

THE RELATIONSHIP BETWEEN MUSIC AND VISUAL ARTS FORMAL STUDY AND  
ACADEMIC ACHIEVEMENT ON THE EIGHTH-GRADE LOUISIANA EDUCATIONAL  
ASSESSMENT PROGRAM (LEAP) TEST.

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Because arts education is essential to developing students to their full potential, it is my hope that this work will be used to help all students receive and participate in excellent arts education experiences.

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## ABSTRACT

The purpose of this study was to examine the policy implications allowing administrators to exempt a student from required arts instruction if the student obtained unsatisfactory scores on the high-stake state mandated tests in English and mathematics. This study examined English language arts and math test scores for 37,222 eighth grade students enrolled in music and/or visual arts classes and those students not enrolled in arts courses. There were more than 12,000 students who were eligible, but not enrolled in arts courses. Methodology consisted of comparing the mean scores of students receiving music and visual arts instruction with the mean scores of students excluded from this instruction. The sample consisted of all non-special education students who took the statewide assessment spring 2008 in public schools. Students enrolled in music had significantly higher mean scores than those not enrolled in music where ( $p < .001$ ). Music enrollment was a positive predictor of academic achievement. Results for visual arts and dual arts were not as conclusive. The study found a lack of evidence supporting the exclusion of students from required arts instruction for the purpose of increasing test scores in English and math. The conclusions were that students enrolled in music perform significantly better; there is an access gap; and arts should be included in the curriculum of all middle school students. More study is required for visual arts, dual arts study, as well as, dance and theatre effects. Future research is required as to academic effectiveness of remediation implemented during the instructional day, thereby denying arts instruction to students. School Performance Scores must reflect all components of the curriculum to be valid. Instructional time in the arts must be enforced if all students are to receive a whole, effective, and relevant education. The practice of recommending more time in English and math in lieu of music for students should be reexamined. Administrators should construct schedules, including appropriate attention, so that all students receive a balanced whole education.



# CHAPTER I

## INTRODUCTION

This chapter contains a brief overview of the historical context of middle-level education in United States schools, emphasizing its purpose and practices from 1890 to the present. Next, the historical context of music and visual arts education followed by formal history of arts education in Louisiana are presented. Louisiana's curriculum initiatives and the introduction of high stakes testing are presented. This is followed by the statement of the problem, purpose of the study, significance of the study, and the delimitations and limitations.

Louisiana curriculum statutes require students to experience at least two hours of formal music and arts instruction each week (La. Rev. Stat. 17:7 {26}). The Louisiana Department of Education (LDE, 2008a) Bulletin 741 allows schools to exempt a student from this instruction if the student has below basic scores on the state mandated tests in English language arts and mathematics. This study sought to determine whether students who participated in the arts, and thus spent less instructional time in the tested subjects, had lower scores than those in the control group who devoted a larger part of the instructional day in English and math. Is the exception to policy which gives longer instruction in English language arts and mathematics, thus, diminishing music and visual arts experiences, resulting in higher scores in these two subjects?

English language arts and math test scores (Louisiana Educational Assessment Program, *infra* LEAP) were examined of those students enrolled in music or visual arts classes in the 2007-2008 testing year for middle grades (5-8) and those students not enrolled in these classes. The significant curriculum policy question was whether decreasing time spent on direct instruction in English language arts or mathematics results in diminished performance on LEAP. Was this exemption from required music and visual arts instruction justified by equal or greater scores earned by those excluded for additional instruction in the English and math?

A body of literature suggests a positive relationship between intense formal study of music and the visual arts and higher performance levels in tested content areas. It suggests an even stronger positive correlation when the population studied consists of those students who live in poverty. Louisiana has one of the highest poverty levels among its public school students in the nation. The literature indicates that increasing the proportion of the academic day spent in English language arts and mathematics instruction does not yield proportionate increases in test performance. No study has documented that research has been conducted in middle-level schools whose student bodies are primarily from homes which are no more than 1.3 times the Federal poverty level index, i.e., free-lunch eligible (see Appendix A) (72 C.F.R. 8687.).

Middle-level literature suggests that visual and performing arts education are an essential exploratory core component. Low socio-economic students often spend the largest portion of their academic day in English language arts and mathematics (National Task Force on the Arts in Education, 2009). Schools which primarily serve students in poverty often remove the arts from the curriculum. Studies also suggest that the positive effects of music and visual arts instruction are lost for these students.

An *ex post facto* study was conducted of extant student course enrollments and standardized test scores maintained by the Louisiana Department of Education (LDE). Methodology consisted of comparison of English language arts and mathematics mean scores among groups receiving music and visual arts instruction and those students excluded, by policy, from this instruction. Separate mean scores were computed for students in poverty and those significantly above the poverty level. Data obtained from the LDE contained no names and were identifiable only by internally generated identification numbers. These identification numbers were removed before data was loaded into the statistical program.

## **Historical Context of Middle Level Education in United States Schools**

At the beginning of the twenty-first century, the same question was posed as it was at the end of the nineteenth century, “What should we do with our 10-14 year-old students?” The critical function of schooling, that was to lead the learner “to emerge from the status of an obedient, dependent, child to that of a responsible, self-directing adult member of society” (Henry, 1944, p. 6), was distinctively focused on these middle school years. Students needed to be prepared for additional independent, self-directed learning in high school, university, or vocational college (Moss, 1969; National Educational Association of the United States (NEA), 1894; U.S. Bureau of Education, 1913a). Professionals sought research-based best educational practices (Jackson & Davis, 2000; Moss, 1969). Parents demanded what was best for their children. Policy-makers insisted on more efficient ways for preparing the next generation of citizens (Moss, 1969; U.S. Bureau of Education, 1913a).

Davis (1924) found references to middle-level education in Comenius (1592-1670) and Rousseau (1712-1778). They wrote on elements of middle-level education, which can be found in reforms of the present day. The exploration was limited to students in the “in-between” years (Briggs, 1920; Davis, 1924; NEA, 1894). They were child and adolescent, moving back and forth despite an arbitrarily imposed age line (Alexander & Kealy, 1973; Briggs, 1920; Jackson & Davis, 2000; Judd, 1923; Trump & Vars, 1976).

The maturation periods of childhood and adolescence have long been acknowledged in elementary and secondary education. The concept that there is a distinct transition period has not been readily adopted (Moss, 1969). The maturation process which takes an individual from childhood to adulthood (e.g., intellectual, social, and physical) is a gradual one that occurs at varying speeds starting approximately at age 10 and continuing until age 14, and perhaps 15 (George, Stevenson, Thomason, & Beane, 1992; Moss, 1969; Noar, 1964; U.S. Bureau of

Education, 1913a). Many universities proclaim that a separate program to prepare middle-level educators is covered in the program of studies that prepares educators for high schools (Popper, 1967).

The name junior high school was “an accident of history” (Popper, 1967, p. 8). Yet, this precursor to the middle school identified the principles that are now commonly associated with effective middle-level concepts. The name middle school began to appear regularly in the 1960s, associated with the continuing improvements begun at the turn of the twentieth century. At that time, Lounsbury (1998) asserted that if the goals of the junior high school organization had been achieved, there would not have been a need to create a structure called middle school. Social, economic, and political crises shaped the development of middle-level education. Presidents Adams and Jefferson wrote that preparing young people to take their place as citizens in our democracy was a major goal of public education (Addams, 1902; Dewey, 1926; U.S. Bureau of Education, 1913b, 1918). Rothstein and Jacobsen (2006) credited Thomas Jefferson as saying that universal public education was to prepare future voters to exercise critical thinking and wise judgment. The Louisiana Board of Elementary and Secondary Education identified citizenship as one of the five essential learning outcomes (Louisiana Department of Education, 2003).

### **1890 - 1920**

The report from the *Committee of Ten* was the seminal document for educational planning. Most secondary sources still cite this reference in the initial pages (Davis, 1924; Koos, 1955; Moss, 1969; Popper, 1967). Its role was to prepare students for further learning in a university or to enter a vocation. In 1890, public schools were defined as elementary (grades 1 through 8), usually an ungraded one-room schoolhouse, and secondary (grades 9 through 12). The vast majority of the population, approximately ninety percent, did not finish a twelve-year program.

The *Committee of Ten* convened by Charles Eliot, President of Harvard University, was interested “in the school children who have no expectation of going to college, the larger number of whom will not enter a high school” (NEA, 1894, p. 30). The committee set the direction for the conferences to make recommendations about the processes of education. The conferences included notable superintendents, professors, principals, and educators. They represented the fields of Latin, Greek, English, other modern languages, mathematics, physics, astronomy, chemistry, natural history, history, civil government, political economy, and geography. A strong emphasis was that all content should be common and students should “study it all” (NEA, 1894). The committee was the first to document that those subjects deemed more important receive more time allocation. If the subject is important for the student to learn, then appropriate time should be given for the student to make useful meaning out of it.

The 1894 report insisted that students be prepared for the next level of education, whether they were young adolescents preparing for high school or high school students preparing for undergraduate work or work in the fields, the factories, and the mines.

Only an insignificant percentage of the graduates of these schools go to colleges or scientific schools. Their main function is to prepare for the duties of life that small proportion of all the children in the country—a proportion small in number, but very important to the welfare of the nation—who show themselves able to profit by an education prolonged to the eighteenth year, and whose parents are able to support them while they remain so long at school. . . . The preparation for a few pupils for college or scientific school should in the ordinary secondary school be the incidental, and not the principal object. At the same time, it is obviously desirable that the colleges and scientific schools should be accessible to all boys or girls who have completed, creditably, the secondary school course. (NEA, 1894, pp. 51-52)

The committee’s work began the process of moving specific subject matter, academic disciplines, to lower grades. Secondary schooling meant that two years (grades 7 and 8) would be taken from the elementary program leaving grades 1-6 (U.S. Bureau of Education, 1913a). This “junior high school” was symptomatic of the prevailing thought that the students were not

unique developmentally (Faulkner, 2003). The decision was based upon efficient delivery of knowledge, not identified learner needs.

The *Committee of Ten* was dominated by professors who believed in the importance of their respective subjects. They recommended that secondary schools “prepare” graduates for post-secondary work. Thus, elementary schools must prepare their students to do the work that the high school required. Elementary subjects were “kept in use too long” (NEA, 1894). “That which required eight years in the middle of the last century is capable, under modern conditions, of accomplishment in a different way and in a much shorter period. The elementary school must ultimately become a wholly different kind of a school from that which was set up in 1850” (Judd, 1922, p. 179).

G. Stanley Hall wrote *Adolescence* in 1904. Adolescence, as a separate psychological stage, therein, entered the literature (Clark & Clark, 1994; Eichorn, 1973; Hall, 1904; Koos, 1927). This separate psychological stage may be characterized by the following illustrations: developmental and gender differences over time were designated by the masculine term Dick and the feminine term Jane. A boy, Dick, began work at fourteen. He would start his apprenticeship in a trade and learn to earn a living. He began to break with his parents and make the decisions which would affect him for the rest of his life. Jane, who was an average fourteen year old, was contemplating entry into her final relationship, marriage. On average she was 4’9” and had just entered menarche.

In 1918, the U. S. Department of the Interior, Bureau of Education, documented that the population of school-aged children had increased. They noted that, of those students who start the first year of elementary school, approximately one-third reach the four-year high school. Of those students reaching the high school, only one in nine graduated. One half of the entering high school students drop out before the third year (U. S. Bureau of Education, 1918). Thus, at the end

of World War I, only slightly more than ten percent of the U. S. adult population had completed high school.

In response, the Bureau recommended that schools organize in three divisions. Elementary would consist of six years, and secondary would be divided into three years of junior high school (7-9) and three years of senior high school (10-12). This same document also recommended compulsory education for students until the eighteenth year. The junior high school student would “explore his own aptitudes and make at least provisional choice of the kinds of work to which he will devote himself” (original gender use; U. S. Bureau of Education, 1918, p. 18).

The U. S. Bureau of Education (*Economy of Time*, 1913a; 1918) and the Committee of Ten made recommendations that became foundational to middle-level education. They included departmental instruction, ability to elect some subjects, prevocational courses, and an organization that “calls forth initiative and develops the sense of personal responsibility for the welfare of the group” (1918, p. 13). Developing future citizens who could contribute to the common good and take an active part in the political process was recognized as a persistent need. The predominant guiding principle of middle-level education, democratic education, was solidly established herein. Establishing these “junior” high schools became “in vogue” in progressive communities (Briggs, 1920). The Federal government made its entry into pre-college education because of the “discovery” of adolescence and the industrial society’s call for vocational training for Dick and domestic science for Jane. Before 1900, only two schools were identified as junior high schools, twenty-one junior high schools in 1910, and by 1917, that number had risen to 272 junior high schools. By 1918, the number of junior high schools had grown to 557 (Briggs, 1920).

