermore, the constraints of the ANOVA required that the hypotheses of the study would test for the comparison of independent groups: HO = the means of the groups would be equal, implying that for this study there would be no relationship between art education and student self-efficacy; and HI = the means of the groups would not be equal, implying that for this study there would be a relationship between art education and student self-efficacy (Plonsky, 2009). The benefits of complying with these assumptions indicated that the results of the ANOVA would then be considered reliable. These data analysis assumptions of the ANOVA were explicit design components of this study.

Other tests of significance failed to satisfy the conditions of this study. The outcome ratio of variance of the one-way ANOVA produced an *F* statistic, which provided the same basic information as the *t* statistic in the repeated *t* test procedures. However, there were advantages to using the one-way ANOVA in this study over *t* tests. The main advantage encompassed decreasing the amount of computational labor when using two or more groups which consequently, with fewer test performances, thus lowering the Type I Error and improving the reliability of the test. Moreover, this study was interested in one thing—did the art education treatment enhance student self-

efficacy? Thus it was efficient to employ one test, the one-way ANOVA, which would help answer this question (Plonsky, 2009).

The specifications of other statistical procedures also lacked qualities needed for testing the hypotheses of this study. Because this study utilized only one independent and one dependent variable, the Two-Factor ANOVA, and Multivariate MANOVA were not suitable. The Repeated Measures tests compared several different treatment conditions while this study used only one treatment condition. The experiment of this study was carefully controlled, selecting a specific setting, time constraints, and randomly selected treatment and comparison-control groups. The non-conformity qualities of the Correlation statistical techniques—those of observing relationships as they exist naturally in the environment— were not conducive to meeting the managed requirements of this study (Dooley, 2001). The one-way ANOVA, using data from two separate samples to test for mean differences most effectively satisfied the requirements of this study.

The goal of the researcher was to employ the one-way ANOVA to determine whether the groups' mean differences obtained from pretest-posttest data were significant and whether the differences were due to the treatment effect, chance, or sampling error. The statistical findings were analyzed using the analytical computer software Statistical Package for the Social Sciences (SPSS), which produced two types of statistics, descriptive and inferential. The information concerning different aspects of the groups' scores was summarized in table form that included the most important and condensed descriptive and inferential findings. A descriptive and inferential table was produced for each group's pretest and posttest results for each of the 14 scales, totaling 58 tables.

The descriptive statistical tables described pretest-posttest scores for both the treatment group and comparison-control group. This information included the number of participants along with their mean and standard deviation scores. The inferential statistical tables described pretest-posttest scores for both the treatment group and comparison-control group. Three sources of variability were listed: "'Between Groups' (variability due to the treatment effect: differences Between Groups as a result of attachment style), 'Within Groups' (variability reflecting random error), and 'Total'" (Kirkpatrick & Feeney, 2005, p. 45). Each table additionally reported the degrees of freedom, Sum of squares, and Mean Squares. The *F* ratio, which calculated the Mean Square between divided by the Mean Square within, was listed next in the table. The associated *p*-value or significance (Sig.) was listed in the last column of the table (Kirkpatrick & Feeney, 2005). The results of the inferential data determined if the null hypothesis of the study, there is no relationship between art education and student self-efficacy, was rejected or was failed to be rejected and concluded if art education did or did not have a significant effect on enhancing self-efficacy in middle school students.

A trained scale administrator collected the data from both groups during one nine-week session. The treatment group data was collected during their art class treatment time and the comparison-control group data was collected during the participants' biweekly, school-wide released time study sessions, and known to the participants as PAWS. The participants marked their answer choices on Scantron answer cards which were scored by a Scantron machine at the investigator's office. The participants' answers were sorted by categories, one for each of the 14 scales. All collected data were then entered into the

statistical analysis program using the one-way ANOVA to obtain the descriptive and inferential statistical summaries.

Specific procedures for dealing with discrepancies in the study's data observations were not required as the sample groups' maximum and minimum mean and standard deviation scores were not substantially different; therefore, no individual values needed to be considered outliers. Without the outlier, it is possible to infer that for this study there was no relationship between the two variables: art education and student self-efficacy. Further explanation of these observations and presentation of value effect sizes, eta squared— the measure of strength of relationship, (Dooley, 2001; Gravetter & Wallnau, 2005; McClure, 2003) are presented in chapter 4.

Participant's Rights

This researcher weighed the value and importance of the participants in this study to the uppermost degree, realizing that participation in research involves risk (Busher, 2002). Therefore, all research practices in this study were directed toward the protection of the participant and employed the highest ethical standards. Voluntary consent of the participants in this study was essential. Each participant, according to the ethical principles set by the Nuremberg Code and reported by Dooley (2001), was given the opportunity to "exercise free power of choice, without the intervention of any element of force, fraud, deceit, duress, over reaching, or other ulterior form of constraint or coercion" (p. 20). In doing so, language that was understandable to the participant was used to inform the participants that they were free to participate or decline to participate or to withdraw from the research without any consequences to their grade, position in

their classrooms, or standing with their teachers. Special care was given to protect the prospective participants from adverse consequences of declining or withdrawing from participation. For the treatment group (art students) the pretest-posttest measurement scales were administered during scheduled art class time. Students not participating in the measurement were given the choice of equitable alternative activities (Dooley, 2001). These activities included silent reading in the students' personally selected Accelerated Reader (AR) book or classroom word-search puzzles.

Both treatment and comparison-control groups were informed of the nature of the research including its title, purpose, procedures to be followed while taking the measurement scale, benefits to the participant and society, participant's confidentiality and right to privacy, where the completed surveys were stored, and who had access to the measurement scales (Fink, 2006). This information was conveyed in an organized, timely fashion, allowing time for consideration and opportunities for questioning by the participants, which granted them the ability to make an informed choice of whether or not to participate (Belmont Report, 1979). The researcher offered no extra credit or other inducements to research participants. The researcher, scale administrator and research administrator conducted the research "competently and with due concern for the dignity and welfare of the participants and gatekeepers" (Dooley, 2001, p. 22). Consent (see Appendix F) and assent (see Appendix G) forms gaining permission for the students' participation in the study were mailed home to be signed and returned in a stamp addressed envelop to the scale administrator. The list of participants remained unknown to the art teacher-researcher. While the survey was being conducted, the art teacher-

researcher did not interfere with the participants or the setting from which data were collected. Only the scale administrator and research assistant/neutral observer were present during the data collection processes and during these times conducted themselves in the professional manner that was accepted by the true experimental research design. Educational researchers should strive to protect their research populations and to maintain the integrity of the research, the research community, and all those with whom the researcher has professional relations.

> We do this by continually evaluating our research for ethical and scientific adequacy and by conducting our internal and external relations according to the highest ethical standards. As educational researchers we are involved not only in research but in education. It is, therefore, essential that we continually reflect on our research to be sure that it is not only sound scientifically but that it makes a positive contribution to the educational enterprise. (Ethical Standards of the American Educational Research Association, 2000, p. 3)

Methodological procedures used to examine the research question of this study, "What is the relationship between art education and self-efficacy in middle school students?" were presented in this chapter. A review of the experimental research design employed in this study was followed by a description of the middle school setting and sample population. The treatment, instrumentation, and data collection processes were also reviewed. Finally, the measures utilized to assure protection of the participants were reported in detail. The following chapter reports the results of the methodological processes outlined and discussed above.

CHAPTER 4:

PRESENTATION AND ANALYSIS OF DATA

Introduction

As stated in chapter 1, this study examined in detail the problems and challenges of art education's limited and complex beginnings (Stankiewicz, 1997; Soucy, 1990), constant and difficult reforms (Clark, 1996; Eisner, 1992), and present-day struggles for survival and inclusion in our schools' curriculum (Chapman, 2005; USDE, 2003). This chapter was organized in terms of the specific research question and hypothesis related in chapter 1. It first reported the implications of the study's conceptual framework, Bandura's theories on self-efficacy as embodied in the constructivist theoretical paradigm, and its relation to the independent variable, art education and dependent variable, self-efficacy. Next, supporting the examination of the relationship between art education and self-efficacy, a report of the data collection processes followed by a presentation of descriptive and inferential data analysis tables and figures was detailed. Finally, an interpretation of the findings along with observed consistencies and inconsistencies with their resulting effects on the research question and hypothesis were addressed.

This quantitative true experimental study tested the relationship between art education and self-efficacy in middle school students by implementing the structures of the constructivist theory and Bandura's theories. The constructivist theory advocated that learning was an active process in which learners must be provided with opportunities to interact with sensory data and construct their own meanings (Glasersfeld, 1996; Milbrandt & Anderson, 2005; Sousa, 2001; Vanderstaeten & Biesta, 1998; Vygotski,

1996; Walker, 2002). Within the premises of this conceptual framework, active learning as evidenced in art education curriculums could possibly span into larger realities of experience and accomplishment, promoting students' beliefs in their capacities to succeed. This sense of self-efficacy as defined by Bandura (1997) in his self-efficacy theories provided the foundation for motivation, well-being, and personal accomplishments in all areas of life. He hypothesized that individuals obtain information about their self-efficacy in four ways. First, students' own performances affected their concept of self-efficacy: students who successfully paint a picture felt more confident when asked to paint another picture or perform a similar task. Secondly, students' vicarious experiences affected their self-efficacy: when students watched a peer successfully paint a picture, they may feel more confident when asked to paint a picture. Thirdly, students' self-efficacy beliefs were greatly affected by another's verbal persuasion: a teacher may persuade students that they can successfully paint a picture and therefore they attempt the painting experience with more confidence. The fourth factor was revealed as emotional arousal: As an example, students' confidences in approaching a painting exercise inversely depended on their levels of anxiety induced by that assignment. The art education environment generated opportunities for the induction of these self-efficacy building experiences. Researching Bandura's elements of self-efficacy led this researcher to question whether students' experiences in the art classroom help enhance their self-efficacy and if so, could these increased beliefs in personal capacities possibly extend into other curriculum areas.

To test this hypothesis a quantitative true experimental approach using a pretest-posttest control-group was employed. Sixty seventh- and eighth-grade middle school art students and 60 seventh- and eighth-grade non-art students from central Georgia served as the participants. A 72-item pretest-posttest measure, the PALS (Midgley et al, 2000) was administered during one 9-week period to a randomly selected treatment group receiving art education and a randomly selected comparison-control group who had never taken middle school art.

Research Instrument

This study's instrument, the PALS (Midgley et al, 2000), was employed as a general measure of student self-efficacy. Importantly, this research instrument was also used and referenced in many other self-efficacy studies, some of which were validated and promoted by Bandura (Schunk, & Meece, 2006). Midgley et al (1998) provided evidence of this instrument's construct validity by examining correlations between scores on their instrument and scores on instruments measuring other closely related constructs. All of the scales used in this report were proven to be internally consistent and valid. The instrument measured self-efficacy in three contexts: (a) personal achievement goal orientations; (b) perception of classroom goal structures; and (c) academic-related perceptions, beliefs, and strategies. These three contexts were sub-divided into a total of 14 scales, each with items assessing dimensions of self-efficacy (see Appendix E). The items on the student scales were measured using a 5-point Likert response format scoring procedure where 1 = not at all true, 3 = somewhat true, and 5 = very true. This system of scoring was used to transform the information captured from the participants into units of

interpretation for each of the 14 scales all measuring or trying to measure the same self-efficacy phenomenon. Three or more items were always used to assess a construct. In this way, further chances of error were reduced, and it became evident if participants answered the various items on a scale in a consistent manner. Additionally, because the participants were composed of students who learn different subjects in different classrooms, items were phrased in general terms such as class or school work rather than domain-specific measurements.

Data Analysis

In this true experimental study, the researcher investigated whether or not the participation in an art education class would enhance self-efficacy in middle school students. It was hypothesized that the hands-on art performances, vicarious experiences, positive verbal persuasion, and emotional arousal (Bandura, 1997)offered in the middle school's 9-weeks (45 hours) art education curriculum would generate self-efficacy building experiences and students would then demonstrate more occurrences of belief in their own capacities to succeed.

The PALS instrument was intended to develop a profile of the treatment group before the application of art education and after the application of art education. Likewise, it was also intended to develop a profile of the comparison-control group with no art education experience at the beginning of the 9 weeks and at the end of 9 weeks. The mean differences between the two treatment groups were then evaluated to test the hypothesis. This was accomplished by comparing the results of the non-art students' pretests (comparison-control group) to the art students' pretests (treatment group) and

comparing the results of the non-art students' posttests to art students' posttests (Y. S. Hsu, personal communication, August 10 & 15; October 20 & 28, 2008). Accordingly, the data for these pretest/posttest comparisons were reported for all 14 scales. The resulting descriptive and inferential statistics are detailed in the following sections.

Pretest/ Posttest Descriptive and Inferential Statistics

The pretest/posttest descriptive and inferential statistics for the treatment and comparison-control groups were reported in the following 58 tables. The descriptive statistics tables included the treatment means, standard deviations, standard errors, and 95% confidence intervals for mean scores for each of the 14 scales. The inferential one-way ANOVA tables reported the degrees of freedom, Sum of squares, and Mean squares. The *F* ratio, calculated by dividing the Mean square between groups by the Mean square within groups, is listed next in the table followed by the associated *p*-value ("Sig."). To supplement the hypothesis test, a measure of effect size, eta squared (η^2), was calculated to provide information about the actual size of the mean differences. "For the analysis of variance the common techniques for measuring effect size is to compute the percentage of variance that is accounted for by the treatment effect" (Gravetter, 2005, p. 167). The one-way ANOVA calculated the variables (the 14 measure scales and the treatment and comparison-control groups) to test if the treatment, art education was significant or nonsignificant for enhancing middle school students' self-efficacy.

The findings for all 14 scales were presented in the following order: (a) pretest descriptive statistics, (b) pretest inferential statistics, (c) posttest descriptive statistics, and (d) posttest inferential statistics. Each of these pretest-posttest sections presented the

results for the three contextual categories of the measurement along with their associated subscales as follows: Context 1, personal achievement goal orientations with three subscales: mastery goal orientation, performance-approach goal orientation, and performance-avoid goal orientation; Context 2, perception of classroom goal structures with three subscales: classroom mastery goal structure, classroom performance-approach goal structure, and classroom performance-avoid goal structure; and Context 3, academic-related perceptions, beliefs, and strategies with 8 subscales: academic efficacy, academic press, academic self-handicapping strategies, avoiding novelty, cheating behavior, disruptive behavior, self-presentation of low achievement, and skepticism about the relevance of school for future success.

Pretest Results: Descriptive Statistics for Treatment and Comparison-Control Groups

Context 1, personal achievement goal orientation/ subscale 1, mastery goal orientation. When students were oriented to mastery goals, their purpose or goal in an achievement setting was to develop their competence. They looked to extend their mastery and understanding. Attention was focused on the task (Midgley et al., 2000). Perceptions of a mastery orientation in school related to more positive attitudes about school, lower negative attitudes about school and higher self efficacy—confidence that one could learn and understand if he or she tried (Midgley & Maehr, 1998). Items used to assess the mastery goal dimension included:

9. It's important to me that I learn a lot of new concepts this year.
25. One of my goals in my classes is to learn as much as I can.
29. One of my goals is to master a lot of new skills this year.

38. It's important to me that I thoroughly understand my class work.

49. It's important to me that I improve my skills this year.

Non-Art Students' Pretests/Art Students' Pretests Descriptive Statistics for the Mastery Goal Orientation scale were reported in Table 1. The mean score for the non-art students' pretests was 3.92 and for the art students' pretests 3.95. These scores illustrated that both groups of participants at the beginning of the study indicated it to be somewhat true for them to want learn, understand, and master new concepts and skills in their classes. Midgley et al. (2000) revealed that the Mastery Goal Orientation scale was intended to assess the extent to which students engaged in academic tasks in order to develop their competence. Both groups reported that they were somewhat focused on their classroom academic tasks in an attempt to master the task at hand**.**

The standard deviation mean score for non-art students' pretests was 1.24 and art students' pretests 1.23, indicating that the groups tended to be balanced and consistent in their responses and lay within the confidence interval. The pretest descriptive statistics for this scale indicated no significant difference between non-art students' and art students' pretests.

Table 1

Pretest Descriptive Statistics for Mastery Goal Orientation

	N	Mean	Std. deviation	Std. error	95% Confidence interval for mean		Minimum	Maximum
					Lower bound	Upper bound		
Non-art	300	3.9200	1.23505	0.07131	3.7797	4.0603	1.00	5.00
Art	300	3.9533	1.22863	0.07093	3.8137	4.0929	1.00	5.00
Total	600	3.9367	1.23093	0.05025	3.8380	4.0354	1.00	5.00

Context 1, personal achievement goal orientation/ subscale 2, performance-approach goal orientation. When students were oriented to performance-approach goals, their purpose or goal in an achievement setting was to demonstrate their competence. Attention was focused on the self. Items used to assess the mastery goal dimension included:

8. It's important to me that other students in my classes think I am good at my class work.
26. One of my goals is to show others that I'm good at my class work.
41. One of my goals is to show others that class work is easy for me.
45. One of my goals is to look smart in comparison to the other students in my classes.
48. It's important to me that I look smart compared to others in my classes.

Non-Art Students' Pretest/Art Students' Pretests Descriptive Statistics for the Performance-Approach Goal Orientation scale were reported in Table 2. The mean score

for the non-art students' pretests was 2.86 and for the art students' pretests 2.80. These scores illustrated that both groups of participants at the beginning of the study indicated it to be slightly true for them to show other students that they are good at their class work and in comparison to the other students in their classes they look smarter. "Students who endorse this goal orientation are interested in demonstrating their competence. Such students are highly focused on the self" (Anderman et al., 2003, p.12). The standard deviation mean score for non-art students' pretest was 1.32 and art students' pretest 1.39, indicating that the groups tended to be balanced and consistent in their responses and reflected that the mean score was a good representation of the data collected. Results for the descriptive statistics for this scale indicated no significant difference between non-art students' pretests and art students' pretests.

Table 2

Pretest Descriptive Statistics for Performance-Approach Goal Orientation

					95% Confidence interval for mean			
	N	Mean	Std. deviation	Std. error	Lower bound	Upper bound	Minimum	Maximum
Non-art	295	2.8610	1.32133	0.07693	2.7096	3.0124	1.00	5.00
Art	297	2.8047	1.38851	0.08057	2.6462	2.9633	1.00	5.00
Total	592	2.8328	1.35460	0.05567	2.7234	2.9421	1.00	5.00

Context 1, personal achievement goal orientation/ subscale 3, performance-avoid goal orientation. When students were oriented to performance-avoid goals, their purpose or goal in an achievement setting was to avoid the demonstration of incompetence.