The creation of the junior high school as a separate unit of instruction was to break the elementary/high school division by inserting a model for pre-adolescent students. The separated

junior high school became prominent in the first twenty years of the twentieth century. It emphasized preparation for high school academics. Like the high school, it was departmentalized, with each content area occupying a portion of the school site. Students moved on fixed period schedules from one content area to another in a large expanse of space. The program had a high school orientation with virtually no emphasis on counseling, or individualizing instruction, or independent exploratory activities. It had a variety of co-curricular and extra-curricular activities with little or no focus or coordination. The teachers were trained as subject matter specialists (Alverman & Muth, 1992; McKay, 1995).

### **1920 - 1945**

The end of World War I saw the fading of the one-room schoolhouse. Schools were now required to prepare students to take their places on the new assembly lines. Schools worked diligently to implement all the recommendations that the Bureau of Education made. The basics of education were expanding and could no longer be handled by an untrained teacher. This change in purpose and form, Judd noted, “is here as an inevitable consequence of natural evolution. It is not something imposed artificially on the school. It is something which comes from within and must work itself out in new and more productive types of organization” (1922, p. 182).

The common educational models were first implemented through eighth-grade elementary schools followed by four-year secondary schools, or six-year elementary schools followed by six-year secondary schools. Briggs (1920) made an extensive list of criticisms of the eight/four plan of education. According to a survey given to 272 junior-high schools, sixty schools listed “providing educational opportunity” as the chief reason for their establishment and reorganization. The criticisms documented what could be labeled as developmentally inappropriate (Briggs, 1920). However, the junior high school model was now spreading over the country from the



Mid-West and California (Briggs, 1920, Davis, 1924). There was some resistance to the idea of a seventh through ninth grade junior high school. It was believed that seventh and eighth graders should not be in the same building with the older students. There were two developmental stages identified; by placing seventh, eighth, and ninth graders in the same building it was difficult to meet the specific needs of the seventh and eighth grade students (Wiles, Bondi, & Wiles, 2006).

During the Great Depression and World War II, as resources were scarce, little information was documented relative to progress in middle grades education. There was one significant exception. In 1930, the Progressive Education Association began a study to investigate how education in high schools could be improved. This led to the Eight-Year Study, conducted from 1934-1943, where students were followed through four years of high school and four years of college. This study was viewed as the most thorough, longitudinal, curriculum revision project in America's educational history (Lounsbury, 1998). Junior high school, early secondary education, was considered to be grades seven through nine; high school was grades ten through twelve. By the end of World War II, the number of students in high school had grown from less than one million to almost ten million. According to Aikin (1942), billions of dollars had been invested in facilities and "the faith of the American people in education remained unshaken" (p. 8).

After the first year of study, the Commission made statements echoing much of what had been written in the *Cardinal Principles of Education* (U. S. Bureau of Education, 1918). These statements gave additional foundation to what became the middle school philosophy. "Schools failed to give students a sincere appreciation for their heritage as American citizens. Schools neither knew their students well nor guided them wisely. In fact, the creative energies of students were seldom released and developed. The conventional high school curriculum was far removed from the real concerns of youth" (Aikin, 1942, p. 4).

The Eight-Year Study (Aikin, 1942) examined curriculum, instruction, and organization in thirty schools. The Commission and the schools believed “the most important service that a school can render youth is to give them understanding and appreciation of the way of life we call democracy” (p. 19). The Commission asserted that the best way for the students to learn about democracy was for students to experience it “at school every day” (p. 19). Again, democratic education was emphasized as a central principle of the middle-level program.

Thorndike (1918), a behavioral psychologist, discovered that Dick and Jane could best receive training through specific stimuli followed by patterned responses. For example, all the boys made the same bookshelf at the same time and each girl made her apron, which looked like every other girl’s apron (Tanner, 1972). Because of the Great Depression, Dick’s vocational training had begun a year earlier. This was necessary before he went off to work in President Roosevelt’s programs. Jane was 5’1” and had entered menarche at thirteen, one year earlier than she had four decades ago (Eichorn, 1973). The number of separate junior high schools had increased to 2,372 by 1938. This was the result of more students staying in school for longer periods of time. Still, less than half of the students who had entered first grade, entered high school (Goodykoontz, 1945).

### **1945 - 1975**

After the Great Depression and World War II, many Americans faced the stark choice of staying in school or earning a living. Society, for the most part, chose to eat. Students, generally, found the curriculum of secondary schools to be of little meaning. At a conference for the Vocational Education Division of the U.S. Office of Education in 1945, Dr. Charles Prosser stated that high schools failed to prepare sixty percent of the youth for employment (Tanner, 1972). Following this declaration, President Truman called for a report on higher education. This commission found that nearly fifty-percent of the population was capable of completing fourteen

years of formal schooling (Zook, 1948). The U.S. Office of Education created two *Commissions of Life Adjustment Education*. The goal of these Commissions was to “equip all American youth to live democratically with satisfaction to themselves and profit to society as home members, workers, and citizens” (U. S. Office of Education, 1951, p. 1). Again, it was believed that secondary schools were not meeting the needs of the students and the communities they served (Tanner, 1972).

At the end of World War II, education was dominated by the soldiers’ returning and causing what was known as the “Baby Boom.” The sudden growth in population had a major effect on education. As this population spike moved through the educational system, new facilities were required for the growing enrollment. School districts faced the economic dilemma of deciding which students would benefit from the new facilities. New elementary schools were the usual solution to accommodate this boom in the population (Tanner, 1972).

As the baby boom, those children born between 1946 and 1950, moved through the schools, it was sixth-grade students who were being assigned to the junior high school facility to make more room for the incoming wave of younger children (Beane, 1993; George & Alexander, 1993). New high schools were built to accommodate the ninth grade students who were assigned from the junior high schools. This allowed school districts to more effectively use available space and incorporate emerging instructional equipment required for high school education. The consolidation of schools, districts, and resources caused the enrollment of individual secondary schools to increase substantially (Tanner, 1972).

By 1960, the emphasis on moving to a more developmentally responsive learning environment to address issues of alienation and drop-outs caused a redefinition of appropriate middle-level education (George & Alexander, 1993). Instructional practices now focused on developmentally appropriate activities and exploration. It was delivered by integrated teams of

teachers who planned and assessed content as a unit. Schedules were flexible and under the teachers' control. Curriculum orientation required individualization, celebrated diversity, and involved students in assessing and addressing their individual and group needs. Program quality was determined through a holistic, coordinated approach. Teacher training focused on the knowledge of human development as the guiding principle for instructional design (Alverman & Muth, 1992; McKay, 1995).

America discovered the work of Swiss psychologist, Jean Piaget. His description of the mental developmental stages promoted the concepts of concrete and abstract operations. The development of abstract reasoning became a goal of middle-level educators. When students develop abstract thought patterns, they become capable of utilizing complex reasoning (Marzano & Pickering, 1997), required for algebra, geometry, economics, and such other abstractions as self-reflection and self-control (Brainerd, 2003; Piaget, 1950). Mental development was identified as a set of capacities to be refined rather than an inborn trait (Brainerd, 2003).

Dick faced the reality that the high school diploma was an essential passport to independence and the world of work. His ability to break from his parents and to make his own decisions was delayed until his completion of high school. Jane was 5'3" and had entered menarche at twelve years six months, one and one-half years earlier than she had six decades ago (Eichorn, 1973). Society expected her to delay a domestic role until five years after her ability to conceive and bear children. From a sociological and legal standpoint dramatic changes were being implemented in the schools.

Significantly, in 1954, the Supreme Court heard *Brown v. the Board of Education* ruling that schools segregated according to race could no longer be considered "separate but equal" (1954). Desegregation had the effect of increasing the enrollment of middle-level schools (George & Alexander, 1993). Policy-makers closed the segregated junior high schools and

moved the ninth grade students into the newly constructed high schools. Fifth and sixth grade students were moved from segregated elementary schools to desegregated middle schools (George & Alexander, 1993). The growing number of middle schools was documented by Alexander's survey which was modified and repeated several times. In 1967, he identified 1,101 schools labeled as middle schools (Alexander, 1968).

In the South, the political decision was frequently made to use the abandoned "Black" facilities to house the middle-level students during desegregation. In order for districts to keep in compliance with the law, elementary schools represented small segregated neighborhoods and the integration was to begin with the junior high schools (Beane, 1993; George & Alexander, 1993; Tanner, 1972). This was a way to functionally desegregate the schools, while effectively being able to keep elementary schools in segregated neighborhoods (J. A. Taylor, personal communication, April 3, 2004). Another survey reported the huge jump to 2,298 middle schools in 1970, the second year after desegregation (George & Alexander, 1993).

With the launch of *Sputnik* in 1957, education saw the start of the most recent critique on the trends of education. James Beane (1993), Paul George and William Alexander (1993) and Daniel Tanner (1972) saw this as a turning point in what children experienced in education. Educators, philosophers, and psychologists called for the profession to support students' unique developmental needs. Policymakers began their assault on this fully developed curriculum then labeled progressive education.

Even though the public educational system was now educating more students, and a higher percentage of students than ever before, it was criticized on many fronts. Politically and legally, with desegregation, many began to call for "back to basics," a retreat from a "complete education." Internationally, *Sputnik* caused many to reexamine the curriculum of secondary schools. Educators were blamed for the nation's falling behind the Soviet Union. "Paradoxically,

when the Americans were first to land on the moon twelve years after Sputnik, no credit was given to our schools” (Tanner, 1972, p. 71).

Frustration with these “return to basics” results led educators to respond to the students’ needs when implementing learning experiences (Grambs, Noyce, Patterson, & Robertson, 1961). *The Junior High Schools We Need* recommended consideration of the developmental needs of the young adolescent. It called for the heterogeneous grouping and a curriculum which included experiences wherein students developed individual talents and interests. This document suggested that the ninth grade students be assigned to the high school and the sixth grade be included as part of the middle-level program. This text appears to have laid the foundation for other prominent works in the field of middle-level education, eventually leading to *Turning Points 2000*.

Junior high schools had more curricular offerings than the elementary schools that preceded their organization. They also provided more opportunities for students to participate in activities, such as athletics, clubs, and social dances. The students also had homeroom guidance, allowing educators to become better acquainted with students’ individual needs. James Conant, Harvard professor and ambassador (Rury, 2002), suggested that it was not the grade configuration that was paramount, but that the educational program be developmentally responsive to the students’ needs (Conant, 1960). William Alexander identified the need to address the actual school program for the middle-level students (Lounsbury, 2009).

Dissatisfaction with the state of education, and the practices common in the components of junior high school, led to the emergence of the middle school (McEwin, 1983). It was no longer believed that the seventh through ninth grade junior high school was the most effective way to educate middle-level students. Educators began examining the possibility that middle-level schools should start with fifth or sixth grade and extend through eighth grade (Beane, 1993).

### **1975 - Present**

With the passage of Public Law (PL) 94:142 in 1975, education became a right for all Americans, including the handicapped. It has proved a difficult task to encourage all students to exercise this right. As a higher percentage of children began to matriculate through the system, criticism that students could not read, write, or do math again became a common aspersion. This happened as neurology and psychology developed as independent fields and began to inform the disciplines. The growth of the brain and its effects on learning challenged previous views of instruction. Epstein and Toepfer (1978) discovered that adolescents constructed meaning through the direct experiences of creating worthy products, contrasting sharply with Thorndike's view that drill and practice were the most effective ways of learning. Linking the experiences in the school to the outside world was deemed essential for reaching this more diverse student population (Beane, 1993).

Dick's social world became more complex and diverse as his school enrolled students of other races and conditions who had previously been legally separated. In 1976, he had to adjust to working with students with handicaps as they moved into the public schools from their previous "state institutions." At the early stages of post-industrialism, the necessity for education beyond high school became more important. Dick and his classmates were compelled to finish school; dropping out of school was no longer socially acceptable. In his inaugural address, President Obama (2009) likened dropping out of school to being unpatriotic.

Compulsory attendance laws became common, requiring more students to stay in school for longer periods of time. Jane grew to 5'5" and entered menarche at twelve years—two years earlier than she would have eight decades ago (Eichorn, 1973). Jane had to delay assuming a domestic role for seven years after her ability to conceive and bear children emerged. Society also expected Jane to enter and remain in the work force for a significant part of her life.

The dramatic change in requirements for middle-level educational programs required a more formal examination of actual schooling. The National Middle School Association (NMSA) was founded in 1974. This organization recognized and promoted the unique needs of the middle-level learner. By 1974, the number of middle schools had grown to 3,723. Partially as a result of implementing PL 94:142, the number of middle schools had grown to 4,060 by 1978 (George & Alexander, 1993).

*A Nation at Risk* (1983), a critique of American schooling, is given credit for the rising number of middle schools in the 1980s. This open letter to the public criticized much of public education for its lack of academic excellence. The decision to write *A Nation at Risk* in the style of a letter meant that none of the research was publicly available for scrutiny. Educators and researchers could not examine why this commission thought the “educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a Nation and a people” (p. 5). The National Commission on Excellence in Education stated, “[America] had squandered the gains in student achievement made in the wake of the *Sputnik* challenge. Moreover, we have dismantled essential support systems which helped make those gains possible” (1983, p. 5). The reaction to this document by districts and policymakers was to continue the assignment of ninth-graders to high school. The 7-8-9 junior high school gave way to the 5-6-7-8 and 6-7-8 middle schools. By 1987, there were 5,466 middle-level schools (George & Alexander, 1993).

*A Nation at Risk* did not recognize that the United States had made a significant effort to provide the opportunity for all those who wish to pursue education to be able to do so. This country has compulsory education laws, which require most students to attend school through at least the age of sixteen. The United States has case law to require that public schools be equitable (*Honig v. Doe*, 484 U. S. 305, 1988). Numerous middle-level education authorities found that



heterogeneous grouping is better for all students, yet the new ways of segregation still involve means, the “haves from the have-nots” (Goals 2000, 1994; Horowitz, 2008; National Forum to Accelerate Middle Grades Reform (NFAMGR), 2000). Parents who can afford to pay tuition for their children to attend non-public schools keep them from adding to others’ education. When students are heterogeneously grouped, all groups show improvement.

*A Nation at Risk* indicates no recognition of the right to education established by PL 94:142. As the students passed through the system, the criticism that students cannot read, write, or do math once more became common. Again, there was a “back to basics” push that ignored the larger purposes and integral pieces of a complete education, i.e. “... developing the habits of mind that include that which will enable them to benefit from and benefit the world” (Jackson & Davis, 2000; Meier, 2003, p. 16; Taylor & Baker, 2003). These include the 21st Century Framework learning and innovation skills; information, media, and technology skills; and life and career skills (Partnership for 21st Century Skills, 2008).

The Carnegie Foundation, recognizing the critical role that middle grades must play, continued its major role of defining American education. As it had done at the beginning of the twentieth century in designing the American high school, in 1989 it “defined” the quality middle school by producing *Turning Points: Preparing American Youth for the 21st Century*. This document addressed the tough issue of the appropriate structure required to support the principles of effective middle-level education as defined over the last century. “What will define middle-level education?” has been the shifting landscape, making education treacherous. Striking similarities are found whether one uses the findings of the 1918 Committee of Ten, *Cardinal Principles of Education*, Lipsitz’s (1984) definition of needs, or *Turning Points 2000*.

When one accounts for the intellectual, social, and physical changes which middle-level students experience, one encounters the basic learner needs as defined by Lipsitz (1984). The

seven learner needs she recognized were “competence and achievement; self-exploration and definition; social interaction with peers and adults; physical activity; meaningful participation in school and community; routine, structure, and limits; and diversity” (Lipsitz, 1984, p. 10). Students experience a healthy learning environment when these learner needs are recognized, studied, and implemented. Through incorporating those concepts into practice, educators can meet the students’ educational needs intellectually, socially, and physically (Jackson & Davis, 2000; Lipsitz, 1984; NFAMGR, 2000).

Louisiana authorizes five certifications that allow a person to work with the middle-level student. The current certifications include 1-5, 4-8, 6-12, and K-12. The first certification (1-5) is for elementary certified generalists with a focus in English language arts or mathematics. The second certification (4-8) is intended for middle grades educators. This certification is designed to have the educator develop in-depth knowledge in two common-core content areas. The secondary certification (6-12) is similar in design to the middle grades certification. The K-12 certification prepares educators to work with all students in dance, music, visual arts, physical education, and world languages (Bulletin 746, 2009b). An older certification of K-8 would allow an educator to work with middle-level students; however, it was phased out as the previous certifications were established. These certifications overlap the Louisiana curriculum content standards, whose benchmarks are grouped K-4, 5-8, and 9-12.

### **Purpose—Then and Now**

The whole history of the junior high school movement is closely paralleled to the social, economic and political developments of the half-century which encompasses its life. . . . The junior high school was initiated, developed, and grew because a variety of factors, all of which related to the times, and existing educational theory and practice, supported it one way or another. (Lounsbury, 1960, p. 146)

Whatever the configuration, within the elementary through secondary context, the key principle to effective schooling requires an environment that is developmentally responsive,

socially equitable, and academically excellent. Educators' function is to create an organizational structure supporting these guiding principles, where students can discover their best selves and how they can best serve humanity. What can they contribute to society to make the community, as a whole, a better place for everyone? The educated person is socially and economically productive. The student develops the knowledge, skills, and habits to produce quality goods and services that contribute to the total community (U. S. Bureau of Education, 1918; Taylor & Baker, 2003).

The National Forum to Accelerate Middle Grades Reform (NFAMGR) advocates schools which serve middle-level students, ages 10-14, be developmentally responsive, academically excellent, and socially equitable. The Forum and the National Middle School Association (NMSA) recommend that schools which educate middle-level students (ages 10-15) employ techniques and practices based upon recognizing the learner needs. Students are placed at the center of the learning process. NFAMGR and NMSA call for high academic outcomes for all students. Students are challenged by a curriculum that is relevant, integrative, and exploratory. Both groups suggested that the best way for all students to achieve social equity is through diverse learning experiences responding to individual and cultural needs (NFAMGR, 2000; NMSA, 2003, 2010).

Economics has made middle-level education the “redheaded stepchild” of the education family. After one hundred years of discussion, many authorities still choose to see education in terms of elementary and secondary, thereby limiting the idea that *students are human beings*. For example, an expression of this “black sheep” phenomenon is the issue of housing. Rather than constructing buildings which would be structurally appropriate for all students, frequently a new building has been constructed for either an elementary or a high school. The middle-level students would be assigned to the “inadequate” structure abandoned by either the high school or

the elementary school. The practice of district administrators and superintendents getting the most out of the buildings can be traced back to the 1920s when, in order to make more room for high school students, ninth grade students moved to the junior high school (NFAMGR, 2000; NMSA, 2003).

The Carnegie Council on Adolescent Development (1989) continuing its major role in defining American Education, produced *Turning Points: Preparing American Youth for the 21st Century* to define quality middle-level education. *Turning Points 2000*, a major revision of the original recommendations, made explicit the goal, “Ensure success for every student.” Jackson and Davis (2000) found that some professionals would misinterpret the old recommendation which used the word “‘all’ because people have become accustomed to automatically assuming that ‘all’ is a synonym for ‘most,’ excluding students with disabilities. Because we really do mean every student, we chose to alter the wording of our statement to avoid confusion” (p. 30). The concept of every student also is in line with the *No Child Left Behind Act* (NCLB), signed into law in 2001. Eight recommendations were made in *Turning Points 2000*. These expanded the previous work and built upon ten years of research. The research indicated that when all the recommendations were implemented, all sub-groups of students significantly improved. Central concepts included interdisciplinary learning, learning communities, and performance assessment. Each of these has been in evidence throughout the last century of intellectual thought on middle-level education.

*This We Believe: Successful Schools for Young Adolescents* (NMSA, 2003) states that successful students must be supported in an environment centered on their needs. Curriculum, pedagogy, and programs are based on the developmental readiness and the interests of young adolescents. Academic improvements for middle-level students will be achieved only when the best practices, as defined in the literature, are followed.

Preparation of middle-level educators enables them to be role models for the citizens whom students are to become. Supportive human relations between administrators and educators become the foundation of healthy and safe learning environments reflecting the principles of democratic education. Safe environments enable students to risk becoming successful. “Inclusive, collaborative, democratic, and team oriented approaches to teaching and learning” are prepared by the educator and experienced by the students (NMSA, 2003, p. 9). Effective curriculum is interesting for the students and the educators.

A specialized organizational structure focused on learning environments and experiences which are developmentally responsive, academically excellent, and socially equitable, becomes the foundation for creating the future sought for a century. According to NMSA (1996), 12,095 schools were organized to reflect these concepts in 1991. By 2001, the number of schools with similar criteria had increased to 14,107. “School and community programs must do more to cultivate responsible, moral decision makers and discriminating, enlightened consumers” (NMSA, 2003, p. 6). Schools have a duty to prepare citizens who are aware of current issues and who can thoughtfully defend their choices as active participants in representative government. The central focus of schooling led Dick and Jane “to emerge from the status of an obedient, dependent, child to that of a responsible, self-directing adult member of society” (Henry, 1944, p. 6). Students are prepared for additional independent, self-directed learning in the high school, university, or vocational college (Moss, 1969; National Educational Association, 1894; U.S. Bureau of Education, 1913a).

### **Historical Context of Music and Visual Arts Education in United States Schools**

The beginnings of American music education were traced to 1620 New England with the Psalters being sung by colonial congregations. This psalm singing continued European practices of worship and was the impetus for teaching youth to read music. The first music books appeared

in Boston in 1721. These books included psalms and instructions on how they were to be sung. Instruction was typically in the evenings done by singing masters who were paid fees for their services. Such was the predominant mode until improvements in the common schools were made during the early 1800s (Keene, 1982).

Educational reform of the eighteenth and nineteenth centuries shaped the emergence of music education as part of the American common school's curriculum. The dualism between the materialistic philosophy and the religionists caused the curriculum to use music to emphasize spirituality. René Descartes declared that the mind was "free of matter," was divine, hence relegated to the theological sphere (Keene, 1982; Mark & Gary, 1999). Comenius and others supported a broader and more practical curriculum, including an emphasis on use of English as the primary instructional language, as well as additions of dancing, history, fine arts, geography, and practical arts.

Johann H. Pestalozzi's work created an educational environment that encouraged the expansion of the curriculum and affected music teaching methods, focusing on the equalization of opportunity for the masses. Horace Mann reported that music was throughout the curriculum, including vocal and instrumental (Keene, 1982). Lowell Mason and other so-called Pestalozzians considered the addition of music better suited to children, sharing Pestalozzi's concern about the moral effects of music on children (Geahigan, 1992; Keene, 1982; Mark & Gary, 1999).

Between 1827 and 1837, vocal music began to take its place in the common school curriculum. Lowell Mason was appointed to music supervisor for Boston's schools; vocal music became a regular branch of school instruction. His 1837 appointment is generally recognized as the formal beginning of organized American music education. Also in 1837, Calvin E. Stowe broadened the influence of music by linking three critical concepts: (1) all can learn to sing; (2) vocal music is of physical, intellectual, and moral benefit as a school subject; and (3) to bring

about the introduction of music to the schools the “public mind must be ready to recognize its desirability” and “the teachers must be qualified” (Mark & Gary, 1999, p. 151). The demand for certified music educators was established. By the beginning of the twentieth century, G. Stanley Hall, generally recognized as the father of educational psychology, proclaimed that music had positive psychological effects on children’s education (Keene, 1982; Mark & Gary, 1999).

Music instruction should have an aesthetic and moral justification and become an essential part of the curriculum for sound educational reasons (Keene, 1982). Dewey’s (1909) concept that children should be taught with dignity, set the stage for major growth in music education. While the role of vocal music has been somewhat diminished, instrumental music primarily derived from military bands is common throughout the American school system (Barr, 1954; Keene, 1982). School bands have continued to provide means for communities to express common patriotism, and continue the legacy of providing military musicians begun by General John J. Pershing (Keene, 1982). This philosophy defined the purpose for instrumental music until the launch of *Sputnik* (Efland, 1988). Since 1957, the whole child approach has taken a diminished role as specific disciplinary content prevailed (Geahigan, 1992).

Music education in the middle and high school contributes to the cultural growth of all students in at least three ways: (a) educational development, (b) functional achievement, and (c) artistic performance. It provides inspiration toward good citizenship initiative, self-reliance and assurance, respect for the abilities and interests of others, wholesome recreation and moral and spiritual values, all common aspects of the new workplace skills. The musical experiences of the middle-grade years are vitally important to the social, emotional, and intellectual development of these students. To meet this need, school programs include various musical offerings, e.g., singing, playing an instrument, listening, and creative opportunities on varying levels of ability

and experience. Required music classes are basic to an effective middle-level school curriculum (Barr, 1954).