Attention was focused on the self. Items used to assess the mastery goal dimension included:

3. It's important to me that I don't look stupid in my classes.
33. One of my goals is to keep others from thinking I'm not smart in my classes.
51. It's important to me that my teachers don't think that I know less than others in my classes.
55. One of my goals in my classes is to avoid looking like I have trouble doing the work.

Non-Art Students' Pretests/Art Students' Pretests Descriptive Statistics for the Performance-Avoid Goal Orientation scale were reported in Table 3. The mean score for the non-art students' pretests was 2.75 and for the art students' pretests 2.83. These scores illustrated that both groups of participants at the beginning of the study indicated it to be slightly true for them to avoid the demonstration of incompetence by avoiding looking stupid or looking like they were having trouble doing the class work. Performance-avoidance students were focused on the self and desired to demonstrate that they were competent while doing class work (Anderman et al, 2003). The standard deviation mean score for non-art students' pretests was 1.54 and art students' pretests 1.58, once again indicating that both groups were balanced and consistent in their responses. The results for the descriptive statistics for this scale indicated no significant difference between non-art students' and art students' pretests.

Table 3

Pretest Descriptive Statistics for Performance-Avoid Goal Orientation

	N	Mean	Std. deviation	Std. error	95% Confidence interval for mean		Minimum	Maximum
					Lower bound	Upper bound		
Non-art	240	2.7500	1.53754	0.09925	2.5545	2.9455	1.00	5.00
Art	235	2.8255	1.58228	0.10322	2.6222	3.0289	1.00	5.00
Total	475	2.7874	1.55865	0.07152	2.6468	2.9279	1.00	5.00

Context 1: pretest descriptive statistics summary. The results of the pretest descriptive statistics and the 95% of confidence intervals of the mean differences for all three subscales from Context 1, Personal Achievement Goal Orientation revealed no significant difference between the treatment group and comparison-control group. Only minimal differences were found between the groups for their means, standard deviations, and total scores for all subscales, revealing that for this context both groups were consistent and balanced in their responses and lay within the confidence interval at the beginning of the treatment.

Context 2, perception of classroom goal structures/ subscale 1, classroom mastery goal structure. This scale referred to students' perceptions that the purpose of engaging in academic work in the classroom was to develop competence. "When students perceive an emphasis on mastery in their classes, they have greater efficacy to learn, have higher self-regulation for their work and are less likely to avoid seeking help when they

need it" (Midgley & Maehr, 1998, p.8). Items used to assess the classroom mastery goal dimension included:

59. In my classes, trying hard is very important.

61. In my classes, how much you improve is really important.

63. In my classes, really understanding the materials is the main goal.

66. In my classes, it's important to understand the work, not just memorize it.

68. In my classes, learning new ideas and concepts is very important.

70. In my classes, it's OK to make mistakes as long as you are learning.

Non-Art Students' Pretests/Art Students' Pretests Descriptive Statistics for the Classroom Mastery Goal Structure scale were reported in Table 4. The mean score for the non-art students' pretests was 3.71 and for the art students' pretests 3.76. These scores illustrated that both groups of participants at the beginning of the study indicated it to be somewhat true for them to engage in academic work in the classroom in order to develop competence.

The standard deviation mean score for non-art students' pretests was 1.36 and art students' pretests 1.31, indicating that both groups tended to be balanced and consistent in their responses and the mean score was representative of the data. The results for the descriptive statistics for this scale indicated no significant difference between non-art and art students' pretests.

Table 4

Pretest Descriptive Statistics for Classroom Mastery Goal Structure

	N	Mean	Std. deviation	Std. error	95% Confidence interval for mean		Minimum	Maximum
					Lower bound	Upper bound		
Non-art	353	3.7082	1.35779	0.07227	3.5661	3.8503	1.00	5.00
Art	360	3.7611	1.31358	0.06923	3.6250	3.8973	1.00	5.00
Total	713	3.7349	1.33498	0.05000	3.6368	3.8331	1.00	5.00

Context 2, perception of classroom goal structures/ subscale 2, classroom performance-approach goal structure. This scale referred to students' perceptions that the purpose of engaging in academic work in the classroom was to demonstrate competence. Items used to assess the classroom performance-approach goal structure dimension included:

62. In my classes, getting good grades is the main goal.

64. In my classes, getting right answers is very important.

71. In my classes, it's important to get high scores on tests.

Non-Art Students' Pretests/Art Students' Pretests Descriptive Statistics for the Classroom Performance-Approach Goal Structure scale were reported in Table 5. The mean score for the non-art students' pretests was 3.78 and for the art students' pretests 3.76. These scores illustrated that both groups of participants at the beginning of the study indicated it to be somewhat true for them to engage in academic work in the classroom in order to demonstrate competence.

The standard deviation mean score for non-art students' pretests was 1.39 and art students' pretests 1.37 and reflected that both groups tended to be consistent and balanced in their responses. The results for the descriptive statistics for this scale indicated no significant difference between non-art students' and art students' pretests.

Table 5

Pretest Descriptive Statistics for Classroom Performance-Approach Goal Structure

					95% Confidence interval for mean			
	N	Mean	Std. deviation	Std. error	Lower bound	Upper bound	Minimum	Maximum
Non-art	178	3.7753	1.39209	0.10434	3.5694	3.9812	1.00	5.00
Art	177	3.7627	1.36522	0.10262	3.5602	3.9652	1.00	5.00
Total	355	3.7690	1.37683	0.07307	3.6253	3.9127	1.00	5.00

Context 2, perception of classroom goal structures/ subscale 3, classroom performance-avoid goal structure. This scale referred to students' perceptions that the purpose of engaging in academic work in the classroom was to avoid demonstrating incompetence. Items used to assess the classroom performance-avoid goal structure dimension included:

60. In my classes, showing others that I am not bad at class work is really important.
65. In my classes, it's important that you don't make mistakes in front of everyone.
67. In my classes, it's important not to do worse than other students.

69. In my classes, it's very important not to look dumb.

72. In my classes, one of the main goals is to avoid looking like you can't do the work.

Non-Art Students' Pretests/Art Students' Pretests Descriptive Statistics for the Classroom Performance-Avoid Goal Structure scale were reported in Table 6. The mean score for the non-art students' pretests was 3.12 and for the art students' pretests 2.81. These scores illustrated that both groups of participants at the beginning of the study indicated it to be slightly true to somewhat true for them to engage in academic work in the classroom in order to avoid demonstrating incompetence.

The standard deviation mean score for non-art students' pretests was 1.36 and art students' pretests 1.54 indicating that both groups were consistent and balanced in their responses. The results for the descriptive statistics for this scale indicated no significant difference between non-art students' pretests and art students' pretests.

Table 6

Pretest Descriptive Statistics for Classroom Performance-Approach Goal Structure

					95% Confidence interval for mean			
	N	Mean	Std. deviation	Std. error	Lower bound	Upper bound	Minimum	Maximum
Non-art	295	3.1220	1.36228	0.07931	2.9659	3.2781	1.00	5.00
Art	295	2.8136	1.54165	0.08976	2.6369	2.9902	1.00	5.00
Total	590	2.9678	1.46167	0.06018	2.8496	3.0860	1.00	5.00

Context 2, pretest descriptive statistics summary. The results of the pretest descriptive statistics and the 95% of confidence intervals of the mean differences for all

three subscales from Context 2: Perception of Classroom Goal Structure revealed no significant difference between the treatment group and comparison-control group. Only minimal differences were found between the groups for their means, standard deviations, and total scores for all subscales, revealing that for this context both groups were consistent and balanced in their responses and lay within the confidence interval at the beginning of the treatment.

Context 3, academic-*related perceptions, beliefs, and strategies/subscale 1, academic efficacy.* This scale referred to students' perceptions of their competence to do their class work. Items used to assess the academic efficacy dimension included:

1. I'm certain I can master the skills taught in my classes this year.
11. I'm certain I can figure out how to do the most difficult class work.
52. I can do almost all the work in my classes if I don't give up.
56. Even if the work is hard, I can learn it.
58. I can do even the hardest work in my classes if I try.

Non-Art Students' Pretests/Art Students' Pretests Descriptive Statistics for the Academic Efficacy scale were reported in Table 7. The mean scores for both non-art students' and art students' pretests were 3.70. These scores illustrated that both groups of participants at the beginning of the study indicated it to be to somewhat true for them to believe that they were competent to do their class work. The standard deviation mean score for non-art students' pretests was 1.34 and art students' pretests 1.39 indicating that both groups tended to be balanced and consistent in the answers. The results for the

descriptive statistics for this scale indicated no significant difference between non-art students' and art students' pretests.

Table 7

Pretest Descriptive Statistics for Academic Efficacy

					95% Confidence interval for mean			
	N	Mean	Std. deviation	Std. error	Lower bound	Upper bound	Minimum	Maximum
Non-art	298	3.6980	1.33689	0.07744	3.5456	3.8504	1.00	5.00
Art	299	3.6990	1.38655	0.08019	3.5412	3.8568	1.00	5.00
Total	597	3.6985	1.36084	0.05570	3.5891	3.8079	1.00	5.00

Context 3, academic-related perceptions, beliefs, and strategies/subscale 2, academic press. This scale referred to students' perceptions that their teachers press them for understanding. Items used to assess the academic press dimension included:

6. When I've figured out how to do a problem, my teachers give me more challenging problems to think about.
10. My teacher presses me to do thoughtful work.
15. My teacher asks me to explain how I get my answers.
17. When I'm working out a problem, my teachers tell me to keep thinking until I really understand.
19. My teacher doesn't let me do just easy work, but makes me think.
53. My teacher makes sure that the work I do really makes me think.
57. My teacher accepts nothing less than my full effort.

Non-Art Students' Pretests/Art Students' Pretests Descriptive Statistics for the Academic Press scale were reported in Table 8. The mean score for the non-art students' pretests was 3.20 and for the art students' pretests 3.32. These scores illustrated that both groups of participants at the beginning of the study indicated it to be somewhat true for them to feel pressed and encouraged by their teachers to accept challenging and thoughtful classroom work. "My teacher presses me to do thoughtful work. When I've figured out how to do a problem, my teachers give me more challenging problems to think about" (Midgley et al., 2000, p. 11). The standard deviation mean score for non-art students' pretests was 1.35 and art students' pretests 1.21 indicating that both groups performed consistently in their responses. The results for the descriptive statistics for this scale indicated no significant difference between non-art and art students' pretests.

Table 8

Pretest Descriptive Statistics for Academic Press

					95% Confidence interval for mean			
	N	Mean	Std. deviation	Std. error	Lower bound	Upper bound	Minimum	Maximum
Non-art	422	3.2038	1.34754	0.06560	3.0749	3.3327	1.00	5.00
Art	407	3.3170	1.21172	0.06006	3.1989	3.4350	1.00	5.00
Total	829	3.2593	1.28313	0.04456	3.1719	3.3468	1.00	5.00

Context 3, academic-related perceptions, beliefs, and strategies/subscale 3, academic self-handicapping strategies. This scale referred to strategies that were used by students so that if subsequent performance was low, those circumstances, rather than lack of ability, were seen as the cause. Self-efficacious students maintain beliefs that they can

learn and understand their class work if they try. These strategies diminished the levels of needing to create reasons for not doing work or studying (Midgley & Maehr 1998). Items used to assess the academic self-handicapping strategies dimension included:

12. Some students fool around the night before a test. Then if they don't do well, they can say that is the reason. How true is this of you?
16. Some students purposely get involved in lots of activities. Then if they don't do well on their class work, they can say it is because they were involved with other things. How true is this of you?
18. Some students look for reasons to keep them from studying (not feeling well, having to help their parents, taking care of a brother or sister, etc.). Then if they don't do well on their class work, they can say this is the reason. How true is this of you?
42. Some students let their friends keep them from paying attention in class or from doing their homework. Then if they don't do well, they can say their friends kept them from working. How true is this of you?
44. Some students purposely don't try hard in class. Then if they don't do well, they can say it is because they didn't try. How true is this of you?
47. Some students put off doing their class work until the last minute. Then if they don't do well on their work, they can say that is the reason. How true is this of you?

Non-Art Students' Pretests/Art Students' Pretests Descriptive Statistics for the Academic Self-Handicapping Strategies scale were reported in Table 9. The mean score

for the non-art students' pretests was 2.40 and for the art students' pretests 2.09. These scores illustrated that both groups of participants at the beginning of the study indicated it to be slightly true for them to blame low performance in the classroom on outside circumstances, not lack of ability. Both groups reported that it was slightly true that if they didn't do well on class work, a test, or homework they created an excuse for their failure rather than allow it to reflect low abilities. The standard deviation mean score for non-art students' pretests was 1.32 and art students' pretests 1.26. These scores reflected that both groups were consistent and balanced in their responses. The results for the descriptive statistics for this scale indicated no significant difference between non-art and art students' pretests.

Table 9

Pretest Descriptive Statistics for Academic Self-Handicapping Strategies

					95% Confidence interval for mean			
	N	Mean	Std. deviation	Std. error	Lower bound	Upper bound	Minimum	Maximum
Non-art	360	2.3972	1.32071	0.06961	2.2603	2.5341	1.00	5.00
Art	358	2.0922	1.26132	0.06666	1.9611	2.2233	1.00	5.00
Total	718	2.2245	1.29953	0.04850	2.1499	2.3403	1.00	5.00

Context 3, academic-related perceptions, beliefs, and strategies/subscale 4, avoiding novelty. This scale referred to students' preferences for avoiding unfamiliar or new work. "Avoidance behaviors are very debilitating. If a student deliberately withdraws effort, resists seeking help when needed, and avoids academic risk-taking and challenges, then achievement is likely to be undermined" (Midgley & Maehr, 1998,

p.13). Students may be driven to use these strategies as a way to protect self-worth and avoid being labeled as stupid. Students who lacked belief in their abilities to do their work avoided seeking help the most (Midgley & Maehr, 1998). Items used to assess the academic avoiding novelty dimension included:

7. I would prefer to do class work that is familiar to me, rather than work I would have to learn how to do.
20. I don't like to learn a lot of new concepts in my classes.
23. I prefer to do work as I have always done it, rather than trying something new.
35. I like academic concepts that are familiar to me, rather than those I haven't thought about before.
40. I would choose class work I knew I could do, rather than work I haven't done before.

Non-Art Students' Pretests/Art Students' Pretests Descriptive Statistics for the Avoiding Novelty scale were reported in Table 10. The mean score for the non-art students' pretests was 2.90 and for the art students' pretests 2.57. These scores illustrated that both groups of participants at the beginning of the study indicated it to be slightly true for them to prefer to do work that was familiar rather than work they would have to learn how to do or to try something new. The standard deviation mean score for non-art students' pretest was 1.33 and art students' pretest 1.21 indicating that both groups tended to be balanced and consistent in their responses. The results for the descriptive statistics for this scale indicated no significant difference between non-art and art students' pretests.

Table 10

Pretest Descriptive Statistics for Avoiding Novelty

	N	Mean	Std. deviation	Std. error	95% Confidence interval for mean		Minimum	Maximum
					Lower bound	Upper bound		
Non-art	300	2.8967	1.33364	0.07700	2.7451	3.0482	1.00	5.00
Art	300	2.5733	1.21224	0.06999	2.4356	2.7111	1.00	5.00
Total	600	2.7350	1.28356	0.05240	2.6321	2.8379	1.00	5.00

Context 3, academic-related perceptions, beliefs, and strategies/subscale 5, cheating behaviors. This scale referred to students' use of cheating in class. Items used to assess the cheating behaviors dimension included:

22. I sometimes copy answers from other students during tests.

31. I sometimes cheat on my class work.

39. I sometimes copy answers from other students when I do my class work.

Non-Art Students' Pretests/Art Students' Pretests Descriptive Statistics for the Cheating Behaviors scale were reported in Table 11. The mean score for the non-art students' pretests was 2.08 and for the art students' pretests 1.92. These scores illustrated that both groups of participants at the beginning of the study indicated it to be not at all true to slightly true for them to cheat on their class work or tests. The standard deviation mean score for non-art students' pretests was 1.33 and art students' pretests 1.20, indicating that both groups tended to be consistent and balanced in their responses. The results for the descriptive statistics for this scale indicated no significant difference between non-art and art students' pretests.

Table 11

Pretest Descriptive Statistics for Cheating Behaviors

	N	Mean	Std. deviation	Std. error	95% Confidence interval for mean		Minimum	Maximum
					Lower bound	Upper bound		
Non-art	180	2.0078	1.32638	0.09886	1.8827	2.2729	1.00	5.oo
Art	179	1.9218	1.19668	0.08944	1.7453	2.0983	1.00	5.00
Total	359	2.0000	1.26403	0.06671	1.8688	2.1312	1.00	5.00

Context 1, academic-related perceptions, beliefs, and strategies/subscale 6, disruptive behaviors. This scale referred to students' engagement in behaviors that disrupt or disturb the classroom. Students' confidence that they can do their class work increased positive behavior and diminished the need to fool around in class when they should be studying (Midgley & Maehr, 1998). Items used to assess the disruptive behaviors dimension included:

14. I sometimes annoy my teachers during my classes.

30. I sometimes get into trouble with my teachers during my classes.

34. I sometimes behave in a way during my classes that annoys my teachers.

50. I sometimes don't follow my teachers' directions during my classes.

54. I sometimes disturb the lessons that are going on in my classes.

Non-Art Students' Pretests /Art Students' Pretests Descriptive Statistics for the Disruptive Behavior scale were reported in Table 12. The mean score for the non-art students' pretests was 3.30 and for the art students' pretests 3.46. These scores illustrated that at the beginning of the study the non-art and art student participants indicated it to be

somewhat true for them to engage in behaviors that disrupt or disturb the classroom. The standard deviation mean score for non-art students' pretests was 1.45 and art students' pretests 1.38, indicating that both groups tended to be consistent and balanced in their responses. The results for the descriptive statistics for this scale indicated no significant difference between non-art and art students' pretests.