The objectives of middle-level music are based upon exploring music according to individual abilities. Through performing and listening, students develop an appreciation for music and its contribution to developing values. Music experiences meet social, emotional, and physical needs through self-expression, creative effort, and enjoyment (Anifantis, 1950). Long (1955) established that music performance can increase confidence and courage. It contributes to the development of citizenship, a deeper and truer patriotism than information alone can elicit. It enhances individual and group identity through performing in an ensemble while developing cultural awareness through exploring diverse music literature.

A critical need, after 1957, was a philosophy to replace the support of progressive education. The performance of music itself made music education unique among school subjects. The long history of music education was a strong justification for its inclusion in American schools (Mark & Gary, 2007). National music education leaders met several times in 1999. This Housewright Symposium asked their colleagues to develop and respond to questions. The revised essays refined excellence in music education through a series of principles to guide 21st century music education philosophy. The symposium clarified that instruction is comprehensive, sequential, and standards-based. It incorporated technological changes and advancements, and used appropriate tools to bring people together to make and share music (Hinckley, 2000).

Music education is for all people beginning at the earliest possible age and continues throughout life. Shortages of music teachers, inadequate amounts of time for music instruction, music education and the community, and technological changes will require visionary leadership to resolve challenges. Although, NCLB has been criticized because it teaches students to take tests by which schools are judged, NCLB represents the first time that the federal government



defined the arts as core subjects since Congress passed the Elementary and Secondary Education Act in 1965. If this core subject status is to be realized, barriers that impede the full actualization of the principles of the Housewright declaration must be overcome (Hinckley, 2000).

### **Historical Antecedents to Integrated Arts**

The function of education and the proper role of the arts therein, may, in their current context, be traced to the late nineteenth century. Alfred Lichtwark struggled as he attempted to begin the German art education movement as early as 1886. He found himself in an educational system which focused on the memorization of knowledge from the past. His view, and that of much of the enlightenment outside Germany, viewed the development of character as the fundamental purpose of education. Such character would express itself through the decorative arts in habitation and the improvement of the quality of manufactured goods when the workers had experienced the development of aesthetic awareness or “good taste” (Fishman, 1966).

In the United States, during the first two decades of the twentieth century, Bailey (1928) emphasized that arts education transforms learning from industrial utility to the means of acquiring knowledge of the elements of beauty. He linked the study of art to the study of nature, history, literature, and philosophy (or religion). He saw the arts as the primary means of promoting a higher citizenship within the current community and for generations to come. Schooling was to have at its core the creation of beauty, so that goodness and truth could produce good citizens. Good citizens' visions of the “shoulds” of this world could only be adequately developed through the arts (Bailey, 1928).

Bobbitt (1924) asked basic questions about the purposes of education and the role of the arts in particular. He found civic functioning to be impaired due to a lack of familiarity with the world of beauty. He posited that beauty was stimulating and caused optimistic attitudes and positive action. The lack of beauty created apathy and indifference. Ugliness paralyzed effort.

Education's aim was to develop the ability to employ knowledge, skills, and habits that reflect higher and better art meaning. Education enabled one to express aesthetic choices relative to form, design, and function. Arts integration was viewed as the guiding principle to develop necessary decision making to guide all aspects of the learners' lives. Foley (1928) declared that youth should have happy and spontaneous expression through pleasure, attendant upon creation, in a humane and creative environment. Thus, all learning took place through the creative act.

The laws of design, i.e., rhythm, balance, harmony, coherence, dominance, and subordination, guided all experiences of schooling. Creative activities developed an intelligent appreciation of the best in literature and art, and the habits of intelligent discrimination guided decision-making. Beauty and excellence in creation were the essential goals of learning, demonstrated through craftsmanship in the production of academic products (Foley, 1928).

Kilpatrick (1924) viewed arts integration as a means to examine life itself. This examination began the process of defining curriculum. Authentic learning must begin with the creative process within social life. The memorization of isolated facts should give way to creating new experiences based upon effective moral imperatives that increase the goodness and beauty within life. Dewey (1928) saw these new experiences as primarily growing out of a respect for activity as the primary stimulus for, and center of, learning. The creation of social contact, communication, and cooperation in the productive process connected old learning to new. The integration of artistic endeavors in cooperative experiences ensured the quality of activities and outcomes. He saw the orderly development and inter-connection of subject matter as defining learning. Artistic judgment was developed through selecting that which best causes meaningful learning from the totality of available consequences. To Dewey, education was human growth and development through application of the arts.

### **Arts Integration in Difficult Times**

The Great Depression of the 1930s caused a fundamental questioning of much that had been accepted as good for society. Early efforts were made to make required disciplines, such as literature, more interesting for students. While teachers recognized that stories and poems were designed to develop aesthetics, the students did not have such experiences. Music and art were used with literature to relieve some of the drudgery and to add variety (Hoskins, 1929).

Dissatisfaction with the status quo caused early leaders to seek creative activities involving cooperative efforts among students in implementing the curriculum. The efforts focus was to better prepare citizens who could find their places in the community and use those places toward greater ends. The need for creative expression to add to the social heritage caused a re-examination of the role of the arts and how they related to the art of living (Barbee, 1930). The fear of creeping mediocrity caused a deeper examination of integration as an essential concept for human development and artistic production.

The basis for the arts in an integrated unit of instruction required an examination of the nature of school art. Integration of art became a part of construction and expression. Integrated art was commonly found in primitive communities. As the students progressed, art became a way of life. It guided the interpretation of societal functions. It's more important role was to provide a variety of social experiences where aesthetic perception could fully inform human activity. Integration of the learning experience was elevated to become the conscious objective of the art experience. Such objectives would add great functional value to the life of the school and the community (Baker, 1935).

As the decade closed, the concept of integrated school art programs took a more focused form. Arts integration defined the school as the community, and functioned as a means of giving mental and emotional balance in living. Curriculum balanced the role of the individual and the

social group in order to make students better citizens in the environment wherein they lived. Units of instruction having democratic themes became available for art teachers (Winslow, 1939). The neglect of the standards of aesthetics became a concern of educational leaders (Ege, 1941).

Logan (1955) identified three essential works published in 1940, which provided perspective for the arts during that period. The Progressive Education Association (PEA) believed in a curriculum which was supportive of the inquisitive nature of students and the integrative nature of life. In *Visual Arts in General Education*, D'Amico and Ostrander (1940) focused on the psychological emphasis of integrating the individual through the arts. Logan gave Cole credit as “the most widely read contributor of distinctively personal teaching methods” in the 1940s (Logan, 1955, p. 209). She compiled her articles into *Arts in the Classroom* (1940). Cole was said to have integrated the arts into her classroom activities as easily as one might incorporate reading. She thought that children who felt "submerged or persecuted" could find an outlet through personal and creative expression.

D'Amico and Ostrander (1940) described integrated curriculum. They noted that when curriculum was so planned, teachers developed learning experiences without having considered or even seen the students. They described the teachers' efforts as “superficial.” An “integrated curriculum” should “only be a minor and indirect concern,” (1940, p. 82). D'Amico and Ostrander declared that curriculum planning should begin with the "conception of the integrated student" (p. 82). Integrative curriculum was the alternative offered. Curriculum planners began by examining the needs of their students. Arts production and performance, physical education, and science should be used to “improve emotional development and physical health as a means to integration of the individual” (p. 82).

## **World War II and Arts Integration**

Art integration during the war years focused on developing the emotional life of every child. Art instruction was designed to bring desirable adjustments to the student's lives through art experiences. Arts educators were expected to integrate within themselves and within the classes three areas: acquisition of technical knowledge, the techniques of art's unique pedagogy, and development of a proper cultural background. The purpose of art education was the development of large concepts. Such concepts focused the student's personality in such a way as to habituate the productive use of leisure time (Lancelot, 1929; Tyler, 1949). Secondly, these concepts were to contribute to joy and richness of life; and lastly, to develop the "gifted child" to be a skilled producer of arts. These large integrated objectives were accomplished through the "doing" of art (Ege, 1941). The PEA's Eight-Year Study saw curriculum reorganized into two themes: the cultural epoch, and units based on contemporary life (Logan, 1955). The PEA saw life as integrated and advocated the position that the curriculum should also be integrated in a fashion similar to the fourth approach, problem solving, that Eisner (2002) identified. Such a search for arts integration continued well into the late 1950s. The importance of arts integration was recognized as a necessary endeavor for all to seek, thus becoming aesthetically sensitive, productive citizens (Dressel, 1958).

## **The Modern Era**

Arts generally, and arts integration in particular, began a descent as *Sputnik* circled the Earth in 1957. Arts continued to fall from favor with the policymakers when *A Nation at Risk* was published in 1983. These two events changed the way public education was perceived and the manner in which elementary general educators were prepared. It would be ten years before arts integration would make its next strong appearance.

The 1990s saw interesting new examples of arts integration. The Chicago Arts Partnership in Education appeared to have been one of the most well-studied and successful examples. Arts integration was offered as a “strategy for engaging students more fully with the traditional academic curriculum” (Weismann, 2004, p. 18). Partnerships were organized between schools and artists on long-term bases. Artists became part of the school. The artist worked with the generalist teachers to expand their lessons. Together they explored ideas on how to use the tool subjects (English, mathematics, science, and social studies) to “serve” in the creation of art. One key requirement was that the generalist teacher participated alongside the students. The goal was for the teachers to continue the integration of the curriculum irrespective of the presence or absence of the artist.

### **Louisiana’s Music and Visual Arts Programs**

The history of music in Louisiana schools, as a formal obligation of the schools for which the state accepts supervisory responsibility, can be traced to the middle 1930s with the appointment of Dr. Samuel T. Burns as Director of the Division of Music (Louisiana Department of Education (LDE), 1935). There were numerous early efforts through bulletins, directives, and standards documents to define its place in the curriculum. The goals and objectives of music programs have remained consistent with the goals and objectives of the Music Educators National Conference but have been modified to reflect changes when the state goals for overall curriculum were modified.

The goal of music programs in Louisiana was to make excellent music education a vital part of the state. The aim was to make every child desire to listen to music and experience good music so that music of a greater variety would become a part of the student’s growth experience. The long-term goal was better music in the home, church, and community. The musical life of the state provides a fuller life when all students listen to diverse, “high-quality” music and

communities develop and support choruses, orchestras, and bands. This was to be achieved through offering specialized music instruction in three categories: elementary general music, high school music appreciation, and performance instruction in instrumental and vocal ensembles (LDE, 1937).

The history of visual arts education in Louisiana schools began with Irma S. Willard in 1948 being appointed by newly-elected Superintendent S. M. Jackson. He established the aims of art education for Louisiana consistent with the National Art Education Association's creed. Among the outcomes expected was the development of the student's ability to integrate the imaginative, creative, intellectual, emotional, and manual capabilities. Responsibility and social maturity were emphasized as essential in encountering the problems, ideals, and goals of others. Its central functions encouraged freedom of expression, emphasized emotional and spiritual values, integrated human capacity and universalized human expression. Visual arts education was to formalize exploration and guide experimentation in many media. While its roots were to be in everyday experiences, its major purpose was to focus human understanding of the centrality of aesthetics (LDE, 1950).

In 1973 the curriculum guides were revised to focus on career education. Curriculum guides emphasized those skills which could be applied across career objectives. In 1981 another shift in focus was made to fit within the competency-based education movement emphasizing knowledge about music as much as performance in music. These were revised again in 1992-1993, recognizing the dominance of Discipline Based Arts Education (Greer, 1984). In 1995-1997 all content areas were redeveloped from the standpoint of standards-based education (outcome-based education). This emphasized that human creativity was the center of all academic functioning. Maintaining this focus, the visual and performing arts standards were again rewritten in 2003 to make them more assessable under conventional evaluation processes.

The *Louisiana Handbook for School Administrators* (Bulletin 741) contains the policies of the Board of Elementary and Secondary Education (BESE). Required minimum times for eighth-grade students ranges from 125 to 250 minutes for health, music, arts, and crafts. However, if a student scored below the “basic” level on English language arts or mathematics sections of the LEAP test, then the required arts instructional minutes became recommended (LDE, 2008a). Anecdotal evidence indicated that low-income and minority students were directed away from arts courses to receive more instruction in mathematics and English language arts irrespective of the actual student performance scores (Dryden, 1992; McMurrer, 2007; Rothstein & Jacobsen, 2006; Rothstein, Jacobsen, & Wilder, 2008; Zastrow, 2004).

The 2007 Louisiana State Legislature, Act 175 (La. Rev. Stat.17:7 {26}) required that the BESE develop, adopt, and provide for the implementation of a visual arts curriculum and a performing arts curriculum in the public schools. It also provided implementation timelines and requirements, as well as provided for the development of curriculum guides. It further required professional development in visual arts and performing arts for teachers and administrators.

During the 2007-2008 school year, the Louisiana Department of Education collaborated and consulted with the Louisiana Division of the Arts to assemble committees of arts educators, classroom teachers, teaching artists, administrators, and university professors to revise the curriculum guides based on the current *Louisiana Arts Content Standards* (LDE, 2003). Beginning with the 2010-2011 school year, all public school students in kindergarten through grade eight shall have sixty minutes of visual arts and sixty minutes of performing arts instruction each week and all public high schools will provide instruction in the visual and performing arts.

### **Louisiana’s Curriculum Initiatives and High Stakes Testing**

The roots of high stakes testing in Louisiana are traced to Act 750 of the 1979 Legislative session (Acts 1979, No. 750). For the first time, the “Louisiana Competency Based Education



Program,” included the Louisiana Educational Assessment Program as a measure of student performance. Statewide curriculum standards were established for required subjects effective in the 1981-1982 school year (La. Rev. Stat. 17: 24.4).

Successful scoring on such tests became the primary, although not sole, criterion for promotion or credit. The test score was given the most weight and was the primary means by which students were promoted until the 1999-2000 school year, wherein, achieving a passing score on the state test became required for promotion or credit. School accountability is measured by a school performance score (SPS), first assigned in 1999. Test scores consisted of 90% of the SPS (LDE, 2008b). This process made testing the primary criterion for promotion and school accountability. It was at this point that the current National Assessment for Educational Progress (NAEP) standard of rigor became mandatory for Louisiana tests (LA. Rev. Stat. 17:24.4). This testing program defined student proficiency in English language arts, mathematics, science, and social studies. Louisiana’s competency based education program was used to meet the requirements of the reauthorization of the Elementary and Secondary Education Act of 2002, NCLB (LDE, 2008b).

### **Statement of the Problem**

The current accountability movement (NCLB) recognizes the arts as a component of the core curriculum necessary for full development of all students. Seidel (2008; Seidel, Tishman, Winner, Hetland, & Palmer, 2009) noted that many children in the United States have little access to formal arts instruction. He asserted that this remains a critical national challenge. The Government Accounting Office (2009) reported that schools with a majority of students who were low-income, racial or ethnic minorities, limited English proficient, or schools identified as needing improvement, i.e., not meeting annual yearly progress, were significantly more likely to report a decrease in instructional time for the arts. This decrease in arts instruction was based

upon the assumption that it was more important for students to spend additional time in these “tested” generative subjects (i.e., English, mathematics, science, and social studies) than it was for them to develop the knowledge, skills, and habits which are unique to instruction in the arts (National Task Force on the Arts in Education, 2009).

The emphasis on testing in English, mathematics, science, and social studies has caused Louisiana school districts to exercise an option allowing certain students to be reassigned from the arts for additional instruction in English and mathematics. The *Louisiana Handbook for School Administrators* (Bulletin 741) states that “For students in grades 5-8 who have scored below the Basic level on LEAP21 in English language arts or mathematics, the minimum time requirements in health, music, arts and crafts, or electives are suggested in lieu of required” (§2313. F. 3.) (LDE, 2008a, 45).

Several studies have suggested that there is a trend wherein students participating in the arts education programs perform consistently higher in language arts and mathematics. Thus, the question is whether this policy exception is justified by an analysis of student performance in English and mathematics while adhering to the equal protection requirement of full access to all subjects pursuant to the constitutional mandate that students should have equal opportunity to develop to their full potential (Louisiana Constitution Article VIII Preamble, 1974). Does this exception to statutory language violate the constitutional principle of providing each student with equal access by denying full participation in the arts? Is the assumption that students would achieve more with additional time in English and mathematics justified by comparing performance on the eighth grade cumulative tests?

### **Purpose of the Study**

The original purpose of this study was to compare eighth grade English and mathematics test scores, as measured by LEAP, of those students whose schedule indicated that they received

the mandated instruction in music and visual arts with the ELA and math test scores of those students whose schedule indicated that they did not receive instruction in order to receive additional academic time in the tested subjects.

Louisiana curriculum statutes require students in grades K-8 to experience at least two hours of formal music and arts instruction each week (LDE, 2008a; La. Rev. Stat. 17:7 {26}). *Bulletin 741* allows schools to exempt students from this instruction if the student had below basic scores on state mandated tests (see Appendix B). This study examined the test score results of those students who were enrolled in music or visual arts classes in the benchmark testing year for middle grades. Did the students who participated in the arts earn lower scores than those in the control group who received more instruction in the tested areas? The curriculum question was whether decreasing time spent on direct instruction in English language arts or mathematics in order to provide legally required arts instruction resulted in diminished performance on the benchmark tests (LEAP).

Literature suggests a positive relationship between intense formal study of the arts and higher performance levels in the tested subjects. There appeared to be an even stronger positive correlation when the population was those students who live in poverty. The Census 2000 School District Tabulation (National Center for Education Statistics, 2000) documented that Louisiana's public school students' poverty level was among the highest in the nation. Seaman (1999) analyzed ten years of standardized scores in South Carolina schools matched by socio-economic data in the Arts in the Basic Curriculum Project. Weissman (2004) reported studies of the Chicago Arts Partnerships in Education and Arts for Academic Achievement in Minnesota. The aforementioned studies supported Weisman's proposition that "evidence clearly leads to the conclusion that arts integration is an enormously powerful strategic resource for improving education, particularly in schools that serve low performing students" (p. 132). In Tucson,

Sobolew-Shubin (2004) examined the effects of “Opening Minds through the Arts,” finding positive correlations between arts participation and performance on measures of English and mathematics performances.

Kvet (1985) studied sixth graders’ English and math scores who were excused from a portion of the common-core content time to perform in instrumental music. Students, of low socio-economic status, excused to perform in regular class time, performed as well as students who spent the total allocated time in class. Dryden (1992) studied fifth grade students participating in instrumental music with reduced time for reading and math instruction. Their performance on the Comprehensive Test of Basic Skills tests was not lower than those spending the full time in reading and math instruction. Schneider and Klotz (2000) examined California Achievement Test scores for students who performed in instrumental and choral ensembles, or athletics, and those who did not participate in either. Data was longitudinal for students in grades five through nine. Mean scores for musicians were higher than for non-musicians or athletes. No study has been found documenting that this research has been conducted in Louisiana middle-level schools whose student bodies are primarily from homes which meet Federal poverty level indices.

Professional literature in the middle-level education field suggests that visual and performing arts education are a core component of effective middle-level education. Students from low socio-economic backgrounds are often exempted from the arts requirements so that they can spend that portion of their academic day in activities directly related to English language arts and mathematics. Is this exclusion justified by comparing similar students’ performances on required common-core tests between those with formal arts training and those exempted for the purposes of additional instruction in English and mathematics? This study examined whether excluding students from required instruction in music and the visual arts resulted in higher performance on English language arts and mathematics tests.

## Research Objectives

This study had three main objectives, inquiring about the possible effects of

- I. music course enrollment as a predictor of success in ELA and math test scores;
- II. visual arts course enrollment as a predictor of success in ELA and math test scores; and
- III. music and visual arts (dual) course enrollment as a predictor of success in ELA and math test scores.

This study posed the following questions:

- I.A.1. Did middle and high SES eighth grade students who were exempted from formal music study have significantly higher LEAP English language arts scores than their peers enrolled in music courses?
- I.A.2. Did low SES eighth grade students who were exempted from formal music study have significantly higher LEAP English language arts scores than their peers enrolled in music courses?
- I.A.3. Did eighth grade students who were exempted from formal music study have significantly higher LEAP English language arts scores than their peers enrolled in music courses?
- I.A.4. Did Black eighth grade students who were exempted from formal music study have significantly higher LEAP English language arts scores than their peers enrolled in music courses?
- I.A.5. Did White eighth grade students who were exempted from formal music study have significantly higher LEAP English language arts scores than their peers enrolled in music courses?
- I.B.1. Did middle and high SES eighth grade students who were exempted from formal music study have significantly higher LEAP mathematics scores than their peers enrolled in music courses?

- I.B.2. Did low SES eighth grade students who were exempted from formal music study have significantly higher LEAP mathematics scores than their peers enrolled in music courses?
- I.B.3. Did eighth grade students who were exempted from formal music study have significantly higher LEAP mathematics scores than their peers enrolled in music courses?
- I.B.4. Did Black eighth grade students who were exempted from formal music study have significantly higher LEAP mathematics scores than their peers enrolled in music courses?
- I.B.5. Did White eighth grade students who were exempted from formal music study have significantly higher LEAP mathematics scores than their peers enrolled in music courses?
- II.A.1. Did middle and high SES eighth grade students who were exempted from formal visual arts study have significantly higher LEAP English language arts scores than their peers enrolled in visual arts courses?
- II.A.2. Did low SES eighth grade students who were exempted from formal visual arts study have significantly higher LEAP English language arts scores than their peers enrolled in visual arts courses?
- II.A.3. Did eighth grade students who were exempted from formal visual arts study have significantly higher LEAP English language arts scores than their peers enrolled in visual arts courses?
- II.A.4. Did Black eighth grade students who were exempted from formal visual arts study have significantly higher LEAP English language arts scores than their peers enrolled in visual arts courses?
- II.A.5. Did White eighth grade students who were exempted from formal visual arts study have significantly higher LEAP English language arts scores than their peers enrolled in visual arts courses?

- II.B.1. Did middle and high SES eighth grade students who were exempted from formal visual arts study have significantly higher LEAP mathematics scores than their peers enrolled in visual arts courses?
- II.B.2. Did low SES eighth grade students who were exempted from formal visual arts study have significantly higher LEAP mathematics scores than their peers enrolled in visual arts courses?
- II.B.3. Did eighth grade students who were exempted from formal visual arts study have significantly higher LEAP mathematics scores than their peers enrolled in visual arts courses?
- II.B.4. Did Black eighth grade students who were exempted from formal visual arts study have significantly higher LEAP mathematics scores than their peers enrolled in visual arts courses?
- II.B.5. Did White eighth grade students who were exempted from formal visual arts study have significantly higher LEAP mathematics scores than their peers enrolled in visual arts courses?
- III.A.1. Did middle and high SES eighth grade students who were exempted from formal arts study have significantly higher LEAP English language arts scores than their peers simultaneously enrolled in music and visual arts courses?
- III.A.2. Did low SES eighth grade students who were exempted from formal arts study have significantly higher LEAP English language arts scores than their peers simultaneously enrolled in music and visual arts courses?
- III.A.3. Did eighth grade students who were exempted from formal arts study have significantly higher LEAP English language arts scores than their peers simultaneously enrolled in music and visual arts courses?

III.A.4. Did Black eighth grade students who were exempted from formal arts study have significantly higher LEAP English language arts scores than their peers simultaneously enrolled in music and visual arts?

III.A.5. Did White eighth grade students who were exempted from formal arts study have significantly higher LEAP English language arts scores than their peers simultaneously enrolled in music and visual arts?

III.B.1. Did middle and high SES eighth grade students who were exempted from formal arts study have significantly higher LEAP mathematics scores than their peers simultaneously enrolled in music and visual arts courses?

III.B.2. Did low SES eighth grade students who were exempted from formal arts study have significantly higher LEAP mathematics scores than their peers simultaneously enrolled in music and visual arts courses?

III.B.3. Did eighth grade students who were exempted from formal arts study have significantly higher LEAP mathematics scores than their peers simultaneously enrolled in music and visual arts courses?

III.B.4. Did Black eighth grade students who were exempted from formal arts study have significantly higher LEAP mathematics scores than their peers simultaneously enrolled in music and visual arts?

III.B.5. Did White eighth grade students who were exempted from formal arts study have significantly higher LEAP mathematics scores than their peers simultaneously enrolled in music and visual arts?

### **Significance of the Study**

This study is significant in that it contributes to previous research examining the arts as an essential part of a whole curriculum, including its role in the development of a creative



economy. How does arts instruction relate to the acquisition of those generative skills generally required by society for a citizen to exercise his or her full rights and assume full responsibilities? If the results indicate that students are deprived of arts with no gain, then there is a basis to argue in favor of arts education for all students.