Table 12

Pretest Descriptive Statistics for Disruptive Behaviors

					95% Confidence interval for mean			
	N	Mean	Std. deviation	Std. error	Lower bound	Upper bound	Minimum	Maximum
Non-art	300	3.2967	1.44994	0.08371	3.1319	3.4614	1.00	5.00
Art	299	3.4615	1.38097	0.07986	3.3044	3.6187	1.00	5.00
Total	599	3.3790	1.41715	0.05790	3.2652	3.4927	1.00	5.00

Context 3, academic-related perceptions, beliefs, and strategies/subscale 7, self-presentation of low achievement. This scale referred to students' preferences to keep peers from knowing how well they are achieving in school. Items used to assess the self-presentation of low achievement dimension included:

2. I would avoid participating in my classes if it meant that other students would think I know a lot
5. If other students found out I did well on a test or a class project, I would tell them it was just luck even if that wasn't the case.
21. I wouldn't volunteer to answer questions in my classes if I thought other students would think I was smart.

24. If I did well on school assignments, I wouldn't want other students to see my grades.
27. It is very important to me that I don't look smarter than others in my classes.
37. If I were good at my class work, I would try to do my work in a way that didn't show it.
46. One of my goals in my classes is to avoid looking smarter than other kids.

Non-Art Students' Pretest /Art Students' Pretests Descriptive Statistics for the Self-Presentation of Low Achievement scale were reported in Table 13. The mean score for the non-art students' pretests was 1.98 and for the art students' pretests 1.75. These scores illustrated that at the beginning of the study the non-art student and the art student participants indicated it to be not at all true that they would avoid participating in their classes if it meant that other students would think they know a lot and that they wouldn't avoid the appearance of looking smart in their classes. The standard deviation mean score for non-art students' pretests was 1.28 and art students' pretests 1.22. These standard deviation mean scores reflected that both groups of participants were balanced and consistent in their responses. The results for the descriptive statistics for this scale indicated no significant difference between non-art and art students' pretests.

Table 13

Pretest Descriptive Statistics for Self-Presentation of Low Achievement

	N	Mean	Std. deviation	Std. error	95% Confidence interval for mean		Minimum	Maximum
					Lower bound	Upper bound		
Non-art	420	1.9810	1.28127	0.06252	1.8581	2.1038	1.00	5.00
Art	420	1.7524	1.21668	0.05937	1.6357	1.8691	1.00	5.00
Total	840	1.8667	1.25387	0.04326	1.7818	1.9516	1.00	5.00

Context 3, academic-related perceptions, beliefs, and strategies/subscale 8, skepticism about the relevance of school for future success. This scale referred to students' beliefs that doing well in school would not help them achieve success in the future. Items used to assess the skepticism about the relevance of school for future success dimension included:

4. Even if I do well in school, it will not help me have the kind of life I want when I grow up.
13. My chances of succeeding later in life don't depend on doing well in school.
28. Doing well in school doesn't improve my chances of having a good life when I grow up.
32. Getting good grades in school won't guarantee that I will get a good job when I grow up.
36. Even if I am successful in school, it won't help me fulfill my dreams.
43. Doing well in school won't help me have a satisfying career when I grown up.

Non-Art Students' Pretests/Art Students' Pretests Descriptive Statistics for the Skepticism About the Relevance of School for Future Success scale were reported in Table 14. The mean score for the non-art students' pretests was 1.95 and for the art students' pretests 1.76. These scores illustrated that at the beginning of the study the non-art student and the art student participants indicated it to be not at all true that they believe that doing well in school would not help them achieve a good life, satisfying career, and being successful. The standard deviation mean score for non-art students' pretests was 1.29 and art students' pretests 1.20, indicating that both groups remained consistent and balanced in their responses. The results for the descriptive statistics for this scale indicated no significant difference between non-art and art students' pretests.

Table 14

Pretest Descriptive Statistics for Skepticism About the Relevance of School for Future Success

					95% Confidence interval for mean			
	N	Mean	Std. deviation	Std. error	Lower bound	Upper bound	Minimum	Maximum
Non-art	360	1.9472	1.29063	0.06802	1.8135	2.0810	1.00	5.00
Art	360	1.7611	1.19593	0.06303	1.6372	1.8851	1.00	5.00
Total	720	1.8542	1.24680	0.04647	1.7629	1.9454	1.00	5.00

Context 3, pretest descriptive statistics summary. The results of the pretest descriptive statistics and the 95% of confidence intervals of the mean differences for all 8 subscales from Context 3: Academic-Related Perceptions, Beliefs and Strategies revealed no significant difference between the treatment group and comparison-control group.

Only minimal differences were found Between Groups for their means, standard deviations, and total scores for all subscales, revealing that for this context both groups were consistent and balanced in their responses and lay within the confidence interval at the beginning of the treatment.

Pretest descriptive statistics overall summary of findings. An overview of the treatment and comparison-control groups' pretest mean scores for the three contexts and related scales were reported in Figure 1. The mean score results in Figure 1 indicated that the comparison-control group scored higher on 8 of the14 scales while the treatment group scored higher on 5 of the 14 scales. Both groups scored equally on one scale. There were however, item wise minimal differences between the participants, indicating that at the beginning of the study both groups were quite similar in their sense of self-efficacy.

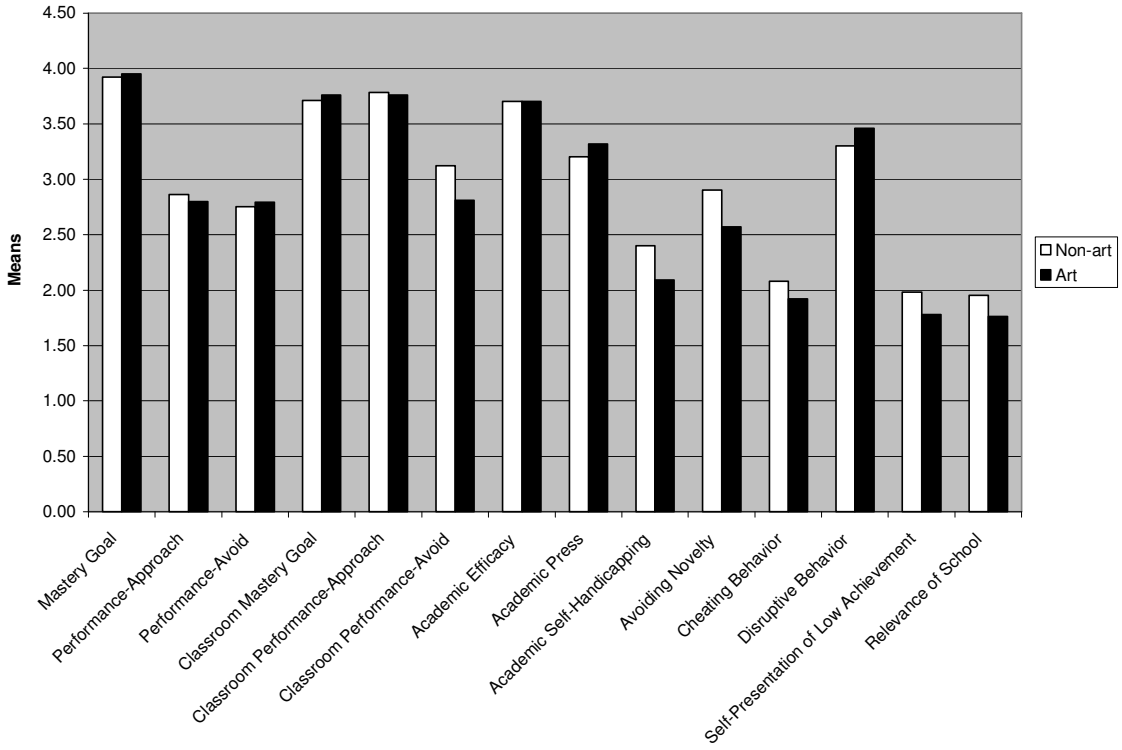

Figure 1. Bar graph showing non-art and art students' pretest descriptive statistics mean scores summary.

Pretest Results, Inferential Statistics for Treatment and Comparison-Control Groups

Context 1, personal achievement goal orientation/ subscale 1, mastery goal orientation. Non-Art Students' Pretests /Art Students' Pretests one-way ANOVA data for the Mastery Goal Orientation scale were reported in Table 15. The main effects for this scale were $F(1, 598) = .11$, $p = .74$, $\eta^2 = .00$. Results for the one-way ANOVA for the Mastery Goal Orientation scale indicated no significant difference between non-art students' pretests and art students' pretests. This corroborated the previously reported descriptive statistical data.

Table 15

Pretest Inferential Statistics for Mastery Goal Orientation

	Sum of squares	*df*	Mean square	*F*	η^2	Sig.
Between groups	0.167	1	0.167	0.11	0	0.74
Within groups	907.427	598	1.517			
Total	907.593	599				

Context 1, personal achievement goal orientation/ subscale 2, performance-approach goal orientation. Non-Art Students' Pretests /Art Students' Pretests one-way ANOVA data for the Performance-Approach Goal Orientation scale were reported in Table 16. The main effects for this scale were $F(1,590) = .26$, $p = .61$, $\eta^2 = .00$. Results for the one-way ANOVA for the Performance-Approach Goal Orientation scale indicated no significant difference between non-art students' pretests and art students' pretests.

Table 16
Pretest Inferential Statistics for Performance-Approach Goal Orientation

	Sum of squares	*df*	Mean square	*F*	η^2	Sig.
Between groups	0.469	1	0.469	0.255	0	0.614
Within groups	1083.975	590	1.837			
Total	1084.444	591				

Context 1, personal achievement goal orientation/ subscale 3, performance-avoid goal orientation. Non-Art Students' Pretests /Art Students' Pretests one-way ANOVA data for the Performance-Avoid Goal Orientation scale were reported in Table 17. The

main effects for this scale were $F(1,473) = .28$, $p = .60$, $\eta^2 = .00$. The results for this one-way ANOVA scale indicated no significant difference between non-art students' pretests and art students' pretests.

Table 17

Pretest Inferential Statistics for Performance-Avoid Goal Orientation

	Sum of squares	*df*	Mean square	*F*	η^2	Sig.
Between groups	0.677	1	0.677	0.278	0	0.598
Within groups	1150.847	473	2.433			
Total	1151.524	474				

Context 1, pretest inferential statistics summary. The results of the pretest inferential statistics for all three subscales from Context 1, Personal Achievement Goal Orientations revealed no significant differences between the treatment group and comparison-control group.

Context 2, *perception of classroom goal structures/subscale 1, classroom mastery goal structure.* Non-Art Students' Pretests /Art Students' Pretests one-way ANOVA data for the Classroom Mastery Goal Structure scale were reported in Table 18. The main effects for this scale were $F(1,711) = .28$, $p = .60$, $\eta^2 = .00$. The results for this one-way ANOVA scale indicated no significant difference between non-art students' pretests and art students' pretests.

Table 18

Pretest Inferential Statistics for Classroom Mastery Goal Structure

	Sum of squares	*df*	Mean square	*F*	η^2	Sig.
Between groups	0.499	1	0.499	0.28	0	0.597
Within groups	1268.402	711	1.784			
Total	1268.9	712				

Context 2, perception of classroom goal structures/subscale 2, classroom performance-approach goal structure. Non-Art Students' Pretests /Art Students' Pretests one-way ANOVA data for the Classroom Performance-Approach Goal Structure scale were reported in Table 19. The main effects for this scale were $F(1,353) = .01$, $p = .93$, $\eta^2 = .00$. The one-way ANOVA results for this scale indicated that at the beginning of the study there were no significant difference between non-art and art students' pretests.

Table 19

Pretest Inferential Statistics for Classroom Performance-Approach Goal Structure

	Sum of squares	*df*	Mean square	*F*	η^2	Sig.
Between groups	0.014	1	0.014	0.007	0	0.932
Within groups	671.045	353	1.901			
Total	671.059	354				

Context 2, p*erception of classroom goal structures/ subscale 3, classroom performance-avoid goal structure.* Non-Art Students' Pretests /Art Students' Pretests one-way ANOVA data for the Classroom Performance-Avoid Goal Structure scale were

reported in Table 20. The main effects for this scale were $F(1,588) = 6.63$, $p = .01$, $\eta^2 = .01$. These findings indicated significant differences for the non-art participants' pretests as compared to the art student participants' pretests. These statistics revealed that at the beginning of the study the non-art students demonstrated more of a belief that the purpose of engaging in academic work in the classroom was to avoid the appearance of incompetence. However, the proportion of the total variability accounted for by the difference between treatments was minimal with .01%.

Table 20

Pretest Inferential Statistics for Classroom Performance-Avoid Goal Structure

	Sum of squares	*df*	Mean square	*F*	η^2	Sig.
Between groups	14.036	1	14.036	6.632	0.01	0.01
Within groups	1244.353	588	2.116			
Total	1258.388	589				

Context 2, pretest inferential statistics summary. The results of the pretest inferential statistics for two of the subscales from Context 2: Perception of Classroom Goal Structures revealed no significant differences between the treatment group and comparison-control group. One subscale, Classroom Performance-Avoid Goal Structure indicated a significant difference for the non-art comparison-control group with a minimal effect size of .01%.

Context 3, academic-related perceptions, beliefs, and strategies/subscale 1, academic efficacy. Non-Art Students Posttests/Art Students' Posttests one-way ANOVA

data for the Academic Efficacy scale were reported in Table 21. The main effects for this scale were $F(1,592) = .73$, $p = .40$, $\eta^2 = .00$. This scale indicated no significant difference between non-art students' posttests and art students' posttests.

Table 21

Pretest Inferential Statistics for Academic Efficacy

	Sum of squares	*df*	Mean square	*F*	η^2	Sig.
Between groups	1.416	1	1.416	0.725	0	0.395
Within groups	1155.603	592	1.952			
Total	1157.019	593				

Context 3, academic-related perceptions, beliefs, and strategies/subscale 2, academic press. Non-Art Students' Pretests /Art Students' Pretests one-way ANOVA data for the Academic Press scale were reported in Table 22. The main effects for this scale were $F(1,827) = 1.61$, $p = .20$, $\eta^2 = .00$. The one-way ANOVA results for this scale indicated no significant difference between non-art students' and art students' pretests.

Table 22

Pretest Inferential Statistics for Academic Press

	Sum of squares	*df*	Mean square	*F*	η^2	Sig.
Between groups	2.653	1	2.653	1.613	0	0.204
Within groups	1360.587	827	1.645			
Total	1363.24	828				

Context 3, academic-related perceptions, beliefs, and strategies/subscale 3, academic self-handicapping strategies. Non-Art Students' Pretests /Art Students' Pretests one-way ANOVA data for the Academic Self-Handicapping Strategies scale were reported in Table 23. The main effects for this scale were $F(1,716) = 10.02$, $p = .00$, $\eta^2 = .01$. The findings for this ANOVA indicated a significant difference for the non-art students' pretests with a minimal effect size of .01. These statistics revealed that at the beginning of the study the non-art students demonstrated less need to create reasons for not doing class work or studying than the art students.

Table 23

Pretest Inferential Statistics for Academic Self-Handicapping Strategies

	Sum of squares	*df*	Mean square	*F*	η^2	Sig.
Between groups	16.703	1	16.703	10.015	0.01	0.002
Within groups	1194.155	716	1.668			
Total	1210.858	717				

Context 3, academic-related perceptions, beliefs, and strategies/subscale 4, avoiding novelty. Non-Art Students' Pretests /Art Students' Pretests one-way ANOVA data for the Avoiding Novelty scale were reported in Table 24. The main effects for this scale were $F(1,598) = 9.66$, $p = .00$, $\eta^2 = .02$. The one-way ANOVA results for this scale indicated a significant difference for the non-art students' pretests with a minimal effect size of .02%. These statistics revealed that at the beginning of the study the non-art students demonstrated less need to avoid unfamiliar or new work in the classroom.

Table 24

Pretest Inferential Statistics for Avoiding Novelty

	Sum of squares	*df*	Mean square	*F*	η^2	Sig.
Between groups	15.682	1	15.682	9.656	0.02	0.002
Within groups	971.183	598	1.624			
Total	986.865	599				

Context 3, academic-related perceptions, beliefs, and strategies/subscale 5, cheating behaviors. Non-Art Students' Pretests /Art Students' Pretests one-way ANOVA data for the Cheating Behavior scale were reported in Table 25. The main effects for this scale were $F(1,357) = 1.37$, $p = .24$, $\eta^2 = .00$. The one-way ANOVA findings for this scale indicated no significant difference between non-art students' and art students' pretests.

Table 25

Pretest Inferential Statistics for Cheating Behaviors

	Sum of squares	*df*	Mean square	*F*	η^2	Sig.
Between groups	2.184	1	2.184			
Within groups	569.816	357	1.596	1.368	0	0.243
Total	572	358				

Context 3, academic-related perceptions, beliefs, and strategies/subscale 6, disruptive behaviors. Non-Art Students' Pretests /Art Students' Pretests one-way ANOVA data for the Disruptive Behaviors scale were reported in Table 26. The main

effects for this scale were $F(1,597) = 2.03$, $p = .16$, $\eta^2 = .00$. These findings for this scale indicated no significant difference between non-art students' and art students' pretests.

Table 26

Pretest Inferential Statistics for Disruptive Behaviors

	Sum of squares	*df*	Mean square	*F*	η^2	Sig.
Between groups	4.071	1	4.071	2.03	0	0.155
Within groups	1196.904	597	2.005			
Total	1200.975	598				

Context 3, academic-related perceptions, beliefs, and strategies/subscale 7, self-presentation of low achievement. Non-Art Students' Pretests /Art Students' Pretests one-way ANOVA data for the Self-Presentation of Low Achievement scale were reported in Table 27. The main effects for this scale were $F(1,838) = 7.03$, $p = .01$, $\eta^2 = .01$. This data indicated a significant difference for the non-art students' pretests with a minimal effect size of .01%. These findings indicated that at the beginning of the study the non-art students demonstrated less preference to keep peers from knowing how well they were achieving in school.

Table 27

Pretest Inferential Statistics for Self-Presentation of Low Achievement

	Sum of squares	*df*	Mean square	*F*	η^2	Sig.
Between groups	10.971	1	10.971	7.029	0.01	0.008
Within groups	1308.095	838	1.561			
Total	1319.067	839				

Context 3, academic-*related perceptions, beliefs, and strategies/subscale 8, skepticism about the relevance of school for future success.* Non-Art Students' Pretests /Art Students' Pretests one-way ANOVA data for the Skepticism About the Relevance of School for Future Success scale were reported in Table 28. The main effects for this scale were $F(1,718) = 4.03$, $p = .05$, $\eta^2 = .01$. The findings indicated a significance difference for non-art students' pretests with a minimal effect size of .01%. These statistics indicated that at the beginning of the study the non-art students believed to a higher degree that doing well in school would help them be more successful.

Table 28

Pretest Inferential Statistics for Skepticism About the Relevance of School for Future Success

	Sum of squares	*df*	Mean square	*F*	η^2	Sig.
Between groups	6.235	1	6.235	4.028	0.01	0.045
Within groups	1111.453	718	1.548			
Total	1117.688	719				

Context 3, pretest inferential statistics summary. The results of the pretest inferential statistics for four of the eight subscales from Context 3, Academic-Related Perceptions, Beliefs, and Strategies revealed no significant differences between the treatment group and comparison-control group. Four of the subscales, Academic Self-Handicapping Strategies, Avoiding Novelty, Self-Presentation of Low Achievement and Skepticism About the Relevance of School for Future Success indicated a significance difference for the non-art comparison-control group with minimal effect sizes ranging between .01% - .02%.

Pretest inferential statistics overall summary of findings for treatment and comparison-control groups. An overview of the treatment and comparison-control groups' pretest inferential statistics for the three contexts and related 14 scales are reported in Table 29. These pretest findings revealed that 9 of the 14 scales were not significant. The scores for the remaining five scales indicated significant results for the non-art students' pretest scores. All art students' pretests specified nonsignificant findings. The effect size for non-art student data was minimal with .01% - .02%.

Table 29

Non-Art and Art Students' Pretest Inferential Statistics Overview

PALS scales	Non-art and art inferential pretest results
Mastery goal	Nonsignificant
Performance-approach	Nonsignificant
Performance-avoid	Nonsignificant
Classroom mastery goal	Nonsignificant
Classroom performance-approach	Nonsignificant
Classroom performance-avoid	Non-Art Significant
Academic efficacy	Nonsignificant
Academic press	Nonsignificant
Academic self-handicapping	Non-art significant
Avoid novelty	Non-art significant
Cheating behavior	Nonsignificant
Disruptive behavior	Nonsignificant
Self-presentation of low achievement	Non-art significant
Relevance of school for future success	Non-art significant

Posttest Results, Descriptive Statistics for Treatment and Comparison-Control Groups

Context 1, personal achievement goal orientation/ subscale 1, mastery goal orientation. Non-Art Students' Posttests/Art Students' Posttests Descriptive Statistics for the Mastery Goal Orientation scale were reported in Table 30. The mean score for the

non-art students' posttests was 3.75 and for the art students' posttests 3.76. The posttest data indicated that there were no significant difference at the completion of the study for it to be somewhat true for both the non-art and art student participants to want to learn, understand, and master new concepts and skills in their classes. The standard deviation mean score for the non-art students' posttests was 1.38 and 1.30 for the art students' posttests, indicating that both groups tended to be balanced and consistent in their responses on the posttests.

Table 30

Posttest Descriptive Statistics for Mastery Goal Orientation

					95% Confidence interval for mean			
	N	Mean	Std. deviation	Std. error	Lower bound	Upper bound	Minimum	Maximum
Non-art	297	3.7542	1.38166	0.08017	3.5964	3.9120	1.00	5.00
Art	298	3.7617	1.30537	0.07562	3.6129	3.9106	1.00	5.00
Total	595	3.7580	1.34286	0.05505	3.6499	3.8661	1.00	5.00

Context 1, personal achievement goal orientation/subscale 2, performance-approach goal orientation. Non-Art Students' Posttests/Art Students' Posttests Descriptive Statistics for the Performance-Approach Goal Orientation scale were reported in Table 31. The mean score for the non-art students' posttests was 3.05 and for the art students' posttests 2.78. These posttest findings indicated a slightly lower score for the art students. Additionally, the data indicated that there were no significant differences between the participants at the completion of the study for it to be slightly

true to somewhat true to show other students that they are good at their class work and in comparison to the other students in their classes they look smarter. The standard deviation score was 1.31 for non-art students' posttests and 1.42 for art students' posttests, indicating that both groups tended to be balanced and consistent in their responses.

Table 31

Posttest Descriptive Statistics for Performance-Approach Goal Orientation

					95% Confidence interval for mean			
	N	Mean	Std. deviation	Std. error	Lower bound	Upper bound	Minimum	Maximum
Non-art	297	3.0471	1.31434	0.07627	2.8970	3.1972	1.00	5.00
Art	294	2.7789	1.42219	0.08294	2.6157	2.9422	1.00	5.00
Total	591	2.9137	1.37446	0.05654	2.8027	3.0247	1.00	5.00

Context 1, personal achievement goal orientation/ subscale 3, performance-avoid goal orientation. Non-Art Students' Posttests/Art Students' Posttests Descriptive Statistics for the Performance-Avoid Goal Orientation scale were reported in Table 32. The mean score for the non-art students' posttests was 2.79 and for the art students' posttests 2.61, revealing a minimal drop in score for the treatment group from the beginning to the end of the study. The data indicated that there were no significant differences at the completion of the study for it to be slightly true for both the non-art and art student participants to desire to avoid demonstrating incompetence while doing class work. The standard deviation score was 1.47 for the non-art participants' and 1.45 for art

participants' posttests, indicating that both groups remained consistent and balanced in their posttest responses.

Table 32

Posttest Descriptive Statistics for Performance-Avoid Goal Orientation

					95% Confidence interval for mean			
	N	Mean	Std. deviation	Std. error	Lower bound	Upper bound	Minimum	Maximum
Non-art	240	2.7917	1.47160	0.09499	2.6045	2.9788	1.00	5.00
Art	240	2.6083	1.45387	0.09385	2.4235	2.7932	1.00	5.00
Total	480	2.7000	1.46411	0.06683	2.5687	2.8313	1.00	5.00

Context 1, posttest descriptive statistics summary. The results of the posttest descriptive statistics and the 95% of confidence intervals of the mean differences for all three subscales from Context 1, Personal Achievement Goal Orientation revealed no significant differences between the treatment group and comparison-control group at the end of the study. Only minimal differences were found between groups for their means, standard deviations, and total scores for all subscales, revealing that for this context both groups were consistent and balanced in their responses and lay within the confidence interval at the completion of the treatment.

Context 2, perception of classroom goal structures/ subscale 1, classroom mastery goal structure. Non-Art Students' Posttests/Art Students' Posttests Descriptive Statistics for the Classroom Mastery Goal Structure scale were reported in Table 33. The mean score for the non-art students' posttests was 3.59 and for the art students' posttests

3.65. These posttests data indicated no significant differences at the completion of the study for it to be somewhat true for both the non-art and art student participants to desire to engage in academic work in the classroom in order to develop competence. The standard deviation mean score was 1.34 for the non-art participants' and 1.36 for the art participants' posttests, indicating that posttest scores for both groups were balanced and consistent.

Table 33

Posttest Descriptive Statistics for Classroom Mastery Goal Structure

					95% Confidence interval for mean			
	N	Mean	Std. deviation	Std. error	Lower bound	Upper bound	Minimum	Maximum
Non-art	357	3.5938	1.33672	0.07075	3.4547	3.7330	1.00	5.00
Art	355	3.6479	1.35816	0.07208	3.5061	3.7897	1.00	5.00
Total	712	3.6208	1.34677	0.05047	3.5217	3.7199	1.00	5.00

Context 2, perception of classroom goal structures/subscale 2, classroom performance-approach goal structure. Non-Art Students' Posttests/Art Students' Posttests Descriptive Statistics for the Classroom Performance-Approach Goal Structure scale were reported in Table 34. The mean score for the non-art students' posttests was 3.87 and for the art students' posttests 3.57. The findings from these posttests indicated that at the completion of the study for it to be somewhat true for both the non-art and art student participants to desire to engage in academic work in the classroom in order to develop competence. The standard deviation score was 1.27 for the non-art students' and

1.26 for the art students' posttests, indicating that both groups remained balanced and consistent in their posttest responses.

Table 34

Posttest Descriptive Statistics for Classroom Performance-Approach Goal Structure

					95% Confidence interval for mean			
	N	Mean	Std. deviation	Std. error	Lower bound	Upper bound	Minimum	Maximum
Non-art	178	3.8652	1.27285	0.09540	3.6769	4.0534	1.00	5.00
Art	180	3.5722	1.25529	0.09356	3.3876	3.7569	1.00	5.00
Total	358	3.7179	1.27077	0.06716	3.5858	3.8500	1.00	5.00

Context 2, p*erception of classroom goal structures/subscale 3, classroom performance-avoid goal structure.* Non-Art Students' Posttests/Art Students' Posttests Descriptive Statistics for the Classroom Performance-Avoid Goal Structure scale were reported in Table 35. The mean score for the non-art students' posttests was 3.08 and for the art students' posttests 3.18. The findings from these posttests reflected that at the completion of the study for it to be somewhat true for both the non-art and art student participants to desire to engage in academic work in the classroom in order to avoid demonstrating incompetence. Even though the data revealed no significant differences, the art student participant's score showed a .10 higher posttest score as compared to the non-art student participants. The standard deviation score was 1.40 for the non-art students' and 1.39 for the art students' posttests, indicating that both groups tended to be balanced and consistent in their responses.

Table 35

Posttest Descriptive Statistics for Classroom Performance-Avoid Goal Structure

					95% Confidence interval for mean			
	N	Mean	Std. deviation	Std. error	Lower bound	Upper bound	Minimum	Maximum
Non-art	297	3.0808	1.40229	0.08137	2.9207	3.2409	1.00	5.00
Art	297	3.1785	1.39199	0.08077	3.0195	3.3374	1.00	5.00
Total	594	3.1296	1.39683	0.05731	3.0171	3.2422	1.00	5.00

Context 2, posttest descriptive statistics summary. The results of the posttest descriptive statistics and the 95% of confidence intervals of the mean differences for all three subscales from Context 2: Perception of Classroom Goal Structure revealed no significant differences between the treatment group and comparison-control group at the end of the study. Only minimal differences were found between groups for their means, standard deviations, and total scores for all subscales, revealing that for this context both groups were consistent and balanced in their responses and lay within the confidence interval at the end of the treatment.

Context 3, academic-related perceptions, beliefs, and strategies/subscale 1, academic efficacy. Non-Art Students' Posttests/Art Students' Posttests Descriptive Statistics for the Academic Efficacy scale were reported in Table 36. The mean score for the non-art students' posttests was 3.68 and for the art students' posttests 3.70. The findings of these posttests indicated that at the completion of the study for it to be somewhat true for both the non-art and art student participants to believe that they were competent to do their class work. The data indicated no significant difference between the

non-art and art student participant's posttest scores. The standard deviation score was 1.26 for the non-art posttests and 1.35 for the art posttests, indicating that both groups were balanced and consistent in their responses.

Table 36

Posttest Descriptive Statistics for Academic Efficacy

					95% Confidence interval for mean			
	N	Mean	Std. deviation	Std. error	Lower bound	Upper bound	Minimum	Maximum
Non-art	296	3.6757	1.26339	0.07343	3.5312	3.8202	1.00	5.00
Art	299	3.6990	1.35224	0.07820	3.5451	3.8529	1.00	5.00
Total	595	3.6874	1.30774	0.05361	3.5821	3.7927	1.00	5.00

Context 3, academic-related perceptions, beliefs, and strategies/subscale 2, academic press. Non-Art Students' Posttests/Art Students' Posttests Descriptive Statistics for the Academic Press scale were reported in Table 37. The mean score for the non-art students' posttests was 3.36 and for the art students' posttests 3.25. This posttest data indicated that at the completion of the study it was somewhat true for both the non-art and art student participants to feel pressed and encouraged by their teachers. The data indicated no significant differences between the non-art and art student participant's posttest scores. The standard deviation mean scores were 1.25 for the non-art students and 1.18 for the art students' posttests, indicating that both groups were balanced and consistent in their responses.

Table 37

Posttest Descriptive Statistics for Academic Press

	N	Mean	Std. deviation	Std. error	95% Confidence interval for mean		Minimum	Maximum
					Lower bound	Upper bound		
Non-art	417	3.3573	1.24784	0.06111	3.2372	3.4774	1.00	5.00
Art	419	3.2506	1.17865	0.05758	3.1374	3.3638	1.00	5.00
Total	836	3.3038	1.21141	0.04199	3.2214	3.3862	1.00	5.00

Context 3, academic-related perceptions, beliefs, and strategies/subscale 3, academic self-handicapping strategies. Non-Art Students' Posttests/Art Students' Posttests Descriptive Statistics for the Academic Self-Handicapping Strategies scale were reported in Table 38. The mean score for the non-art students' posttests was 2.16 and for the art students' posttests 2.05. The findings for the posttests indicated that at the completion of the study it was slightly true for both the non-art and art student participants to blame low performance in the classroom on outside circumstances, not lack of ability. The data indicated no significant differences between the non-art and art student participant's posttest scores. The standard deviation mean scores were 1.16 for both the non-art students' and art students' posttests. These scores reflected that both groups were consistent and balanced in their posttest responses

Table 38

Posttest Descriptive Statistics for Academic Self-Handicapping Strategies

	N	Mean	Std. deviation	Std. error	95% Confidence interval for mean		Minimum	Maximum
					Lower bound	Upper bound		
Non-art	360	2.1583	1.16348	0.06132	2.0377	2.2789	1.00	5.00
Art	360	2.0472	1.15655	0.06096	1.9273	2.1671	1.00	5.00
Total	720	2.1028	1.16054	0.04325	2.0179	2.1877	1.00	5.00

Context 3, academic-related perceptions, beliefs, and strategies/subscale 4, avoiding novelty. Non-Art Students' Posttests/Art Students' Posttests Descriptive Statistics for the Avoiding Novelty scale were reported in Table 39. The mean score for the non-art students' posttests was 2.74 and for the art students' posttests 2.85. These posttest findings indicated that at the completion of the study it was slightly true for both the non-art and art student participants to prefer to do work that was familiar, rather than work they would have to learn how to do or to try something new. The data indicated no significant difference between the non-art and art student participant's posttests scores. The standard deviation mean scores were 1.27 for the non-art students and 1.24 for the art students' posttests, indicating that both groups were balanced and consistent in their posttest descriptive responses.

Table 39

Posttest Descriptive Statistics for Avoiding Novelty

	N	Mean	Std. deviation	Std. error	95% Confidence interval for mean		Minimum	Maximum
					Lower bound	Upper bound		
Non-art	300	2.7433	1.26866	0.07325	2.5992	2.8875	1.00	5.00
Art	300	2.8467	1.23622	0.07137	2.7062	2.9871	1.00	5.00
Total	600	2.7950	1.25257	0.05114	2.6946	2.8954	1.00	5.00

Context 3, academic-related perceptions, beliefs, and strategies/subscale 5, cheating behaviors. Non-Art Students' Posttests/Art Students' Posttests Descriptive Statistics for the Cheating Behaviors scale were reported in Table 40. The mean score for the non-art students' posttests was 2.29 and for the art students' posttests 1.96. These findings indicated that at the completion of the study it was not at all true to slightly true for both the non-art and art student participants to copy class work from other students or cheat during tests. The data indicated no significant difference between the non-art and art student participants' posttests scores. The standard deviation mean scores were 1.29 for the non-art students and 1.17 for the art students' posttests, reflecting that both groups remained consistent and balanced in their posttest responses for this scale.

Table 40

Posttest Descriptive Statistics for Cheating Behaviors

	N	Mean	Std. deviation	Std. error	95% Confidence interval for mean		Minimum	Maximum
					Lower bound	Upper bound		
Non-art	180	2.2889	1.29239	0.09633	2.0988	2.4790	1.00	5.00
Art	180	1.9611	1.16927	0.08715	1.7891	2.1331	1.00	5.00
Total	360	2.1250	1.24155	0.06544	1.9963	2.2537	1.00	5.00

Context 3, academic-related perceptions, beliefs, and strategies/subscale 6, disruptive behaviors. Non-Art Students' Posttests/Art Students' Posttests Descriptive Statistics for the Disruptive Behavior scale were reported in Table 41. The mean score for the non-art students' posttests was 2.53 and for the art students' posttests 2.19. These posttest data indicated that at the completion of the study it was slightly true for both the non-art and art student participants to engage in behaviors that disrupted or disturbed the classroom. The data indicated no significant difference between the non-art and art student participants' posttest scores. The standard deviation mean scores were 1.36 for the non-art students and 1.18 for the art students' posttests, indicating that both groups of participants remained balanced and consistent in their responses.

Table 41

Posttest Descriptive Statistics for Disruptive Behavior

	N	Mean	Std. deviation	Std. error	95% Confidence interval for mean		Minimum	Maximum
					Lower bound	Upper bound		
Non-art	299	2.5318	1.36156	0.07874	2.3768	2.6867	1.00	5.00
Art	300	2.1867	1.17889	0.06806	2.0527	2.3206	1.00	5.00
Total	599	2.3589	1.28396	0.05246	2.2559	2.4620	1.00	5.00

Context 3, academic-related perceptions, beliefs, and strategies/subscale 7, self-presentation of low achievement. Non-Art Students' Posttests/Art Students' Posttests Descriptive Statistics for the Self-Presentation of Low Achievement scale were reported in Table 42. The mean score for the non-art students' posttests was 1.87 and for the art students' posttests 2.06. The posttests findings indicated that at the completion of the study it was not true at all for non-art participants to slightly true for art student participants to avoid the appearance of looking smart in their classes. The data indicated minimal significant difference between the non-art and art student participants' posttest scores. The standard deviation mean score was 1.22 for the non-art students and 1.48 for the art students' posttests, indicating that both groups remained balanced and consistent in their responses.

Table 42

Posttest Descriptive Statistics for Self-Presentation of Low Achievement

	N	Mean	Std. deviation	Std. error	95% Confidence interval for mean		Minimum	Maximum
					Lower bound	Upper bound		
Non-art	420	1.8714	1.21550	0.05931	1.7548	1.9880	1.00	5.00
Art	420	2.0571	1.48230	0.07233	1.9150	2.1993	1.00	5.00
Total	840	1.9643	1.35786	0.04685	1.8723	2.0562	1.00	5.00

Context 3, academic-related perceptions, beliefs, and strategies/subscale 8, skepticism about the relevance of school for future success. Non-Art Students' Posttests/Art Students' Posttests Descriptive Statistics for the Skepticism About the Relevance of School for Future Success scale were reported in Table 43. The mean score for the non-art students' posttests was 1.81 and for the art students' posttests 1.93. The posttest data indicated that at the completion of the study it was not true at all for both the non-art and art student participants to believe that doing well in school would not help them achieve a good life, a satisfying career, and become successful. The data indicated no significant difference between the non-art and art student participants' posttest scores. The standard deviation mean score was 1.22 for the non-art students and 1.24 for the art students' posttests, indicating that both groups were balanced and consistent in their responses on this scale.