This study reveals that direct experience in the arts, thus reducing the proportion of the school day spent in direct English language arts and mathematics instruction, had no impact upon nor hindered the full development of societally required skills in English or mathematics. In a recent online debate Horowitz (2008), arts education researcher at Teachers College, Columbia University, wrote,

There really is an arts education apartheid in our schools. To generalize (knowing there are many exceptions) the “haves” have it, and the “have nots” don't. That is, the children of the affluent are more likely to have some arts education, while the others must drill, drill, drill on their tests...don't read a book, or sing a song, or draw, or run around the schoolyard in recess, because every minute is precious if our scores are to go up and we are to compete: with the other schools, states, countries, continents. ([artsjournal.com](http://artsjournal.com))

A set of findings indicates that formal study in the arts may enhance the relevance of, and improve the skills, in English and mathematics. Such a finding would give credence to proponents of “arts for all” as an essential development of full citizens. In either case this study aides state policymakers as they make decisions about required use of curriculum time in grades five through eight in Louisiana public schools. The content subject to testing on the eighth grade examinations is the cumulative examination of the required content for grades five through eight. A high percentage of Louisiana middle school students come from poverty. A common finding in education research supports a high correlation between poverty in schools and low performance on standardized tests (Rothstein, 2008; Rothstein & Jacobsen, 2006; Sirin, 2005). The Bulletin 741 exception for low performing students often denies arts performance experiences for low socio-economic students. Literature suggested a positive relationship between intense formal study of the arts and higher performance levels in English and

mathematics. There appeared to be an even stronger positive correlation with students from poverty. This study sought to determine if the opportunity costs of extra time in English and mathematics were justified by an increased test score performance in these subjects. Did the failure to provide adequate arts experiences limit equal access thereby denying a whole education essential for full participation? Did additional time in English and mathematics result in significantly greater performance on the eighth grade English and mathematics cumulative tests? Was this exception to statutory requirements justified by a commensurate increase in English and mathematics scores?

### **Delimitations of the Study**

Conclusions and implications of this study were limited to curriculum decisions applicable to students of middle-level age, 10-15. Implications for students who lived at poverty levels, of this age range, may well be valid and significant. No attempt was made to study students who were not in public school nor at different grade levels.

### **Limitations of the Study**

This study was framed primarily as an *ex post facto* examination of student enrollment and achievement data using the 2007-2008 eighth-grade cohort. The research design used one year's data at the end of the middle grades years, the results may only be used to assist policymakers to make informed decisions relevant to existing exceptions academic requirements and their effectiveness in achieving specific academic targets.

### **Definition of Terms**

Academic excellence – A middle-level principle defined as curriculum, instruction, and assessment that are challenging, integrative, and exploratory (NFAMGR, 2000).

Arts integration – Curricular experiences designed using arts and non-arts learning to inform student understanding (Burnaford, 2007, p. 18-19; Eisner, 2002).

Course code – A unique six-digit number used to identify the content areas studied.

Developmental responsiveness – A middle-level principle defined as student-centered content to support individual students' experiences (NFAMGR, 2000).

Exploration – Education experiences that allow students to explore life roles and quality use of recreational and leisure time pursuits (NMSA, 2003, p. 24).

Four/Four/Four plan – An organizational structure that called for four years of elementary education, four years of middle school, and four years of secondary education (George & Alexander, 1993).

Eight/Four plan – An organizational structure that called for eight years of elementary education and four years of secondary education; commonly thought of as high school (NEA, 1894).

Integrated arts – A curricular structure where the arts content is employed to assist students in learning content in non-arts areas (Eisner, 2002, p. 39).

Integrative – Coherent curriculum concepts irrespective of content boundaries which enable students to connect with life roles and applications (NMSA, 2003, p. 22).

Junior high school – The three grades after elementary school were recommended to be grades 7-9 (U. S. Bureau of Education, 1918, p. 18-19).

LEAP21 – The Louisiana Educational Assessment Program (LEAP) is a criterion-referenced test administered in grade 8 (LDE, 2008c, p. 1).

Middle grades education – A school's organization, curriculum, pedagogy, and programs that are based upon the developmental readiness, needs, and interests of young adolescents (NMSA, 2003, p. 1).

Middle school – An organizational structure, typically grades 5-8 or 6-8 (Jackson & Davis, 2000, p. 4).

Music participation – Eighth grade students enrolled in courses having course codes for band, choir, orchestra, or general music (LDE).

Six/Six plan – An organizational structure that calls for six years of elementary education and six years of secondary education (U.S. Bureau of Education, 1913a).

Six/Three/Three plan – An organizational structure that calls for six years of elementary education, three years of junior high school, and three years of secondary education (U. S. Bureau of Education, 1913a).

Six/Two/Four plan – An organizational structure that calls for six years of elementary education, two years of junior high school, and four years of secondary education (George & Alexander, 1993).

Socially equitable – A middle-level principle defined as a supportive school environment based upon a shared vision of high expectations for all students and faculty (NFAMGR, 2000).

Tested subjects- The subject matter content that all students are required to take and be tested upon are English language arts, mathematics, science, and social studies (LDE, 2008b).

Visual arts participants – Eighth grade students enrolled in courses having course codes for visual arts (LDE).

## CHAPTER II

### REVIEW OF THE LITERATURE

#### **Introduction**

Chapter two provides a review of the literature relevant to the study. It begins with an examination of whole child development and the role of the arts. Theories underlying the current demand for aesthetic, creative curriculum follow. The conceptual material on arts contributions to imagination, creativity, and innovation are introduced. Attendant effective learning environments and experiences, effective middle-level principles and concepts, and arts integration were examined. Arts education theories and socio-economic comparisons, along with arts education research as it relates to socio-economic comparisons, reading and language skills, mathematics skills, social skills development, and thinking skills were also examined. A summary closes the chapter.

Preliminary data sources for arts experiences were derived from *Critical Links*, a compendium of sixty-two research studies collected and reviewed by the Arts Education Partnership conducted during the years 1976-2001. This included international studies. Twenty-four primary sources cited were reviewed. The main focus was on studies of middle-level students between the ages of ten and fifteen. However, all studies which included students grades K–12 were reviewed.

#### **Whole Child Development**

After examining curriculum from nations who are outperforming the United States, Munson (2009) identified the commonality as a “dedication to educating their children deeply in a wide range of subjects” (p. iii) including the arts. Reading, writing, and arithmetic are important to the students’ education, but they cannot be the ends of education. They are a necessary means to an education. “The gaining of knowledge by the pupil is not, then, to be

regarded as the true end of our teaching, but only as a *means* to the true ends, which lie beyond” (Lancelot, 1929, p. 5). The arts, through their exploration of the same human needs, unity and variety, are vital because through these basic explorations life can be lived to its fullest (Dewey, 1909). It is insufficient to think that if students are kept at an activity long enough they can be “trained” to complete any task. Dewey insisted that “more” content is not “better” content.

It is necessary that curriculum develop persistence, exploration of self, cooperative citizenship, interpersonal skills, aesthetic awareness and that it prepares students to apply knowledge in their day-to-day decision making. Thus, developmentally appropriate learning requires that knowledge be moved from the declarative and procedural levels to a contextual level. “The major mission of the field of art education is to facilitate the creative development of the child” (Eisner, 1972, p. 56).

Content, in and of itself, is of little or no value until it is made a part of the student’s activities, habits, and desires (Dewey, 1909). The personality, in order to employ the content, must first develop initiative, insistence, persistence, courage, and industry. Educators recognize that the student comes to the school as an individual within a society and brings with him or her the whole array of experiences common to societal existence. “The child is one, and he must either live his social life as an integral unified being, or suffer loss and create friction. ... The child is an organic whole intellectually, socially, and morally, as well as physically” (original gender use; Dewey, 1909, p. 8).

As a whole being, students experience theaters, galleries, museums, and concert halls as essential elements of an organized community. The arts inherent in the social institutions bring “color, grace and dignity, into them” (Dewey, 1934, p. 7). Historically, as part of educating a total citizen, involvement in and through the arts has been essential to all societies. Each society uses the visual and performing arts to communicate that which is commonly found to be most valuable

to the community. The ability to adapt and respond requires one to alter one's own mind through experiences. This is best transmitted through the creative processes (Eisner, 2002).

The needs of the whole child are the primary principle by which curriculum theorists decide what is essential and what is superfluous. "The first step in curriculum-making is to set up a basic philosophy. This philosophy should . . . formulate a philosophy of life and the destiny of man as far as these ultimate goals may be discerned" (Courtis, 1926, p. 92). Lancelot (1944) added:

The schoolmasters and teachers of long ago thought that education should be intellectual, social, cultural, moral, or spiritual but that it should include nothing so commonplace as physical, or manual, activities. . . . Yet it is generally agreed at present that education should be of the whole child, and further more that the manual abilities included in it should consist not merely of those acquired in sports or picked up out of school. (p. 136)

This requires a cooperative effort between input from the learner and experience from the educator (Beane, 1993, 1997; Eisner, 2002; Smith, 2006). Educating the whole child recognizes that human beings derive meaning from input to all five senses. The role of education requires awareness of, and sensitivity to, the natural sensory, neurological, and differentiation responses to input. Such progressive differentiation enabled learners to form concepts. Symbolic systems, reading, writing, the arts, become proxy means of communicating concepts (Eisner, 2002; Taylor & Baker, 2001). When one uses representation, one influences more than what was represented; it changes the learning experience (Eisner, 2002). Proper balance of these types of representation defines the quality of symbolic learning. Students use the arts to connect to the external environment, employ imagination to evoke an emotional response, and develop personal meaning. Education has as its major aim the development of the student's mind through all expressive forms (Eisner, 2002; Smith, 2006).

## **Role of the Arts**

Eisner (2002) encouraged educators to find as many ways as possible to help students communicate and organize knowledge. He cautioned curriculum designers about not turning the arts into the “handmaidens” (p. 28) of the other content areas. Eisner identified a diversity of views and principles regarding art education. He argued that students’ curricular experiences offer ways of self-expression to allow them to choose those best communicating their messages. Curriculum must develop as part of a real-world structure and not isolated from it. In *Arts and the Creation of Mind*, Eisner (2002) explained why the arts are the essential center of the experiences of students. Aesthetic theory guides instruction in the arts to access sensory qualities of students’ experiences, using arts education to develop the students’ minds. Young (1999) strengthens the case for how dance, music, theatre, and visual arts contribute to cognition of non-artistic phenomena through the use of interpretive representation and affective representation.

“Education is the process of learning how to invent yourself” (Eisner, 2002, p. 1). Such a purpose statement for education sets the perspective for asking what role the various components of education should play. No component is more central to understanding this definition of education, which is primarily about developing the creative process unique to human beings. The arts are the primary means through which culture, human experience transmitted from one generation to another, is created. Such a transmission has become the basis for developing those mental processes labeled concepts. Through the use of these concepts students engage in uniquely human behavior. One can imagine possibilities that have not been yet encountered and can create, in the public sphere, new possibilities of which we have dreamed in our private consciousness. The arts enable learners to share these possibilities in concrete ways (Eisner, 2002).

Arts educators prepare students to experience the world in ways that are “intrinsically satisfying and significant.” Arts should be learned for arts’ sake (Eisner, 2002, p. 43). Dewey



(1934) and Eisner wrote that arts education develops artistic intelligence through arts literacy. Arts education is the culmination of the common-core content areas. Students take the content and combine it with raw materials to create representations of knowledge that are aesthetically pleasing and that demonstrate learning. Only when something is produced or performed has learning occurred. Through the act of creation, students experience learning. Through the production of art, students access what is best in them and bring it to the surface (Lancelot, 1929; Taylor & Baker, 2003). Finally, arts education assists students to secure aesthetic forms of experience throughout their lives (Dewey, 1899, 1934; Eisner, 2002; Tyler, 1949).

An early explication of the essential role of the arts was included in *The School and Society* when Dewey (1899) examined the work of twelve-year-olds and described the discipline that the students exhibited. He described patience, thoroughness, and perseverance. What he identified would later become the standards of arts education. The standards represented in the *Discipline Based Arts Education* (Greer, 1984) and *Louisiana Arts Content Standards* (LDE, 2003) are creative expression, aesthetic perception, historical and cultural perspective, and critical analysis. Imbalance in applying the principles has contributed to the isolation of arts education.

Ruppert (2006) clearly outlined six major benefits associated with study of the arts and student achievement from *Critical Links* (Fiske, 1999). The benefits were reading and language skills, mathematics skills, thinking skills, social skills, motivation to learn, and positive school environment. She stated that the evidence is clear that study of the arts contributes to student academic success, as currently defined through the use of test scores.