Table 43

Posttest Descriptive Statistics for Skepticism About the Relevance of School for Future Success

					95% Confidence interval for mean			
	N	Mean	Std. deviation	Std. error	Lower bound	Upper bound	Minimum	Maximum
Non-art	359	1.8134	1.22417	0.06461	1.6863	1.9404	1.00	5.00
Art	360	1.9278	1.24014	0.06536	1.7992	2.0563	1.00	5.00
Total	719	1.8707	1.23266	0.04597	1.7804	1.9609	1.00	5.00

Context 3, posttest descriptive statistics summary. The results of the posttest descriptive statistics and the 95% of confidence intervals of the mean differences for all eight subscales from Context 3: Academic-Related Perceptions, Beliefs and Strategies revealed no significant difference between the treatment group and comparison-control group at the completion of the study. Only minimal differences were found between groups for their means, standard deviations, and total scores for all subscales, revealing that for this context both groups were consistent and balanced in their responses and lay within the confidence interval at the end of the treatment.

Posttest descriptive statistics overall summary of findings. Figure 2 illustrated the mean differences for non-art students' posttests/art students' posttests for all three contexts and corresponding scales. These posttest results indicated that the comparison-control groups' mean scores were higher on 7 of the 14 scales and the treatment groups' mean scores were higher on 5 of the 14 scales. The posttest mean scores were equal on two of the scales**.** It is evident from these findings, in spite of the minimal differences in

scores, that the non-art students' mean scores remained higher from the beginning of the study to the end. The outcome indicated that at the end of the study, the art education treatment did not affect the treatment groups' self-efficacy.

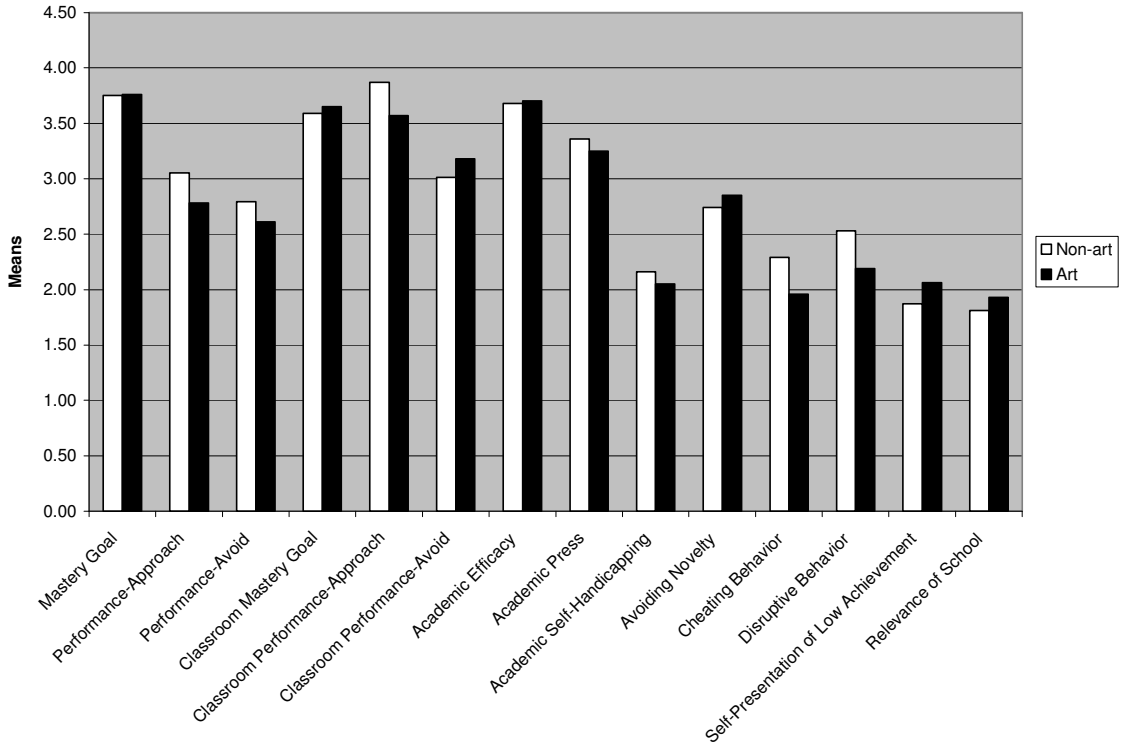

Figure 2. Bar graph showing non-art and art students' posttest descriptive statistics mean scores summary.

Posttest Results: Inferential Statistics for Treatment and Comparison-Control Groups

Context 1, p*ersonal achievement goal orientation/* s*ubscale 1, mastery goal orientation.* Non-Art Students Posttests/Art Students' Posttests one-way ANOVA data for the Mastery Goal Orientation scale were reported in Table 44. The main effects for the scale were $F(1,593) = .01$, $p = .95$, $\eta^2 = .00$. The one-way ANOVA results for this

scale indicated no significant difference between non-art students' and art students' posttests.

Table 44

Posttest Inferential Statistics for Mastery Goal Orientation

	Sum of squares	*df*	Mean square	*F*	η^2	Sig.
Between groups	0.008	1	0.008	0.005	0	0.945
Within groups	1071.141	593	1.806			
Total	1071.15	594				

Context 1, personal achievement goal orientation/ subscale 2, performance-approach goal orientation. Non-Art Students' Posttests/Art Students' Posttests one-way ANOVA data for the Performance-Approach Goal Orientation scale were reported in Table 45. The main effects for this scale were $F(1,589) = 5.67$, $p = .02$, $\eta^2 = .01$. These findings indicated a significant difference for the non-art participants and demonstrated that the comparison- control group desired to demonstrate their competence to a higher degree in an achievement setting. The minimal effect size was .01%.

Table 45

Posttest Inferential Statistics for Performance-Approach Goal Orientation

	Sum of squares	*df*	Mean square	*F*	η^2	Sig.
Between groups	10.63	1	10.63	5.671	0.01	0.018
Within groups	1103.969	589	1.874			
Total	1114.599	590				

Context 1, personal achievement goal orientation/ subscale 3, performance-avoid goal orientation. Non-Art Students' Posttests/Art Students' Posttests one-way ANOVA data for the Performance-Avoid Goal Orientation scale were reported in Table 46. The main effects for this scale were $F(1,478) = 1.89$, $p = .17$, $\eta^2 = .00$. The one-way ANOVA findings for this scale indicated no significant difference between non-art and art students' posttests.

Table 46

Posttest Inferential Statistics for Performance-Avoid Goal Orientation

	Sum of squares	*df*	Mean square	*F*	η^2	Sig.
Between groups	4.033	1	4.033	1.885	0	0.17
Within groups	1022.767	478	2.14			
Total	1026.8	479				

Context 1, posttest inferential statistics summary

The results of the posttest inferential statistics for two of the three subscales from Context 1: Personal Achievement Goal Orientations revealed no significant difference between the treatment and comparison-control groups. However, the subscale Performance-Approach Goal Orientation results indicated a significant difference for the comparison-control non-art group. Conversely, the effect size was minimal with .01%.

Context 2, perception of classroom goal structures/ subscale 1: classroom mastery goal structure. Non-Art Students' Posttests/Art Students' Posttests one-way ANOVA data for the Classroom Mastery Goal Structure scale were reported in Table 47. The main effects for this scale were $F(1,710) = .29$, $p = .59$, $\eta^2 = .00$. The one-way ANOVA results for this scale indicated no significant difference between the participants' posttests.

Table 47

Posttest Inferential Statistics for Classroom Mastery Goal Structure

	Sum of squares	*df*	Mean square	*F*	η^2	Sig.
Between groups	0.52	1	0.52	0.286	0	0.593
Within groups	1289.092	710	1.816			
Total	1289.612	711				

Context 2, perception of classroom goal structures/ subscale 2, classroom performance-approach goal structure. Non-Art Students' Posttests/Art Students' Posttests one-way ANOVA data for the Classroom Performance-Approach Goal

Structure scale were reported in Table 48. The main effects for this scale were $F(1,356) = 4.81$, $p = .03$, $\eta^2 = .01$. These findings indicated a significant difference for the non-art participants' posttests with a minimal effect size of .01%. These statistics indicated that at the end of the study the non-art students perceived to a higher degree that the purpose of engaging in academic work in the classroom was to demonstrate their competence.

Table 48

Posttest Inferential Statistics for Classroom Performance-Approach Goal Structure

	Sum of squares	*df*	Mean square	*F*	η^2	Sig.
Between groups	7.68	1	7.68	4.807	0.01	0.029
Within groups	568.825	356	1.598			
Total	576.506	357				

Context 2, p*erception of classroom goal structures/* s*ubscale 3, classroom performance-avoid goal structure.* Non-Art Students' Posttests/Art Students' Posttests one-way ANOVA data for the Classroom Performance-Avoid Goal Structure scale were reported in Table 49. The main effects for this scale were $F(1,592) = .73$, $p = .40$, $\eta^2 = .00$ and indicated no significant difference between non-art students' and art students' posttests.

Table 49

Posttest Inferential Statistics for Classroom Performance-Avoid Goal Structure

	Sum of squares	*Df*	Mean square	*F*	η^2	Sig.
Between groups	1.416	1	1.416	0.725	0	0.395
Within groups	1155.603	592	1.952			
Total	1157.019	593				

Context 2, posttest inferential statistics summary. The results of the posttest inferential statistics for two of the subscales from Context 2, Perception of Classroom Goal Structures revealed no significant difference between the treatment group and comparison-control group. One subscale, Classroom Performance-Approach Goal Structure indicated a significant difference for the comparison-control group with a minimal effect size of .01%.

Context 3, academic-related perceptions, beliefs, and strategies/subscale 1, academic efficacy. Non-Art Students Posttests/Art Students' Posttests one-way ANOVA data for the Academic Efficacy scale were reported in Table 50. The main effects for this scale were $F(1,593) = .05$, $p = .83$, $\eta^2 = .00$. The findings for this scale indicated no significant differences between non-art students' posttests and art students' posttests.

Table 50

Posttest Inferential Statistics for Academic Efficacy

	Sum of squares	Df	Mean square	*F*	η^2	Sig.
Between groups	0.081	1	0.081	0.047	0	0.828
Within groups	1015.775	593	1.713			
Total	1015.855	594				

Context 3, academic-related perceptions, beliefs, and strategies/subscale 2, academic press. Non-Art Students Posttests/Art Students' Posttests one-way ANOVA data for the Academic Press scale were reported in Table 51. The main effects for this scale were $F(1,834) = 1.62$, $p = .20$, $\eta^2 = .01$. The statistical results for this scale indicated no significant difference between non-art students' and art students' posttests.

Table 51

Posttest Inferential Statistics for Academic Press

	Sum of squares	*df*	Mean square	*F*	η^2	Sig.
Between groups	2.38	1	2.38	1.616	0.01	0.204
Within groups	1228.448	834	1.473			
Total	1230.828	835				

Context 3, academic-related perceptions, beliefs, and strategies/subscale 3, academic self-handicapping strategies. Non-Art Students' Posttests/Art Students' Posttests one-way ANOVA data for the Academic Self-Handicapping Strategies scale were reported in Table 52. The main effects for this scale were $F(1,718) = 1.65$, $p = .20$,

$\eta^2 = .00$. These statistical results indicated no significant differences between non-art students' and art students' posttests.

Table 52

Posttest Inferential Statistics for Academic Self-Handicapping Strategies

	Sum of squares	*Df*	Mean square	*F*	η^2	Sig.
Between groups	2.222	1	2.222	1.651	0	0.199
Within groups	966.172	718	1.346			
Total	968.394	719				

Context 3, academic-related perceptions, beliefs, and strategies/subscale 4, avoiding novelty. Non-Art Students' Posttests/Art Students' Posttests one-way ANOVA data for the Avoiding Novelty scale were reported in Table 53. The main effects for this scale were $F(1,598) = 1.02$, $p = .31$, $\eta^2 = .00$. These statistical findings indicated no significant difference between non-art students' and art students' posttests.

Table 53

Posttest Inferential Statistics for Avoiding Novelty

	Sum of squares	*df*	Mean square	*F*	η^2	Sig.
Between groups	1.602	1	1.602	1.021	0	0.313
Within groups	938.183	598	1.569			
Total	939.785	599				

Context 3, academic-related perceptions, beliefs, and strategies/subscale 5, cheating behaviors. Non-Art Students' Posttests/Art Students' Posttests one-way

ANOVA data for the Cheating Behavior scale were reported in Table 54. The main effects for this scale were $F(1,358) = 6.37$, $p = .01$, $\eta^2 = .02$. These findings indicated a significant difference for non-art students' posttests with a minimal effect size of .02%. These statistics indicated that at the end of the study the non-art students reported a higher-level usage of cheating in their classes.

Table 54

Posttest Inferential Statistics for Cheating Behaviors

	Sum of squares	*df*	Mean square	*F*	η^2	Sig.
Between groups	9.669	1	9.669	6.367	0.02	0.012
Within groups	543.706	358	1.519			
Total	553.375	359				

Context 3, academic-related perceptions, beliefs, and strategies/subscale 6, disruptive behaviors. Non-Art Students Posttests/Art Students' Posttests one-way ANOVA data for the Disruptive Behaviors scale were reported in Table 55. The main effects for this scale were $F(1,597) = 11.00$, $p = .00$, $\eta^2 = .02$. These findings indicated a significant difference for the non-art students' posttests indicating that at the end of the study these students reported a higher level of engagement in disruptive behaviors in the classroom. The minimal effect size was reported low with .02%.

Table 55

Posttest Inferential Statistics for Disruptive Behaviors

	Sum of squares	*df*	Mean square	*F*	η^2	Sig.
Between groups	17.835	1	17.835	10.999	0.02	0.001
Within groups	967.995	597	1.621			
Total	985.83	598				

Context 3, academic-related perceptions, beliefs, and strategies/subscale 7, self-presentation of low achievement. Non-Art Students' Posttests/Art Students' Posttests one-way ANOVA data for the Self-Presentation of Low Achievement scale were reported in Table 56. The main effects for this scale were $F(1,838) = 3.94$, $p = .05$, $\eta^2 = .05$. These findings indicated the *only* significant difference for art students' posttests with a small effect size of .05%. These statistics reported that at the end of the study the art treatment group demonstrated a higher preference to keep peers from knowing how well they were achieving in school.

Table 56

Posttest Inferential Statistics for Self-Presentation of Low Achievement

	Sum of squares	*df*	Mean square	*F*	η^2	Sig.
Between groups	7.243	1	7.243	3.942	0.05	.o47
Within groups	1539.686	838	1.837			
Total	1546.929	839				

Context 3, academic-*related perceptions, beliefs, and strategies/subscale 8, skepticism about the relevance of school for future success.* Non-Art Students' Posttests/Art Students' Posttests one-way ANOVA data for the Skepticism About the Relevance of School for Future Success scale were reported in Table 57. The main effects for this scale were $F(1,717) = 1.55$, $p = .21$, $\eta^2 = .00$. The results of the findings did not reveal a significant difference for non-art or art students' posttests.

Table 57

Posttest Inferential Statistics for Skepticism About the Relevance of School for Future Success

	Sum of squares	*df*	Mean square	*F*	η^2	Sig.
Between groups	2.353	1	2.353	1.55	0	0.214
Within groups	1088.618	717	1.518			
Total	1090.971	718				

Context 3, posttest inferential statistics summary. The results of the posttest inferential statistics for five of the eight subscales from Context 3: Academic-Related Perceptions, Beliefs and Strategies revealed no significant difference between the treatment group and comparison-control group. Two of the subscales, Cheating Behaviors and Disruptive Behaviors indicated a significant difference for the non-art comparison-control group with a minimal effect size of .02% for each group. One subscale, Self-Presentation of Low Achievement reported a significant difference for the art treatment group with a minimal effect size of .05%.

Posttest inferential statistics summary of findings. An overview of the treatment and comparison-control groups' posttest inferential statistics for the three contexts and related scales are reported in Table 58. These posttest findings revealed that 9 of the 14 scales were not significant. Four of the remaining five scales indicated significant results for the non-art students' posttest scores and one significant finding was reported for the art student treatment group. The effect sizes were minimal with .01% - .02% for the non-art comparison-control group and .05% for the treatment group.

Table 58

Non-Art and Art Students' Posttest Inferential Statistics Overview

PALS scales	Non-art and art inferential posttest results
Mastery goal	Nonsignificant
Performance-approach	Non-art significant
Performance-avoid	Nonsignificant
Classroom mastery goal	Nonsignificant
Classroom performance-approach	Non-art significant
Classroom performance-avoid	Nonsignificant
Academic efficacy	Nonsignificant
Academic press	Nonsignificant
Academic self-handicapping	Nonsignificant
Avoid novelty	Nonsignificant
Cheating behavior	Non-art significant
Disruptive behavior	Non-art significant
Self-presentation of low achievement	Art significant
Relevance of school for future success	Nonsignificant

Conclusion

It was predicted that changes might occur in middle school students' self-efficacy during their art education treatment. The literature review of this study examined Bandura's factors of self-efficacy and related how the elements found in the art education

process could possibly influence its enhancement. Contrary to theoretical expectations of this study, the effects of art education on middle school students' self-efficacy were statistically reported as nonsignificant.

The results of the pretest descriptive statistics and the 95% of confidence intervals of the mean differences for all 14 subscales from the three contexts revealed no significant difference between the treatment group and comparison-control group. Only minimal differences were found between groups for their means, standard deviations, and total scores for all subscales, revealing that both groups were consistent and balanced in their responses and lay within the confidence interval at the beginning of the treatment.

The pretest inferential results revealed that the findings from 9 of the 14 scales were not significant. The scores for the remaining five indicated significant results for the non-art students' pretest scores. All art students' pretest inferential scores specified nonsignificant results. The effect size for all significant findings was minimal with $\eta^2 = .01\% - .02\%$.

The results of the posttest descriptive statistics and the 95% of confidence intervals of the mean differences for all 14 subscales from all three contexts indicated no significant differences between the treatment group and comparison-control group at the completion of the study. Only minimal differences were found between groups for their means, standard deviations, and total scores for all subscales, revealing that for all contexts and subscales both groups were consistent and balanced in their responses and lay within the confidence interval at the end of the treatment.

The results of the posttest inferential statistics for the 14 subscales from all three contexts revealed that 9 of the 14 scales were not significant. Four of the remaining five scales indicated significant results for the non-art students' posttest scores. One significant finding was reported for the art student treatment group. The effect sizes were minimal with η^2 = .01% - .02% for the non-art comparison-control group and a slightly higher effect size of η^2 = .05% for the treatment group.