The current debate, in education and public-policy circles, questions how the arts should function within the schools' programs of study to achieve this aim. Grumet (2004) suggested that arts education ensures integrity and wholeness. In the arts experience, relationships among

students, parents, teachers, and the interactions of various subject matter are interdependent rather than isolated and separate. Jerome Kagan (2009), renowned Harvard psychology professor, outlined six reasons for arts education. He stated that research was needed to support all of these reasons. First, arts education boosted the self-confidence of students struggling in reading and arithmetic. Second, arts education may help students develop a sense of self agency. Third, art and music education required that the students develop schematic and procedural knowledge. Fourth, arts education provided means for students to create something of beauty, in which others could share. Fifth, it provided a structured way for students to collaborate towards an end goal. Finally, Kagan asserted that arts education provides students a way to experience and express feelings or conflicts that are not easily put into words. The role of arts education has evolved over a long period of time and is still in formative development as to 21st century applications.

### **Theories of Creative Curriculum**

American schools over the last twenty-five years have favored students with strengths in memory and analytic ability. Schools have not respected the principle that anyone can develop creative habits. They have rewarded intellectual conformity with the end being analysis rather than complex reasoning and creativity. Students who were “high creative and high practical” were more diverse in ethnicity, socio-economic, and cultural backgrounds (Sternberg, 2006). As populations of students become more diverse, equal opportunity in education demands different theories of what curriculum assesses. Such students were typically not taught or assessed with creativity as the goal. Greene (1995) connected the arts to discovering cultural diversity, to creating community, and to become of the world. Haste (2008) and Davis (2008) independently presented key competencies—managing ambiguity and diversity, embracing agency and responsibility, finding and sustaining community, managing emotion, technological competence.

Arts education provides the experiences for students to practice these competencies. This requires a great range of habits of mind and a great number of complex skills, including literacy in multiple media (i.e., arts). Thus, students use creativity to teach themselves. Imagining that reality can be different is the first step toward creativity and innovation. Recognition that each individual human being is incomplete until he or she connects with others and their ideas in order to achieve wholeness is central to an effective education (Fowler, 1996; Root-Bernstein & Root-Bernstein, 1999).

As Pink (2005) indicated, the essential attribute for the effective citizen of this century will be creativity. Indications are strong that regular direct arts education experience becomes a part of the students' life-long learning and is certainly worthy of study by all students during the school day. Thus, arts are cognitively rigorous embodying the analytical, the rational, and the serious. They are equally rigorous from an affective perspective (Davis, 2008; Greene, 1995).

McCarthy, Ondaatje, Zakara, and Brooks (2004) conducted a meta-analysis exploring the following questions. What are the benefits associated with the arts? How they are created? How they accrue to individuals and the public through different forms of arts participation? They stated one of the findings as the need for policy designed to spread the benefits of arts by introducing greater numbers of Americans to engaging arts experiences. Another insight they reported was that in order to sustain the instrumental benefits, involvement in arts education must also be sustained. They found evidence suggesting that arts education produces individual and community benefits. They identified that those who study the arts were better able to self-evaluate and respond to feedback.

This current focus on developing creative citizens was recognized during the 1990s when Krathwohl and other students of Benjamin Bloom began to incorporate the distinctions of cognitive psychology that were developed since the original framework was completed in 1956.

The interactive nature of the cognitive process, documented in neuroscience, led to the redefinition of the taxonomy into the following divisions: Remember, Understand, Apply, Analyze, Evaluate, and Create. The necessity for all students to put elements together to form novel, coherent performances, and original products to face an ever-changing world was addressed. The outcomes of education were then documented as generate, plan, and produce (Krathwohl, 2002).

Hanna (2007) reported on the new Bloom's taxonomy developed primarily by Anderson and Krathwohl (2001), reflecting a realignment of thought relative to how learning takes place. The new taxonomy communicated the process of learning rather than the classification of the products of learning, as was done in the 1956 taxonomy (Appendix C). The 21st century concept that education must focus on imagination, creativity, and innovation as the primary outcome of education requires this new taxonomy of outcomes. Such realignment incorporates the affective and psychomotor aspects; the learning process moved beyond critical thinking and the more complex creative thinking emerges. A significant change is that the taxonomy is now three-dimensional including more than declarative knowledge, adding the procedural, conceptual, and meta-cognitive aspects essential to the ability to create. Summarily, the new taxonomy combines the cognitive processes and the knowledge domains necessary for complex creative resolution (Appendix D). Root-Bernstein and Root-Bernstein (1999) emphasize physicist Max Planck's assertion that science was really applied artistic creative imagination. Sternberg (2006), a neuroscientist, described creativity as personality, intelligence, knowledge, thinking styles, and motivation.

Learning and creating patterns (evidence) are thinking tools leading to creativity (Root-Bernstein & Root-Bernstein, 1999). The revision of the taxonomy elevates creativity to the most complex of the cognitive processes (Hanna, 2007). The creation of a unique product or

performance is the ultimate purpose of the cognitive process. By so doing this taxonomy is applied to the entire curriculum, including the performing and visual arts, within the possibility of assessment through performance. This taxonomy now provides a structure to better guide divergent thinking and inductive reasoning, both essential to creating (Hanna, 2007; Greene, 1995). Arts education can now be examined as a cognitive equal among the less complex content areas. The previous taxonomy provided no means to assess the worth of creativity and, through its limitations, marginalized these content areas to the specialized realm of aesthetic learning. A more comprehensive framework for examining sound and objective academic criteria now is available.

Imagination and its embodiment in instruction create intellectual possibility (Greene, 2001). This embodiment, aesthetic education, is instruction focused on nurturing cultural, appreciative, reflective, and participatory engagement with and through the arts. Such engagement enables learners to notice what is not usually noticed, and to incorporate works of art into their lives in such a way as to make them meaningful, vicarious learning. This interaction leads to making sense of incoherent fragments resulting in perceiving them as the focusing point of imagination. Aesthetic education never becomes static; it is always in process. Such curriculum is in continual pursuit of meaning, art being the most accessible means for bringing these capacities and energies to the creative process. Aesthetics is concerned with perception, sensation, and imagination, as they guide knowing, understanding, and feeling about the world (Greene, 2001).

Sainsbury (2005) stated that the 21st century economy is based on creative applications of knowledge (innovation). In an interview, Thomas Friedman said that economic success will require imagination as the primary determinant of who “wins” in the 21st century marketplace (Pink, 2008). The National Advisory Committee on Creative and Cultural Education reported a

need to meet economic, technological, social, and personal challenges. Education involves realizing the full capacities of all young people (1999).

The 21st Century Skills, essential for full participation in the knowledge based economy, are grouped under three headings: (1) learning and innovation skills; (2) information, media and technology skills; and (3) life and career skills. More specifically the benchmarks attendant to each of these headings document the essentiality of arts education as an effective medium for developing such human capacities as to enhance productivity in a democratic society (Partnership for 21st Century Skills, 2008).

Education empowers the young to make critical judgments and engage in imaginative thinking; thus, transforming reality through innovation. This minimally requires the development of languages, means to communication beyond verbal and mathematical (Greene, 1995). Although not a universal attribute, creativity now is essential in the economic workplace. Employers require people who innovate, communicate, collaborate, and make adaptations (Craft, 2008). The arts, in particular, empower visions of perspectives of unrealized possibilities. It is through the creative act that the world renews itself. Education provides students with tools and skills so that they can look at their reality and envision something better (i.e., innovation).

In July of 2008, the researcher participated in the National Endowment for the Arts' second Education Leadership Institute. A renewed focus on these three essential components of competency has begun. Deasy (2008) wrote about the value of imagination, creativity, and innovation for economics and democracy. He asserted that the development of imagination, creativity, and innovation skills should be integrated into all content areas and that learning should be interdisciplinary.

Participants read Dana Gioia's, National Endowment for the Arts Chairman, commencement address. "The real purpose of arts education is to create complete human beings

capable of leading successful and productive lives in a free society” (p. 3). Reporting on American civic participation, he remarked that participation in the arts had a significant influence. The democratic purpose of education has been affirmed and will be the new focus in the 21st century workplace (Gioia, 2007). Refereed articles included studies explaining the corporate perspective of career readiness skills. Casner-Lotto and Barrington (2006) surveyed senior executives and human resource officers. These corporate leaders identified creativity and innovation as the most important component for economic progress of individual businesses and for the larger economy.

Lincoln Center Institute’s executive director, Noppe-Brandon (2008), described the capacities which form a framework to develop and measure imagination and its impact on the curriculum (Holzer, 2007). To achieve this curricular aim, instruction requires that students develop keen observation skills and habits, embody all the senses into learning, question through exploration, make connections, identify patterns, exhibit empathy, create meaning, and take action to synthesize knowledge, reflect and assess. These actions occur naturally when students “have the space to learn” (Noppe-Brandon, 2008). The curricular work conducted at Lincoln Center Institute is theoretically based on Maxine Greene’s cognitive ideas of aesthetic education connecting the arts to concepts of diversity and citizenship.

### **Effective Learning Environments and Experiences**

In Louisiana, the requirement for quality education is that the learning environment and experiences be humane, just, and excellent. It is the constitutional and statutory responsibility of educators to create and maintain environments supportive of the preceding conditions. The maintenance of the learning environment is specifically required in the Preamble to Article VIII of the Louisiana State Constitution (1974). Developmental responsiveness and social equity are two essential guiding principles for educational effectiveness recognized by the National Forum

to Accelerate Middle Grades Reform (Lipsitz & West, 2006; NFAMGR, 2000). These principles as well as the characteristics and elements identified by National Middle School Association (NMSA, 2003, 2010) and Jackson and Davis (2000) provide educators and researchers with language to describe school environments supportive of quality education.

Developmental responsiveness is student-centered and sustained through using content to support individual students' experiences and environment. Educational practices and learning experiences grow from the child's own perspective (Dewey, 1938; Jackson & Davis, 2000; NMSA, 2003, 2010). Social equity requires a positive supportive learning environment based on a shared vision of high expectations for all students and faculty. Educators reported that rising test scores are due to highly-focused and energetic teaching essential to integrative experiences, consistently supporting motivation to learn (Lipsitz & West, 2006; Taylor & Baker, 2001).

Despite extensive documentation of the unique needs of early adolescents, a body of evidence suggests that the goal of meeting society's and students' needs has not been addressed. Educational decisions affecting middle-level students are still based largely on political will, economic expedience, and administrative convenience. Although best practice is clearly defined, implementation is the exception rather than the rule. At this time, the United States still leaves many of its early adolescents behind (Jackson & Davis, 2000; Lipsitz & West, 2006).

The school is a community. In order to prepare students for life after middle school, it creates a community inside the school (Dewey, 1902). Effective and successful learning environments are those that support the uniqueness of the student at this transitional moment. Dewey (1938) wrote that education was "essentially a social process." Middle-level students need experiences that provide them with the opportunities to learn socially. Dewey (1916, 1938) wrote that a better experience was provided to the students when the educator was the leader of learning experiences.



Exploration is the key to creating learning experiences for middle-level students. Students need to explore life-roles as they are learning. Content is relevant because it is selected from, and based on, life experiences. Education occurs when the student reorganizes experience and it influences subsequent experiences (Dewey, 1916). Students pursue a unified study of the artistic, the literary, the scientific, and the historical world. Students will not live in a stratified or perforated world; therefore, their experiences must be integrated, not isolated (Beane 1997; Dewey, 1899).

### **Effective Middle-Level Principles and Concepts**

The essential guiding principles of middle-level education are balancing *academic excellence*, *developmental responsiveness*, and *social equity*. The concepts guide effective practice, organizational structure, school and community relations, and curriculum. Using multiple qualitative research methodologies, Lipsitz and West (2006) described the selection of criteria to identify effective middle-level schools that balanced these criteria. Middle-level educators applied these concepts to identify “good” schools. Essential criteria were identified and endorsed by the National Forum to Accelerate Middle-Grades Reform (NFAMGR, 2000).

#### **Academic Excellence**

Lipsitz and West (2006) described academic excellence as incorporating at least three essential characteristics. Their work supported previous meta-studies conducted by the Carnegie Commission and the National Middle School Association (NMSA). Academic excellence was defined as curriculum, instruction, and assessment that are challenging, integrative, and exploratory. Assessments are embedded to promote learning rather than simply measure it (Jackson & Davis, 2000; NMSA, 2003). All students are supported to meet or exceed academic standards. Instructional strategies include a variety of challenging and engaging activities clearly related to the concepts and skills being developed.