The findings resulted in accepting the null hypothesis, indicating that there was no relationship between art education and self-efficacy in middle school students. A discussion of these findings and the implications for the present study and future research are presented in the final chapter of this study, chapter 5. The following information is included: a summary of the study; interpretation of the findings; established limitations and recommendations; and a commentary on this study's research design and findings.

CHAPTER 5:

SUMMARY, INTERPRETATION OF THE FINDINGS, LIMITATIONS, RECOMMENDATIONS, AND COMMENTARY

Summary

As a veteran art teacher, this researcher had experienced first-hand the benefits of art education for middle school students. These advantages appeared to be endless and enduring and were also reinforced repeatedly by the reports presented in the literature review of this study. As discussed in this literature review, educational programs, case studies, and extensive reports supported the premise that art education promoted self-awareness (e.g., Eisner, 1972; Lowenfeld, 1975); built self-esteem and improved behavior (e.g., Ezell & Levy, 2003; Skilling & Carstensen, 2003); increased cognitive abilities (e.g., Anderson & Milbrant, 2005; Burton, 2001; Eisner, 1979; Ohler, 2002); elevated learning in other disciplines (e.g., Lowenfeld, 1975; Nickell, 2003; Ohler, 2002); created self-satisfaction (e.g., Wilson, 1998); and enhanced learning in the affective domain (e.g., Bolin, et al., 2005; Liff, 2003; Main, 1992). Together, these documented reports coupled with this researcher's personal art teaching experiences supported the positive contributions that art education made toward the enhancement of student self-efficacy. If these evidenced reports supported the constructive benefits of art education, why then did its documented history continually offer clear accounts of a relentless struggle for inclusion in our schools' curricula?

Stankiewicz (1997) reported that during the late 1800s up until World War I, production in art education classes was essentially used to meet the industrial requests of society. It wasn't until after World War I that art classes began to be considered as a

beneficial component in students' lives, but classes were limited to advancing students' motor control and visual perceptiveness, ignoring the creative qualities of the subject (Clark, 1996). Even through the NCLB Act of 2001, proponents of art education fought to establish its inherent value and sustain its continuance in the curriculum. Confronted by these challenges art education has struggled to gain support of inclusion in our schools. Establishing a research-based justification for valid and motivational art programs was at the heart of this study.

This quantitative true experimental study tested Bandura's self-efficacy theories as they aligned with the constructivist theory by investigating the relationship between art education and the enhancement of self-efficacy in middle school students. Together, these theories advocated that learning was an active process in which learners must be provided with opportunities to interact with sensory data and construct their own meanings (Bandura, 1997; Glasersfeld, 1996; Milbrandt & Anderson, 2005; Sousa, 2001; Vanderstaeten & Biesta, 1998; Vygotski, 1996; Walker, 2002). Within the premises of these conceptual frameworks, active learning as evidenced in art education curriculums spans into larger realities of experience and accomplishment, providing opportunity for promotion of students' beliefs in their capacities. This sense of self-efficacy as defined by Bandura (1997) provides the foundation for motivation, well-being and personal accomplishments in all areas of life. The beliefs students hold about their capacities to succeed become the vital forces that direct their endeavors.

Prior researchers hypothesized that if students experienced the active hands-on elements offered in the art education curriculum, they would then demonstrate more

occurrences of belief in their own capacities to succeed academically (Eisner, 1998; Lowenfeld & Brittain, 1975; Vygotsky, 1971). Such research, however, was limited to studies of elementary and high school students. This study tested a similar hypothesis, namely does art education promote student self-efficacy, but focused that inquiry on middle school students. To test this hypothesis, a quantitative true experimental design: pretest-posttest design was employed and examined 60 seventh- and eighth-grade middle school art students and 60 seventh- and eighth-grade non-art students from central Georgia. A 72-item pretest-posttest measurement scale, the PALS (Midgley et al, 2000), was administered during one 9-week period to a randomly selected treatment group receiving art education and a randomly selected comparison-control group who had never taken middle school art.

The PALS was employed as a general measure of student self-efficacy. Midgley et al. (1998) provided evidence of this instrument's construct validity by examining correlations between scores on their instrument and scores on instruments measuring other closely related constructs. All of the scales used in this report were proven to be internally consistent and valid. The instrument measured self-efficacy in three contexts along with their associated subscales: Context 1, personal achievement goal orientations with three subscales, mastery goal orientation, performance-approach goal orientation, and performance-avoid goal orientation; Context 2, perception of classroom goal structures with three subscales, classroom mastery goal structure, classroom performance-approach goal structure, and classroom performance-avoid goal structure; and Context 3, academic-related perceptions, beliefs, and strategies with eight subscales,

academic efficacy, academic press, academic self-handicapping strategies, avoiding novelty, cheating behavior, disruptive behavior, self-presentation of low achievement, and skepticism about the relevance of school for future success (see Appendix E).

The PALS was intended to develop a profile of the treatment group before the application of art education (pretest) and following the application of art education (posttest). It was also intended to develop a profile of the comparison-control group with no art education at the beginning of the 9 weeks (pretest) and at the end of 9 weeks (posttest). Using SPSS, an analysis of variance (one-way ANOVA) with an alpha level of $P = \leq .05$ was employed to analyze the collected data. This was accomplished by comparing the treatment and comparison-control groups' pretest descriptive and inferential statistical data to their posttest descriptive and inferential statistical data. Accordingly, the descriptive and inferential statistical data were reported for all 14 scales, resulting in 58 tables.

Based on the descriptive and inferential statistical analysis as evidenced in chapter 4, these findings failed to confirm the hypothesis of this study: there is a relationship between art education and self-efficacy in middle school students. Implications of these findings along with explanations of the nonsignificant results are discussed in the following sections.

Interpretation of the Findings

As previously reviewed, the instrument of this study, the PALS, measured self-efficacy in three contexts, including 14 subscales. Presentation of the pretest-posttests descriptive and inferential findings for each context and subscale was detailed in chapter

4, aligned with the specifics of how these data related to students' self-efficacy. Further examination of each context and its subscales was required to interpret the relevance of the findings and to report other emerging phenomenon. This information is presented in the following pages.

Findings from context 1 indicated nonsignificant results on the pretest and posttest inferential data for both the treatment and the comparison-control groups. One exception occurred for the subscale performance-approach goal orientation wherein the non-art students' posttests specified a significant difference. The descriptive mean scores for this context indicated that throughout the study it was slightly true to somewhat true for the students to strive for achievement by attempting to demonstrate competence in their classes. These competence endeavors, when pursued, would be associated with a sense of capacity for achievement and effort (Peterson & Martin, 2004). Other researchers, Harackiewicz (2005) and Dweck & Leggett (1988) reported that the pursuit of these orientations could be conducive to engagement in and enjoyment of learning and would allow an increased sense of efficacy while learning.

Context 1 results revealed the effects of art education to be nonsignificant for enhancing the treatment groups' desires to show competence in their classes while attempting achievement. However, the overall data results of context 1 informed this researcher of an unexpected but significant trend. The data indicated that the levels of self-efficacy had remained low to moderately-low throughout the 9-week pretest-posttest period for the treatment group with a slight increase for the comparison-control group. It was significantly noted that the treatment groups' levels of self-efficacy had remained the

same throughout the study and that the participants' experiences in the art education environment had not enhanced these levels. Additional implications for these findings are discussed later in the chapter under the Emerging Phenomenon section.

The inferential findings for context 2, perception of classroom goal structures with its three subscales, classroom mastery goal structure, classroom performance-approach goal structure, and classroom performance-avoid goal structure reported no significant findings for the treatment group. The data for the comparison-control group reported significance on the posttests for the classroom performance-approach goal structure. These findings indicated that in general, throughout the study, the comparison-control group tended to have somewhat stronger perceptions that the purpose of engaging in academic work in the classroom was to avoid demonstrating incompetence. Notwithstanding, the descriptive mean scores remained equivalent for all three subscales in context 2 for both groups and indicated it to be somewhat true for all participants to desire to engage in academic work in order to develop competence. Importantly, the data from context 2 reiterated once again, that the participants in this study reported that their levels of self-perceptions of competence remained moderately low to low.

The inferential data for context 3, academic-related perceptions, beliefs, and strategies with its eight subscales, academic efficacy, academic press, academic self-handicapping strategies, avoiding novelty, cheating behavior, disruptive behavior, self-presentation of low achievement, and skepticism about the relevance of school for future success reported the first and only significant results for the treatment group. The significant posttest findings for the scale self-presentation of low achievement suggested

that the treatment groups' beliefs in their competence had increased from the beginning of the study and perhaps would guide them to avoid the appearance of low achievement in their classes. These findings, however, were in direct conflict with previous nonsignificant findings reported in the other 13 scales for the treatment group. Additionally, data from contexts 1 and 2 specified that the treatment group did not avoid demonstrating incompetence and therefore, it seemed improbable that significant findings on 1 scale of 14 could be meaningful.

All other significant findings for this context were achieved by the comparison-control group and included pretest significance for subscales, academic self-handicapping, avoiding novelty, self-presentation of low achievement, and skepticism about the relevance of school for future success; and posttest significance for subscales, cheating behavior and disruptive behavior. Unsubstantiated circumstances contributed to the comparison-control groups' reports of competence and high levels of belief in their abilities and consequently prescribed additional research and interpretation, which are discussed later in this chapter.

The descriptive mean scores for context 3 revealed comparable pretest and posttest results for both groups of participants. Three of the eight subscales for context 3 reported somewhat true results. Participants revealed it was somewhat true for them to feel competent to do class work (academic efficacy), somewhat true for them to feel encouraged by teachers to do challenging work (academic press), and somewhat true to blame low classroom performance on outside circumstances rather than lack of ability. The scores for these three subscales reflected that participants specified their self-efficacy

levels for learning or performing achievement tasks to be mediocre. The data from the remaining five scales reported higher levels of positive behaviors and competence. Both groups revealed it was slightly true to not true at all that they would engage in disruptive and cheating behaviors (disruptive behaviors, cheating behaviors), slightly true that they would rather do familiar class work rather than challenging work (avoiding novelty), not true at all that they would not avoid participating in their classes if it meant other students would think they knew a lot (self-presentation of low achievement), and not true at all that they believed doing well in school would not help them achieve a good life and successful career (skepticism about the relevance of school for future success). Students' expressions of more advanced levels of self-efficacy, reported for these five scales, produced rather divergent data as compared to the findings of the previous nine scales.

Earlier, data from context 1 indicated that students felt it to be slightly true to somewhat true that they would strive for achievement in their classes by attempting to demonstrate competence and in context 2 it was noted that both groups agreed it to be somewhat true that they would avoid demonstrating incompetence, all mediocre expressions of self-efficacy. Students reporting higher self-efficacy might be expected to place greater value on what they learn or expect to learn. Values placed on learning predict intentions and decisions about the significance of learning and contribute to a student's capacities to succeed (Wigfield & Eccles, 2002). The mean score findings for these middle school participants did not indicate that they held high intentions and decisions about the significance of learning, which would in turn contribute to their beliefs in their capacities

to be successful. Results of these five scales in context 3 appeared to be contradictory to previous findings.

Emerging Phenomenon

Beyond the noted inconsistencies in the data, the study's outcomes for the inferential and descriptive data produced nonsignificant findings for the hypothesis, reflecting that art education did not affect the enhancement of self-efficacy in middle school students. The descriptive data had, however, produced three vital consistencies: (a) the treatment and comparison-control groups' descriptive mean scores were similar for all scales for both pretests and posttests, (b) these mean scores specified that the majority of the participants' levels of self-efficacy beliefs remained in the low to moderate range, and (3) the standard deviation mean scores for both groups tended to be balanced and consistent. With these reported patterns of similarities emerged new inquiries beyond the art education domain regarding the range of middle school students' levels of self-efficacy. Could it be hypothesized that the data from this study indicated middle school students as a whole did not have high levels of self-efficacy? If so, what adjustments were needed by educators to their present approaches to teaching art and other subjects in order to facilitate the enhancement of students' self-efficacy beliefs? A closer investigation of this emerging phenomenon gave credence to the underlying rationale for the nonsignificant findings of this study. Accordingly, a review of the transitional profiles of middle school students gave insight to the essence of the participants' reported struggles with self-efficacy.

Studies on middle school age students confirm that young adolescents experience uncertainties and conflicts in their daily lives that reflect in their sense of self-efficacy. The developmental transitions of young adolescents are considered overwhelming and include the physical, intellectual, emotional/psychological, moral/ethical, and social domains of their lives. Issues related to these transitions create daily struggles for middle school students and often result in wide ranges of overt behaviors and mood instability which may then produce new-found sensitivity and impulsive actions. Often, middle school students become anxious, doubtful, and confused about their physical and intellectual development, and social relations, which produce intense effects on building their self-efficacy beliefs (Caskey & Anfara, 2007). These developmental changes coupled with periods of transition in middle school create wavering adjustments in young people's competence and efficacy beliefs during adolescence

Researchers documented that young adolescents often experience declines in their competence and efficacy beliefs as they make the transition from elementary school to middle school because of the many modifications in teachers, peers, classes, and grading criteria (Schunk & Pajares, 2002). Peer consciousness and related social involvements become primary for young adolescents and their personal competence perceptions often become more dependent on their relative standing and relationships with peers, rather than on their own experiences in the classroom (Schunk & Meece, 2006). This phenomenon could possibly have explained the mediocre demonstration of competence by the participants of this study and revealed a need for future study by educators and researchers of the middle school population and their self-efficacy beliefs.

The nonsignificant findings also pointed to a lack of correlation between the hands-on approach of the art classroom and students' feelings of self-efficacy. These findings contradicted the literature review's support of Bandura's theories on self-efficacy (the dependant variable of this study) and the elements comprising constructivism as important foundations for this study's hypothesis. In chapter 2 of this study, research on Bandura's (1997) self-efficacy theory claimed that self-efficacy was acquired from four primary sources: actual hands on performances of a task by students themselves, vicarious experiences acquired by being in the presence of someone performing the task, experiencing forms of persuasion or encouragement for having done the task, and physiological reactions (positive) to having performed or attempted the task. Bandura's theories also concurred closely with the premises of the constructivist theory, as discussed in chapter 1.

The constructivist theory as well as Bandura's primary sources for building self-efficacy encompassed the competence building elements present in art education. One of the major theories advocated by both Bandura and constructivism was that learning was an active process in which learners must be provided with opportunities to interact with sensory data through actual hands-on performances, which in turn extended learning (Bandura, 1997; Walker, 2002). Both theories supported the importance of social interactions within the learning environment as an essential part of the learning experience as they contributed fundamentally to individual knowledge construction and enhancement of self-efficacy. Shared meanings developed through vicarious experiences and negotiation in the learning environment, which also led to enhanced knowledge and

competence. These activities took place within a community of practice where students experienced social actions, social interactions, and encouragement (Galsserfeld, 1996; Wachowiak & Clements, 2006). The corresponding elements of these theories are paralleled throughout the study's literature review. Both Bandura's theories and the elements comprising the theories of constructivism appeared to be applicable to building students' self-efficacy in an art education environment. The nonsignificant results of this study contradicted these established theories as substantial premises for the fortification of self-efficacy.

Further contradictions between the findings of the literature review and the statistical findings of this study surfaced during continued interpretation of the data. Endless accounts of the enhancing and beneficial effects of art education were recounted in the extensive reports of educational initiatives, case studies, and documents. It was reported by Eisner (1972) and Lowenfeld (1975) that art education promoted student self awareness by increasing sensitivity beyond the self into the world and its cultural diversity. Ezell and Levy (2003) and Skilling and Carstensen (2003) recounted the effects of art education on students' levels of self-efficacy with resulting improved behavior. It was related by prominent educational theorists and leaders, Anderson and Milbrant (2005), Burton (2001), and Eisner (1979), that art education increased cognitive abilities and heightened thinking, feeling, and sensing capabilities. Improved sensitivity and learning in the affective domain was reported by Bolin et al. (2005), Liff (2003), and Main (1992). Widespread reports indicated that experiences in art education elevated learning and facilitated improvement of literacy in other disciplines (Ernst, 1998; Lord &

Robinson, 2005; King & Zimmerman, 1999; Nickell, 2003; Ohler, 2000; and Sousa, 2001). Finally, the literature review revealed that art education helped foster pleasure and self-satisfaction for students (Corbett et al., 2004 and Wilson, 1998). These reports provided remarkably clear guidance as to the highly effective contributions of art education for student achievement and the possible link between participation in art education and the enhancement of student self-efficacy. Although details about the benefits of art education from the research were clear, disagreement between the actual nonsignificant findings of this study and the positive reports of the literature were unmistakable and created new query. These discrepant patterns were potentially interesting and revealing. They called for a more careful examination of the findings and the program theory and suggested the need for further investigations.

While reanalyzing the literature, it became apparent that the populations/participants reported in these studies fell into one of two categories: either they were described generally, as students or participants or they were described in more specific terms as elementary school or high school students. All the findings applied to either younger or older students or non-determined age groups, but for some reason, the middle school population seemed to be an exception and was not included specifically in the reported theories or outcomes. Specifically, the aforementioned reports made by Ezell & Levy (2003); King & Zimmerman (1999); Lord & Robinson (2005); Lowenfeld (1975); Ohler (2000); and Skilling & Carstensen (2003) described having utilized high school age participants in their studies. While the studies by Eisner (1979); Ernst (1998); and Nickell

(2003) included only elementary school age participants. One study, Burton (2001), included only university students.

Initially, this researcher believed that art education research on students generally would serve as adequate evidence for the hypothesis of this study. However, considering the inconsistencies found between the reported literature and the nonsignificant findings of this study, it was realized that the picture of art education and its effects on students' self-efficacy could possibly change, if reports using middle school participants had been available and employed.

Emerging theories of this study's nonsignificant findings have been detailed in the previous paragraphs. Understandably, they offer some intent and explanation of the findings. However, one additional conjecture for the no effects results significantly impacted this researcher. When this researcher began teaching middle school art fifteen years ago, she planned, organized, and implemented an annual school-wide arts festival. A majority of academic classroom teachers contributed meaningful student art projects for exhibition. These works of art included paintings, posters, booklets, dioramas, 3-D sculptures, weavings, architectural designs, and mobiles—all projects assigned to teach and enrich the elements of their varied curriculums. These works of art filled over 20 cafeteria tables and flowed into the hallways. During the festival, students stood beside their projects, explained the significance of their work, and related the details of their designs and creations.

Throughout the years, these integrated art projects began to dwindle until in recent years no art projects from any class except the visual art classes were available to

be displayed at the annual arts festival. Teachers from the research site reported that their new curriculums were more intense and totally directed towards teaching materials that would produce higher scores on standardized tests.

> We (the teachers) all know the Criterion Reference Competency Test (CRCT) scores will be a reflection on our teaching abilities, even more than they will be on the students' abilities. Let's face it, these test scores are printed in the local newspapers and on the Internet for the world to view. The new curriculum has such rigor; it leaves no time for error or for the 'once upon a time' enrichment activities. There is an additional and tremendous pressure, which is to teach as much of the standards as possible by March or April, before the test. If we want our students to perform at their best, then we have to follow the curriculum guides, never veering from them. Are we robbing our students of art and other culturally enriching experiences? I know the answer—it is yes! (J. Watts, personal communication, November 10, 2008)

The absence of art in this researcher's school was not only noted at the arts festival but the hallway bulletin boards and display areas for classroom work were conspicuously barren. Could the narrowing opportunities for art across the curriculum partly be responsible for the nonsignificant results of this study? Could the lack of art opportunities in the participants' academic classes be sending messages that art is something extra and not a substantial component that supported their learning and gave opportunities for expression of what had been learned (Gardner, 1990; Wachowiak & Clements, 2006)? If these alternative factors could be considered as contributing forces to the nonsignificant findings of this study, then it may also be applicable to consider that the participants did not conceive that an instrument measuring the effects of art education was worthy of their valid and meaningful responses. This may account for the minimal changes in pretest and posttest scores between and among the treatment and comparison-

control groups. Educators and theorists in evaluating the essence of the nonsignificant findings of this study must consider these queries.

Limitations

In the face of the no-effects findings of this study, a careful examination was warranted to make sense of these findings and to understand which alternative explanations were most likely. During assessment, several factors surfaced as possible contributing sources to the nonsignificant results. One limitation was the utilization of the quantitative research approach. Concerned that statistical analysis may produce limited findings, this researcher initially had misgivings about using the quantitative method. However, in spite of these uncertainties, the cause-and-effect thinking, reduction of the research problem to specific variables, hypotheses, and questions along with collection of data on a predetermined measurement scale were elements of the quantitative approach that met the needs of this researcher. Additionally, the quantitative approach with its explicit methods for collecting and reporting data was highly supported and used in the field of education by researchers, educators, and policy makers. With use of the quantitative approach, a pathway was opened to select the true experiment design. This design with its pretest-posttest elements supported a treatment planned by the researcher (art education) with participants assigned randomly to different treatment groups—non-art students and art students. According to the quantitative research design described by Dooley (2001), the pretest-posttest control-group design provided an effective format to test the relationship between art education and self-efficacy of middle school students. Another encouraging strength of this design was that it controlled such common threats

to internal validity as history and maturation by testing the comparison-control group and the treatment group simultaneously. Additionally, the framework of this design supported the feasible collection of data that met time and space constraints of the research site. Despite the qualifying aspects of the quantitative approach and true experimental design, this researcher still questioned whether the data collection tool, a measurement scale, would adequately assess the effects of art education on middle school students' self-efficacy. Would the tightly controlled statistical analysis processes of quantitative research limit the collection of meaningful data? With continued support and direction from her mentors, this researcher implemented the quantitative approach.

The nonsignificant results of this art education study were contradicted by the more noteworthy findings from other recent art education research. The choice of the research approach appeared to be a central difference between the significant and nonsignificant outcomes of these studies. The studies producing significant results employed alternative approaches; they had used qualitative or mixed method research to test their hypotheses. The use of these other methods, notwithstanding the art education inquiry, achieved significant findings.

One of these studies, as reported by Pullman, (2007) centered on in-depth interviews with students, parents, teachers, and school staff to gather data. Additional data collection processes included observation of students' behaviors during art class and assessments of their documents and art work. The outcome reported that the participants in this study perceived art as a distinct and highly valued school subject. The significant findings

suggested that art education recognized a natural mode of self-expression for children, fostered self-esteem, and expanded avenues for achievement.

Another study conducted by Nederu (2005) reported significant findings for students' increased critical thinking skills, enhanced creative abilities, and enhanced learning and performance goals as a result of their experiences in an art education environment. The data collection tools employed qualitative measures which included personal interviews and observations.

The researchers of these studies were able to collect levels of detailed data about their participants and to be highly involved in the actual experiences of the participants not afforded by the quantitative approach. Beyond the elements of the quantitative design, the qualitative/mixed method research designs used multiple methods that were interactive and humanistic (Creswell, 2003). In some research arenas like art education, the added sensitivity and emergent qualities of qualitative/mixed method designs allowed for more representative and authentic results rather than the tightly prefigured results of the statistically focused quantitative methods. Conceivably adding elements of qualitative research would have diminished the limitations on data collection and possibly altered the nonsignificant results of this study. It is interesting and important to note at this point, that Bandura (1995) as well as other self-efficacy theorists advocated that "quantitative efforts should be complemented by qualitative studies when exploring how efficacy beliefs are developed and how students perceive that these beliefs influence their academic attainments and the academic choices that they make" (Pajares, 1996, p.345).

The second factor reviewed for its limiting effects on this study's significance, was the internal validity of its instrument, the PALS. Ever since self-efficacy was defined in the late 1970s, many instruments were developed to measure the construct. Some of these instruments were designed to measure self-efficacy generally while others were designed for administration in domain-specific settings and intellectual contexts. Midgley et al. (2000) developed a general measure of self-efficacy, the PALS, for administration to K - 12 students which was employed in this study. The instrument items were written generically, "I am certain I can master the skills taught in my classes this year," rather than domain specific, "I am certain I can master the skills taught in my art class this year." Midgley et al (1998) provided evidence of this instrument's construct validity by extensively examining correlations between scores on the PALS instrument and scores on instruments measuring other closely related constructs. According to the reports published on PALS research, the instrument's 14 scales which were used to test self-efficacy generally have been proven to be internally consistent and valid.

Conversely, Bandura (1986, 1997) and others (Pajares, 1996) have argued that to measure self-efficacy generally was not sufficient and that it should be measured in a context-specific way. Bandura suggested that instruments created to measure self-efficacy should be designed as specific to the task being performed as possible. While some researchers have disagreed with this (Zimmerman, 1995), Bandura (1997) and Pajares (1995) reported that the strength of the relationship between self-efficacy and performance appeared to weaken when more global instruments were used to measure it. An obvious disagreement existed between the effectiveness of instruments that measured

self-efficacy with generally worded items compared to those constructed with domain specific items. Dooley (2001) explained that content validity of a measurement should be assessed by judging how representative the questions are of the domain being tested. Albeit the PALS has been proven to be a reliable and valid measurement of students' self-efficacy in other studies, the generally constructed items on the measurement may have contributed to poor internal validity in this study by not taking into account the domain specific facets of art education.

In addition to the inclusion of domain specific items on a measurement, it was suggested by Bandura (1997) that researchers use items with assessment formats that range from 0-100 to provide the greatest predictive utility. "Including too few steps loses differentiating information because people who use the same response category would differ if intermediate steps were included" (p. 4). The PALS instrument used a Likert response format that ranged from 1-5, which according to Bandura was "less sensitive and less reliable" (p. 4).

Other limitations relating to this study included a number of probable confounding or spurious variables. These uncontrolled variables were not actually measured or accounted for during this study but according to Creswell (2003) because they may have operated to explain the relationship between the independent variable and dependent variable, considerations should be given to their possible effects on the findings. For this study, some of the uncontrolled variables included:

1. Race, gender, and ethnicity: Because strong differences possibly exist in academic settings among race and gender, the variable of race, gender, and ethnicity

should be included in the data collection process and analysis (Johnson, 2002; Midgley & Maehr, 1998).

2. Family background: Administration of the measurement should include questions about the participants' backgrounds. Extensive research found that participants who live with both parents and whose parents had higher education attainment showed increased scores (Johnson, 2002).

3. Free/reduced-price lunch participation: Income is often a key predictor of test achievement because low–income families seldom have the resources to purchase extra study materials, in this case art supplies, books, extra art classes, or trips to museums, that may help their children perform better in school and art classes (Johnson, 2002). The bookkeeper at this study's middle school site reported that 34% of the students participate in the free/reduced-price lunch programs.

4. Test setting: It was advocated by the authors of the PALS survey that the testing conditions be kept as close as possible to the students' natural learning environments (Midgely, 2000). The treatment group was tested in their regular art education classroom. The scale administrator of this study reported that the treatment group, even though they had previously consented to participate, complained about postponing their art projects in order to complete the items on the instrument. The measurement scale took two class periods each for pretests and posttests. The comparison-control participants were released from their academic classes in order to take the measurement scale in the media center. Perhaps this favored released time created more of a positive attitude towards completing the measurement. This may have

accounted for the comparison-control groups' slightly increased pretest-posttest scores as compared to the treatment groups' scores. Furthermore, Braverman, Constantine and Slater (2004) reported that multiple waves of data collections over time might create problems and contribute to no effect findings. Four different data collection times over a 9-week period were required to complete the PALS for each group.

5. Art education curriculum: Nonsignificant posttest scores for the treatment group could have been affected by the art curriculum activities and projects at the time of data collection. This researcher has experienced that some art media like clay and paint are more favorable to middle school students than pen and pencil. Variations in the curriculum activities and their implementation could have influenced test results.

Implementation of the art education program curriculum or the basic program theory itself may have lacked sufficient understanding of the critical processes and led to an emphasis on the wrong kind of program activities for the enhancement of students' self-efficacy (Braverman et al., (2004). These elements must be considered and reviewed when assessing the nonsignificant findings.

6. Sample size: Attention to the sample size of this study and its effects on statistical significance should be reviewed. Using the sample size and confidence interval calculator (Pearson Assessments) for 5% error rate, 95% confidence level, and the available population size (number of seventh- and eighth-grade students at this middle school) of 178, the ideal sample size for this study was determined to be 120 participants. Dividing the treatment and comparison-control groups equally gave each group 60 participants. A statistician, T. V. Macfarlane (2003), reported that small sample sizes

reduced the power of a study and that larger sample sizes assured more statistical significance between the two groups.

Dooley (2001) additionally indicated that one approach to setting effective sample sizes was to reference earlier surveys of a similar kind. Other PALS research included much larger sample sizes. One such study by Midgley & Maehr (1998) included participants from 21 elementary schools and 10 middle schools. Another study conducted by researcher Ketelhut (2005) employed 2000 students while the study performed by Woodrow and Chapman (2002) used 275 participants. The results of these studies employing larger samples were found to be significant.

The comprehensive review of this study's limitations revealed gaps in the research that would require necessary adjustments to the methodology so that an improved version could be tested. The aforesaid limitations informed this researcher as well as other educational investigator as to specific research factors that could potentially weaken a study. Future art education inquiry could profit from a review of these limitations and their numerous implications for continued research.

Recommendations for Future Research and Social Change

Recommendations for continued research are detailed in the following areas: (a) use of qualitative/mixed methods research designs in assessing the relationship between art (as opposed to academic) education and student self-efficacy; (b) exploration of domain-specific instruments in evaluating the relationship between art education and self-efficacy; (c) implementation of valid research and assessment of the factors in efficacy beliefs in middle school students including the relevance and effects of these beliefs in

teachers and families; and (d) assessment and inclusion of uncontrolled variables: participant race, gender, ethnicity, family background, family income, art education curriculum, and sample size as a means of increasing the test validity.

The first recommendation for future research entails collecting meaningful data that could be used to examine the relationship between art education and student self-efficacy and whether it does or does not promote self-efficacy beliefs. This would, as Bandura (1997) suggested, require going beyond the tightly prefigured data results of quantitative methods to include qualitative methods or mixed method research strategies. The implementation of interviews, observations, and documents collected during the qualitative/mixed method research would add sensitivity as well as allow for more representative and authentic results rather than the controlled statistical outcomes of quantitative methods.

Currently there are no art education context-specific instruments available for measuring self-efficacy in middle school students (Ketelhut, 2005). Consequently, the second recommendation for future research is the development of an instrument to measure self-efficacy in art education, using items as specific as possible to the tasks performed in the art classroom. Content validity of self-efficacy measurements is influenced by how representative the questions are of the domain being tested (Dooley (2001). Additionally, future research on self-efficacy might benefit from the development of instruments that employ multiple levels of answers varying from 0-100 (Bandura, 1997). It is suggested that these instruments be used as part of a mixed-methods approach, rather than solely a quantitative approach.

A third recommendation for future research is to investigate the causes of the low to mediocre levels of efficacy beliefs in middle school students as indicated by this study. It is proposed that this investigation be extended to encompass the influences of teachers' as well as families' levels of self-efficacy. Upon examining the causes for mediocre levels of self-efficacy, researchers may then make recommendations to promote a sense of efficacy and provide guidelines for structuring learning experiences that enable middle school students to achieve personal and social success. Caskey and Anfara (2007), for instance, recommended that the following courses of action be employed (a) Teachers need to arrange young adolescent's participation in an array of hands-on learning experiences, minimizing situations that promote competition and possible comparison between early-and-late maturing youth; and (b) teachers need to provide a wide variety of educational approaches and materials that are appropriate for their students' varied cognitive abilities. Scales (2003) opined that curricula should be planned around real-world concepts that supplied authentic educational activities that are meaningful for young adolescents. Kellough and Kellough (2008) reported that young adolescents need environments that are free from harsh criticism, humiliation, sarcasm, and instead, offered positive encouragement and reinforcement of performance tasks. According to Scales (2003), teachers also need to develop cooperative learning activities and collaborative experiences in which students can interact productively with peers and learn while experiencing first-hand the work of other students. Using these researched recommendations, teachers can structure curricular and social experiences to support the development of adolescents' self-efficacy.

As valuable as implementing positive learning experiences to enhance student self-efficacy, it is additionally recommended that research be conducted on teachers' levels of efficacy. Extended research relating the processes through which efficacy beliefs influence teachers' decisions and actions and their effects on student learning should also be initiated.

In addition to these insights and improved professional practices, it is recommended that an extended inquiry into parental and community influences on students' self-efficacy beliefs be conducted. "One or both of these two groups is identified in most attempts to synthesize the research on effective schooling" (Marzano, 2003, p. 47). Based on the evidence collected, self-efficacy researchers Capara, Scabini and Regalia (2006) contended that self-efficacy beliefs depended largely on parent-child relationships. "It is unlikely that children will develop and maintain strong self-efficacy beliefs if these beliefs are not supported at home" (p.110).There are rising demands for parent training and parent education programs to provide guidelines for the enhancement of self-efficacy levels in adolescents. It is recommended that school districts focus on creating parenting programs that will teach and develop the skills to help manage the challenges of raising children through adolescence. It has been noted by authorities that despite the need, there are fewer programs specifically designed for parents of adolescents (Capara et al., 2006). More work needs to done in this direction and programs for parents of adolescents should aim to improve parents' sense of efficacy as well.

Under the final recommendation, this study places together a collection of probable confounding or spurious variables that were not actually measured or accounted for during the study. First, strong differences possibly existed in research settings among race, gender, ethnicity, family background, education and income. Because these were key predictors of test achievement, this study recommends that these qualities be included in data collection process and analysis.

Secondly, following the nonsignificant findings of the art education treatment, it is recommended that a comprehensive review of the art program theory be conducted. An evaluation of art program theory should include an appraisal of state and regional core curriculum imperatives, teaching strategies, instructional-media learning tools, assessment, and classroom management.

Additionally, an examination of the art program theory needs to include an exploration of the outcomes of limited art programs on student achievement and self-efficacy. Within most middle schools, such as the one in which this study was conducted, art education is limited to one 9-week session each year. A viable curriculum is unattainable without the benefit of time. The allotment of 9-week classes equated to 45 hours of art instruction. However, not all of the available classroom time was actually used for instruction. Classroom interruptions occurred often during the fine arts classes to meet non-instructional activities of the school, such as year book photos, sports and cultural events, and testing for other classes, Marzano (2003) expressed that the "opportunity to learn has the strongest relationship with student achievement of all school-level factors" (p. 22). Perhaps a possible discrepancy between the intended art

education curriculum and the implemented curriculum existed because of the limited instructional time frame, creating a learning gap for art students. A qualitative/ mixed methods investigation comparing student achievement scores and levels of self-efficacy in schools where art classes, activities, and events were an integral part of the school-wide curriculum compared to schools with limited or diminished art experiences could generate data that would serve as a gauge to assess the effects of art education on student achievement and self-efficacy. Full investigation could inform educators in making necessary adjustments to the art program, its delivery, or its evolutions so that an improved version could be tested.

Finally, to explore the relationship between art education and student self-efficacy, selecting an effective sample size is vital. The present study included 60 treatment and 60 comparison-control participants. Research has indicated that a small sample size as used in this study can reduce the power of a study. Dooley (2001) and Macfarlane (2003) recommended that to obtain effective research results, studies should include larger sample sizes, which for this study would have included additional middle school populations to assure more statistical significance between the treatment and comparison-control groups.

Commentary

Previous research distinguished art education as a valid contributor to student success (Anderson & Milbrant, 2005; Burton, 2001; Corbett et al., 2004; Eisner, 1972; Ezell & Levy, 2003; Liff, 2003; Lowenfeld, 1975; Nickell, 2003; Skilling & Carstensen, 2003). These reports provided remarkably clear guidance as to the highly effective

contributions of art education to student achievement and that enhancement of self-efficacy was a contingent factor in the multidimensional constructs of art education. Regrettably, the results of this true experimental study did not substantiate the significant findings in these reports.

The data from this study, however, led to emerging trends for future art education research. Modifications to the present research design, as suggested in the recommendations section of this chapter, could prove to be beneficial and contribute to art education research in several ways: (a) contributing a greater knowledge base for the support of art education and its continuance in our schools by our policy makers, (b) producing new data that supported the use of art education as a means of enhancing middle school students' self-efficacy, and (c) creating new and meaningful query for sustained and continuous art education research.

Specifically, future art education research requires the investigation of a more specific research instrument, designed to measure self-efficacy within an art-based learning environment. Working with the PALS research team to focus on a context-specific measurement for art education would be beneficial, supportive, and expectantly produce more meaningful and significant results for art education and self-efficacy research. The new data would in theory result in convincing educators and researchers to move more deeply into the constructs of art education to understand and utilize the possibilities of its inherent benefits, its cultural and social significance, and its enhancement of students' beliefs in their capabilities to achieve.

Additionally, this study provides pathways for facilitating social change by driving the development of (a) programs that focus on the assessment of middle school students' self-efficacy beliefs beyond the art classroom, (b) guidelines for art and other curricular programs and social experiences that support the development of adolescents' self-efficacy, and (c) future studies and instruments to investigate self-efficacy and inform researchers and educators of improved procedures for building students' self-efficacy beliefs.

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APPENDIX A:

SCALE ADMINISTRATOR'S SCRIPT

Greeting:

Hello Students,
I work for our County Board of Education as an educational consultant. I work at all of the schools throughout Fayette County. Today, I am helping Ms. Mitchell with her research by giving this survey to you. You and your parents have returned the signed forms to me stating that you agree to participate in this study.
This survey is not a test and there is no right or wrong answers. The right answer is the answer that is most true for you. Please tell us how true each of the following ideas are for you. Your parents and teachers will NOT see what you say.

Directions:
Here are some questions about you as a middle school student in your classes. Please bubble in the letter on the answer sheet that best describes what you think. Use a number two pencil. Let us look together at the sample question at the beginning of the survey.

"I like strawberry ice cream."

A	**B**	**C**	**D**	**E**
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

Now decide, which answer tells how true this statement is of you, A, B, C, D, or E?
Do you have any questions before we begin? If you do not complete the survey today, you will have additional time during your next art class (treatment group) PAWS session (control group).

Thank you. You may begin.

APPENDIX B:

CONFIDENTIALTIY AGREEMENT

Name of Signer

During the course of my activity in collecting data for this research: The Effects of Art Education on Self-Efficacy in Middle School Students. I will have access to information, which is confidential and should not be disclosed. I acknowledge that the information must remain confidential, and that improper disclosure of confidential information can be damaging to the participant.

By signing this Confidentiality Agreement I acknowledge and agree that:

1. I will not disclose or discuss any confidential information with others, including friends or family.
2. I will not in any way divulge, copy, release, sell, loan, alter or destroy any confidential information except as properly authorized.
3. I will not discuss confidential information where others can overhear the conversation. I understand that it is not acceptable to discuss confidential information even if the participant's name is not used.
4. I will not make any unauthorized transmissions, inquiries, modification or purging of confidential information.
5. I agree that my obligations under this agreement will continue after termination of the job that I will perform.
6. I understand that violation of this agreement will have legal implications.
7. I will only access or use systems or devices I'm officially authorized to access and I will not demonstrate the operation or function of systems or devices to unauthorized individuals.

Signing this document, I acknowledge that I have read the agreement and I agree to comply with all the terms and conditions stated above.

Signature:

APPENDIX C:

CONFIDENTIALTIY AGREEMENT

Name of Signer:

During the course of my activity in collecting data for this research: "The Effects of Art Education on Self-Efficacy in Middle School Students" I will have access to information, which is confidential and should not be disclosed. I acknowledge that the information must remain confidential, and that improper disclosure of confidential information can be damaging to the participant.

By signing this Confidentiality Agreement, I acknowledge and agree that:

8. I will not disclose or discuss any confidential information with others, including friends or family.
9. I will not in any way divulge, copy, release, sell, loan, alter or destroy any confidential information except as properly authorized.
10. I will not discuss confidential information where others can overhear the conversation. I understand that it is not acceptable to discuss confidential information even if the participant's name is not used.
11. I will not make any unauthorized transmissions, inquiries, modification or purging of confidential information.
12. I agree that my obligations under this agreement will continue after termination of the job that I will perform.
13. I understand that violation of this agreement will have legal implications.
14. I will only access or use systems or devices I am officially authorized to access and I will not demonstrate the operation or function of systems or devices to unauthorized individuals.

Signing this document, I acknowledge that I have read the agreement and I agree to comply with all the terms and conditions stated above.

Signature

APPENDIX: D

PATTERNS OF ADAPTIVE LEARNING SCALES

Example question:

I like strawberry ice cream.

A	**B**	**C**	**D**	**E**
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

Here are some questions about you as a middle school student in your classes. Please fill in the letter on the answer sheet that best describes what you think. Use a number two pencil.

1. I'm certain I can master the skills taught in my classes this year.

A	**B**	**C**	**D**	**E**
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

2. I would avoid participating in my classes if it meant that other students would think I know a lot.

A	**B**	**C**	**D**	**E**
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

3. It's important to me that I don't look stupid in my classes.

A	**B**	**C**	**D**	**E**
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

4. Even if I do well in school, it will not help me have the kind of life I want when I grow up.

A	**B**	**C**	**D**	**E**
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

5. If other students found out I did well on a test or a class project, I would tell them it was just luck even if that wasn't the case.

A	**B**	**C**	**D**	**E**
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

6. When I've figure out how to do a problem, my teachers give me more challenging problems to think about.

A	**B**	**C**	**D**	**E**
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

7. I would prefer to do class work that is familiar to me, rather than work I would have to learn how to do.

A	B	C	D	E
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

8. It is important to me that other students in my classes think I am good at my class work.

A	B	C	D	E
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

9. It is important to me that I learn a lot of new concepts this year.

A	B	C	D	E
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

10. My teacher presses me to do thoughtful work.

A	B	C	D	E
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

11. I'm certain I can figure out how to do the most difficult class work.

A	B	C	D	E
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

12. Some students fool around the night before a test. Then if they don't do well, they can say that is the reason. How true is this of you?

A	B	C	D	E
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

13. My chances of succeeding later in life don't depend on doing well in school.

A	B	C	D	E
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

14. I sometimes annoy my teachers during my classes.

A	B	C	D	E
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

15. My teacher asks me to explain how I get my answers.

A	B	C	D	E
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

16. Some students purposely get involved in lots of activities. Then if they don't do well on their class work, they can say it is because they were involved with other things. How true is this of you?

A	**B**	**C**	**D**	**E**
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

17. When I'm working out a problem, my teachers tell me to keep thinking until I really understand.

A	**B**	**C**	**D**	**E**
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

18. Some students look for reasons to keep them from studying (not feeling well, having to help their parents, taking care of a brother or sister, etc.). Then if they don't do well on their class work, they can say this is the reason. How true is this of you?

A	**B**	**C**	**D**	**E**
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

19. My teachers don't let me do just easy work, but make me think.

A	**B**	**C**	**D**	**E**
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

20. I don't like to learn a lot of new concepts in my classes.

A	**B**	**C**	**D**	**E**
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

21. I wouldn't volunteer to answer questions in my classes if I thought other students would think I was smart.

A	**B**	**C**	**D**	**E**
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

22. I sometimes copy answers from other students during tests.

A	**B**	**C**	**D**	**E**
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

23. I prefer to do work as I have always done it, rather than trying something new.

A	**B**	**C**	**D**	**E**
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

24. If I did well on school assignments, I wouldn't want other students to see my grades.

A	**B**	**C**	**D**	**E**
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

25. One of my goals in my classes is to learn as much as I can.

A	B	C	D	E
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

26. One of my goals is to show others that I'm good at my class work.

A	B	C	D	E
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

27. It is very important to me that I don't look smarter than others in my classes.

A	B	C	D	E
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

28. Doing well in school doesn't improve my chances of having a good life when I grow up.

A	B	C	D	E
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

29. One of my goals is to master a lot of new skills this year.

A	B	C	D	E
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

30. I sometimes get into trouble with my teachers during my classes.

A	B	C	D	E
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

31. I sometimes cheat on my class work.

A	B	C	D	E
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

32. Getting good grades in school won't guarantee that I will get a good job when I grow up.

A	B	C	D	E
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

33. One of my goals is to keep others from thinking I'm not smart in my classes.

A	B	C	D	E
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

34. I sometimes behave in a way during my classes that annoys my teachers.

A	B	C	D	E
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

35. I like academic concepts that are familiar to me, rather than those I haven't thought about before.

A	B	C	D	E
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

36. Even if I am successful in school, it won't help me fulfill my dreams.

A	B	C	D	E
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

37. If I were good at my class work, I would try to do my work in a way that didn't show it.

A	B	C	D	E
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

38. It's important to me that I thoroughly understand my class work.

A	B	C	D	E
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

39. I sometimes copy answers from other students when I do my class work.

A	B	C	D	E
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

40. I would choose class work I knew I could do, rather than work I haven't done before.

A	B	C	D	E
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

41. One of my goals is to show others that class work is easy for me.

A	B	C	D	E
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

42. Some students let their friends keep them from paying attention in class or from doing their homework. Then if they don't do well, they can say their friends kept them from working. How true is this of you?

A	B	C	D	E
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

43. Doing well in school won't help me have a satisfying career when I grown up.

A	B	C	D	E
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

44. Some students purposely don't try hard in class. Then if they don't do well, they can say it is because they didn't try. How true is this of you?

A	B	C	D	E

NOT AT ALL TRUE SOMEWHAT TRUE VERY TRUE

45. One of my goals is to look smart in comparison to the other students in my classes.

A **B** **C** **D** **E**

NOT AT ALL TRUE SOMEWHAT TRUE VERY TRUE

46. One of my goals in my classes is to avoid looking smarter than other kids.

A **B** **C** **D** **E**

NOT AT ALL TRUE SOMEWHAT TRUE VERY TRUE

47. Some students put off doing their class work until the last minute. Then if they don't do well on their work, they can say that is the reason. How true is this of you?

A **B** **C** **D** **E**

NOT AT ALL TRUE SOMEWHAT TRUE VERY TRUE

48. It's important to me that I look smart compared to others in my classes.

A **B** **C** **D** **E**

NOT AT ALL TRUE SOMEWHAT TRUE VERY TRUE

49. It's important to me that I improve my skills this year.

A **B** **C** **D** **E**

NOT AT ALL TRUE SOMEWHAT TRUE VERY TRUE

50. I sometimes don't follow my teachers' directions during my classes.

A **B** **C** **D** **E**

NOT AT ALL TRUE SOMEWHAT TRUE VERY TRUE

51. It's important to me that my teachers don't think that I know less than others in my classes.

A **B** **C** **D** **E**

NOT AT ALL TRUE SOMEWHAT TRUE VERY TRUE

52. I can do almost all the work in my classes if I don't give up.

A **B** **C** **D** **E**

NOT AT ALL TRUE SOMEWHAT TRUE VERY TRUE

53. My teachers make sure that the work I do really makes me think.

A **B** **C** **D** **E**

NOT AT ALL TRUE SOMEWHAT TRUE VERY TRUE

54. I sometimes disturb the lessons that are going on in my classes.

A **B** **C** **D** **E**

NOT AT ALL TRUE SOMEWHAT TRUE VERY TRUE

55. One of my goals in my classes is to avoid looking like I have trouble doing the work.

A **B** **C** **D** **E**

NOT AT ALL TRUE SOMEWHAT TRUE VERY TRUE

56. Even if the work is hard, I can learn it.

A **B** **C** **D** **E**

NOT AT ALL TRUE SOMEWHAT TRUE VERY TRUE

57. My teachers accept nothing less than my full effort.

A **B** **C** **D** **E**

NOT AT ALL TRUE SOMEWHAT TRUE VERY TRUE

58. I can do even the hardest work in my classes if I try.

A **B** **C** **D** **E**

NOT AT ALL TRUE SOMEWHAT TRUE VERY TRUE

59. In my classes, trying hard is very important.

A **B** **C** **D** **E**

NOT AT ALL TRUE SOMEWHAT TRUE VERY TRUE

60. In my classes, showing others that I am not bad at class work is really important.

A **B** **C** **D** **E**

NOT AT ALL TRUE SOMEWHAT TRUE VERY TRUE

61. In my classes, how much you improve is really important.

A **B** **C** **D** **E**

NOT AT ALL TRUE SOMEWHAT TRUE VERY TRUE

62. In my classes, getting good grades is the main goal.

A **B** **C** **D** **E**

NOT AT ALL TRUE SOMEWHAT TRUE VERY TRUE

63. In my classes, really understanding the materials is the main goals.

A **B** **C** **D** **E**

NOT AT ALL TRUE SOMEWHAT TRUE VERY TRUE

64. In my classes, getting right answers is very important.

A **B** **C** **D** **E**

NOT AT ALL TRUE SOMEWHAT TRUE VERY TRUE

65. In my classes, it's important that you don't make mistakes in front of everyone.

A	**B**	**C**	**D**	**E**
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

66. In my classes, it's important to understand the work, not just memorize it.

A	**B**	**C**	**D**	**E**
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

67. In my classes, it's important not to do worse than other students.

A	**B**	**C**	**D**	**E**
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

68. In my classes, learning new ideas and concepts is very important.

A	**B**	**C**	**D**	**E**
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

69. In my classes, it's very important not to look dumb.

A	**B**	**C**	**D**	**E**
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

70. In my classes, it's OK to make mistakes as long as you are learning.

A	**B**	**C**	**D**	**E**
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

71. In my classes, it's important to get high scores on tests.

A	**B**	**C**	**D**	**E**
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

72. In my classes, one of the main goals is to avoid looking like you can't do the work.

A	**B**	**C**	**D**	**E**
NOT AT ALL TRUE		SOMEWHAT TRUE		VERY TRUE

THANK YOU FOR VOLUNTEERING TO TAKE THIS SURVEY

APPENDIX E:

SCALES INCLUDED IN THE PATTERNS OF ADAPTIVE LEARNING SCALES

Scale	Description	Items	Reliability
Personal Achievement Goal Orientation			
Mastery Goal Orientation	This scale refers to students' purpose or goal in an achievement setting is to develop their competence	5	0.85
Performance-Approach Goal Orientation	This scale refers to students' purpose or goal in an achievement setting is to demonstrate their competence.	5	0.89
Performance-Avoid Goal Orientation	This scale refers to students' purpose or goal in an achievement setting is to avoid the demonstration incompetence.	4	0.74
Perception of Classroom Goal Structures			
Classroom Mastery Goal Structure	This scale refers to students' perceptions that the purpose of engaging in academic work in the classroom is to develop competence.	6	0.72
Classroom Performance-Approach Goal Structure	This scale refers to students' perceptions that the purpose of engaging in academic work in the classroom is to demonstrate competence.	3	0.98
Classroom Performance-Avoid Goal Structure	This scale refers to students' perceptions that the purpose of engaging in academic work in the classroom is to avoid demonstrating incompetence.	5	0.90
Academic-Related Perceptions, Beliefs, and Strategies			
Academic Efficacy	This scale refers to students' perceptions of their competence to do their class work.	5	0.71

Academic Press	This scale refers to students' perceptions that their teacher presses them for understanding.	7	0.77
Academic Self-Handicapping Strategies	This scale refers to strategies that are used by students so that if subsequent performance is low, those circumstances, rather than lack of ability, will be seen as the cause.	6	1.01
Avoiding Novelty	This scale refers to students' preference for avoiding unfamiliar or new work.	5	0.98
Cheating Behavior	This scale refers to students' use of cheating in class.	3	0.94
Disruptive Behavior	This scale refers to students' engagement in behaviors that disrupt or disturb the classroom.	5	0.92
Self-Presentation of Low Achievement	This scale refers to students' preference to keep peers from knowing how well they are achieving in school.	7	0.75
Skepticism About the Relevance of School for Future Success (Midgley, 2000)	This scale refers to students' beliefs that doing well in school will not help them achieve success in the future.	6	0.92

APPENDIX F:

CONSENT FORM

Dear Middle School Parent,

My name is Ellen Mitchell. I am the art teacher at this middle school and also a doctoral student at Walden University. I am conducting a research project about students' beliefs about their personal abilities to complete schoolwork successfully. I am inviting your child to join my project. The students for this survey were chosen at random. Please read this form and ask any questions you may have before agreeing to your child's participation in the study.

Procedures:
If your child joins this project, he/she will be asked to:

Take a short 20 minute written survey-- 2 times during one nine weeks session. The surveys will be taken during students' daily art classes or students' daily remediation/acceleration (nicknamed--PAWS) time.

Voluntary Nature of the Study:
Your child's participation is voluntary. Everyone will respect your decision of whether or not you want your child to take part. If your child joins the study now, he can change his mind later.

Risks and Benefits of Being in the Study:
Your child might feel a little uneasy while taking the survey because it asks him to share his feelings about his classes. No gifts will be given to your child. Taking or not taking part in the survey will not affect your child's grades or standing in any class. This study will explore students' beliefs about their personal abilities to complete school work successfully.

Confidentiality:
I will not know if your child takes or does not take the survey. I will not know your child's answers. Your child will not write his name on the survey. Two county educators will administer the survey. They will also keep the consent letters.

Contacts and Questions:
You can now ask questions. You can reach me at 404-435-9194 or mitchellellen46@bellsouth.net. You can reach my advisor, Dr. James Mitchell at JMitchellWU@aol.com or 510-693-3506. If you want to ask my university a question, you can call Dr. Leilani Endicott at 1-800-925-3368 x 1210.

Please sign and return a copy of this form in envelope provided. Please keep a copy for your records

Statement of Consent:

☐ I have read this information and I have received answers to any questions. I consent for my child to participate in the study.

Name of Participant _____

Parent's Signature _____

Researcher's Signature _____

Thank you very much,

Ellen Mitchell

APPENDIX G:

STUDENT ASSENT FORM

Dear Middle Student,

My name is Ms. Mitchell. I am the art teacher at this middle school. I am also a student at Walden University working on a doctoral degree. I am doing a research project about students' beliefs about their personal abilities to complete schoolwork successfully. I am inviting you to join my project. You can ask questions before you decide whether or not you want to do this project.

ABOUT THE PROJECT:

If you agree to join this project, you will be asked to:

> Take a short survey 2 times during one nine weeks session. The surveys will be taken during your daily art class or your weekly PAWS time.

IT'S YOUR CHOICE:

You don't have to join this project. It will not change your grade in any of your classes. You will not get any gifts for taking the survey. Another teacher will give the survey. You will not write your name on the survey. I will not know if you take the survey or not. If you join the project now, you can change your mind later.

You might feel a little uneasy while taking the survey because it asks you to share your feelings about your classes. This study will explore your beliefs about your personal ability to complete schoolwork successfully.

PRIVACY:

Everything you say during this project will be kept secret. No one else will know your name. No one will know if you took the survey. No one will know the answers you gave.

ASKING QUESTIONS:

You can ask me any questions you want. You or your parents can reach me at 404-435-9194 or mitchellellen46@bellsouth.net. You can reach my professor at JMitchellWU@aol.com or 510-693-3506. If you or your parents would like to ask my university a question, you can call Dr. Leilani Endicott at 1-800-925-3368, x1210.

If you agree to be in the study, check the box and sign your name here.

Please return a signed copy of this form in the envelope provided. Keep a copy of the form for your own records.

Thank you very much,

Ellen P. Mitchell