Essential to this concept is Dewey's (1938) principle that education is at its best when it is first based on experience. Middle-level students learn best when they first "do," then systematically reflect on that which they have done. Central to this concept is that the teacher, as the purveyor of knowledge, takes the role of leading experiences; thus, pulling the best from within the student. Therefore, the formal organization of disciplinary subjects is made the servant of integrated learning experiences, rather than have the students' present needs subservient to arbitrary disciplinary boundaries (Dewey, 1938; Beane, 1997). This principle of middle-level learning is essential in order for the students to develop intellectually so that they may distinguish facts and question fallacies; thereby, developing complex adult reasoning.

### **Developmental Responsiveness**

The first requirement of developmental responsiveness is that the school provides access to comprehensive services that foster healthy physical, social, emotional, and intellectual development (Lipsitz & West, 2006). Developmental responsiveness is student-centered and sustained through employing content to support the individual students' experiences in the environment in which they are comfortable. Relationships are developed to assure the requisite interaction between adult advocates and students. Teaching practices and learning experiences respect and grow from the student's own perspectives (Jackson & Davis, 2000; NMSA, 2003).

The principle of developmental responsiveness requires middle-level educators to recognize that when students act, they individualize themselves; they cease to be a mass and become the intensely distinctive human beings. This level of responsiveness requires that educators recognize how to meet these relatively uncontrolled human beings where they are and develop their fullest potential. The educator's major role is to guide them through learning experiences (Beane, 1993; Dewey, 1899).

Eisner (1972) provides additional guidance into developmentally responsive structures. Several essential adult qualities require development during the middle-level years. Effective curriculum develops persistence, exploration of self, cooperative citizenship, interpersonal skills, and helps students apply knowledge in their day-to-day decision making. Thus, developmentally appropriate learning requires that knowledge be moved beyond the declarative and procedural levels to the contextual/meta-cognitive level.

Developmentally responsive principles recognize the critical role of developing healthy human growth practices as defined by Erikson (1968). His central theory in the development of youth identified *fidelity*, *faithfulness*, and *conformity to truth* as the central forces that youth must internalize in order to subordinate the practices of childhood. This process begins the development of the identity necessary to be successful in the adult world. Fidelity has two essential components—faithfulness and conformity to the truth. If either element is missing, fidelity has not been achieved. Blind uninformed faithfulness (loyalty) without the diligent pursuit of the truth (goodness, beauty) falls below the standard of fidelity.

### **Social Equity**

The principle of social equity requires a supportive school environment based upon a shared vision of high expectations for all students and faculty. Decision-making is participatory and involves all stake-holders through democratic processes (Beane, 2002). All students have equal valuable experiences in all classes and school activities (Jackson & Davis, 2000; NMSA, 2003). Educators reported that which accounts for the rising test scores, indicators of academic effectiveness, is highly-focused and energetic teaching (Lipsitz & West, 2006; Taylor & Baker, 2001).

Academic success is highly dependent on recognizing and meeting the students' needs, i.e., social equity (NMSA, 2003). Lipsitz's (1984) theoretical framework evolved from

identifying these needs through numerous case studies beginning in 1980. These middle schools represented a cross-section of United States middle-level education. She concluded that the students' inherent needs were for competence and achievement; self-exploration and definition; social interaction with peers and adults; physical activity; meaningful participation in school and community; routine, structures, and limits; and diversity. The essential instructional practices for middle-level education begin with a respect for accepting the learner where he or she is.

The middle-level learner exists in a concrete sensory reality, having little instinct for abstract combinations of the constructive impulse with the conversational (Beane, 1993). The exploratory nature of early adolescence requires that they first act and then observe the response to their actions. This tendency is to be directed into ways where it yields value and is of interest to the learner and valuable to the discipline (Dewey, 1899). The content of the lessons has an appropriate place within the expanding consciousness of the learner. It grows out of his or her own past experiences, and moves into application of decision making in further achievements and desire to learn (Dewey, 1902). No device or trick of method is to be resorted to in order to enlist "interest" (Beane, 1993, 1997). This requires that instruction be focused on the experience of the learners, meeting their present needs and interests in their worlds (Dewey, 1902).

Reimer (1992) recognized that social equity requires an aesthetic education built upon the pursuit of truth and beauty, full human development, and the improvement of personal and community life. Goodlad (1983) and Smith (1987) asserted that every student, if equity is to be achieved, must have equal access to a balanced, comprehensive, and sequential program of arts instruction taught by qualified teachers. Essentially, what the arts do best is open the doors to learning (Davis, 2008; Fowler, 1996). Since Fowler, Davis, and Smith emphasized the arts as representative ways of knowing, the arts are basic education.

### **Effective Practices**

Jackson and Davis (2000) bring these practices to a finer point when they emphasize that students learn more than common knowledge, they must be assisted to develop thinking habits. These are imbedded in the dispositions, the work habits of work and minds, that students must be led to develop (Rowson, 2008). While the content standards must be public and rigorous, they should not lead to a curriculum that is primarily viewed as difficult. Secondly, they are relevant to the concerns of students and are based on how students learn best, integrating declarative, procedural, and contextual knowledge. Conceptual integration is the guiding principle rather than rigid disciplinarity. The mental habits developed in such learning contexts include self-control, flexibility, reflectivity, dependability, and perseverance (Marzano & Pickering, 1997). “Place-based” learning requires embedding the work in a local setting, connecting the community to other related contexts, and adding value to others in the school and in the community (Haas & Nachtigal, 1998). This relevance moves difficult content to rigorous curriculum.

While flexibility in instructional means is evident, every student progresses to higher standards through mastering the critical concepts and processes that underlie the standards. Each school, as a distinct learning community, analyzes its state and local standards to determine if they provide an adequate high-quality basis for developing a coherent, engaging curriculum. Meeting this challenge requires that the entire curriculum be organized around important concepts and questions. The curriculum is drawn from, and reflects, the concerns of young adolescents. Work is oriented toward the assessments and the tasks students undertake to demonstrate their levels of knowledge and skills. Students seek patterns, to connect to and to comprehend the world around them and their place in it (Beane, 1993; Haas & Nachtigal, 1998).

Another central practice requires that concepts and their essential questions guide unit development. These essential questions foster creative, critical, and complex reasoning

(Tomlinson, 1998; Wiggins, 1998). In the case of essential questions, such units yield no single obvious answer and require the skills and content to answer them (Mitchell, 1996; Wiggins, 1998). Concepts and essential questions are grounded in content standards. Students' and teachers' questions and concerns, community concerns and resources, source material, etc., are used as topics for exploration. Standards are embedded in the concepts and questions that emerge from these other sources. Since the learning grows from experiences, it integrates multiracial and multiethnic materials and activities, such as music and role-playing. Students are presented with multiple perspectives to link the new concepts to their own experiences (Beane, 1997).

Assessment practices are sensitive to small gains that consistently monitor learning and lead to corrections in instruction (Jackson & Davis, 2000). Authentic assessments of performance help students develop the skills to assess their own progress, to reflect on what they understand. Reflection motivates students to seek the information and capacities needed. Such intrinsic motivation leads to lifelong learning (Mitchell, 1992). Middle-level instructional practices focus intellectual activities that are worthwhile, significant, meaningful, and similar to those of thriving adults. Such instruction requires three key criteria: construction of knowledge, disciplined inquiry, and value beyond school (Newmann, Marks, & Gamoran, 1995; Wehlage, Newmann, & Secada, 1996). Learners re-create and reinvent the cognitive systems they encounter, including language, literacy, and math. Authentic instruction addresses the construction of knowledge and requires students to engage in complex-reasoning (Zeleman, Daniels, & Hyde, 1998). Instructional practice keeps authentic achievement as the design principle.

Newmann (1996) confirms the value of authentic learning irrespective of social background. At the middle level, this suggests that students taught with methods focused on developing understanding and making connections to the outside world outperform their peers from more traditional classrooms in their use of complex skills. These students tend to perform

as well or better on traditional tests (Knapp, Shields, & Turnbull, 1992). Wiggins and McTighe (1998) argue that active learning is more effective and more engaging in preparing students for success on assessments. Such authentic instruction leads to products and performances which have immediate meaning to the students and value outside this school. The essential instructional practice is to help students self-assess and self-adjust their work as they progress.

### **Organizational Structure**

Democratic governance, meaningful participation in decision making relative to one's circumstances, is another essential practice for effective middle-grades schooling. Schools are organized and function through a system with structures and processes that are systematically inclusive, collaborative, and focused on student learning. The system gives all stakeholders in the school—educators, administrators, support staff, parents, students, and community members—a primary voice in planning and implementing school improvement efforts.

Decision-making processes in middle-grades schools suggest that governance is for communication, planning, evaluation, and accountability. It draws on the experience of school staff members and others to ensure that the organization behaves intelligently. Students develop greater knowledge and understanding of this governance principle; as teacher teams use knowledge of their students and democratic structures and processes to create learning communities (Carnegie Council on Adolescent Development, 1989).

Darling-Hammond (1997) found that democratic governance contributed to high achievement in students of all abilities and backgrounds. Student achievement increases substantially in schools with collaborative work cultures that foster a professional learning community dedicated to improving student learning outcomes (Fullan, 1998). When given support, time, and resources, democratic governance works to benefit learners (Glickman, 1998). Significant improvement in student achievement occurs when all members of the school

community focus simultaneously on transforming instruction and on developing the practices of strong democratic leadership (Jackson & Davis, 2000). Middle-grades students engage in thoughtful analysis and problem solving on matters that affect them (Dalin, 1998).

Another principle of effective middle-level education is that decisions are evidence driven. Collection and analysis of quantitative and qualitative data guide the school improvement plan. It requires at least five processes: creating a school-wide vision, assessing current status, setting priorities, developing strategic action plans, and evaluating changes in order to monitor progress. The sustained improvement of middle grades school students' learning requires a relentless focus on improving the quality of schooling (George & Alexander, 1993).

### **School Community Relations**

Another essential practice is the definition of community. This includes the structure of the community in the school and the relationship to the community outside the school. Community members, within and without the school, feel valued. Effective practice in middle-grades schools is not as much a system as it is a community. The interaction is not between design elements but between people (Jackson & Davis, 2000).

Large schools are divided into teams. This concept of internal community extends to teams who allocate time to collaboratively construct effective, developmentally appropriate curriculum, assessment, and instruction responsive to learners' needs and interests. The learning community operates so that differences in performance by race, class, or any other group characteristic are minimized and its support enables all students to succeed.

### **Curriculum**

The field of curriculum for schools in the United States emanates from the work of Tyler who identified ten outcomes used to guide research within the field. Those outcomes were—the acquisition of information, the development of work habits and skills, effective ways of thinking,



social attitudes, interests, appreciations, sensitivities, personal social adjustment, the maintenance of physical health, and the development of a philosophy of life (1949, p. 58).

The common-core subjects (i.e., English, mathematics, science, and social studies) are supportive of the goals of education. These generative content areas are best used to assist the student in learning how the immediate and distant world works. Common-core experiences reflect life roles after middle school. Students learn how the content is applied for social, artistic, and economic purposes rather than accept acquisition of the content as adequate. "... this openness to the possibilities of the human spirit, that makes these practical activities in the school allies of art and centers of science and history" (Dewey, 1899, p. 32). Dewey alerted us to the fact that the acquisition of knowledge emanates from humankind's encounter with "one earth." Stratified knowledge, separated by disciplines, creates a disconnected experience which interferes with the students' ability to make meaning of the subject matter (Beane, 1997). The practical problem of education is the insoluble problem of learner vs. curriculum (Dewey, 1902).

Two major challenges to social equity in American schools are curriculum apartheid and concentration of poverty in urban and rural schools (Catterall, 2009; Horowitz, 2008). Some schools, especially those serving low-SES students, offered them no arts programs throughout their entire schooling (Goodlad, 1992). This contrasts with findings, where Nelson (2001) found that developing creativity through the arts enriched the curriculum and strengthened instruction leading to greater social equity; central to students' achieving excellence through supporting and developing creativity. Rabkin (2004) suggested that arts education has a central role in closing achievement gaps, providing equity. For low-income students, arts education provides that critical transfer, linking and generating knowledge, which removes deficits in experiential bases. They address the complex dynamic of cognitive, social, and emotional dimensions of learning.

This affirmed Sykes's (1982) assertions that arts and aesthetic education, by bringing students closer to the creation of arts, adds to the qualitative dimension of life.

Fowler (1996) asserted that music education is a major civilizing force in society. Its contribution to cultural understanding bridges ethnic differences; thus, serving as a balancing dimension of humanness within a society often characterized by sensationalized differences. He found that the lack of such music programs was especially severe in the South where fewer arts programs were offered, especially in those schools with Black or Latino students. As Gee (2007) notes the arts experiences expand students' ability to engage broadly, deeply, and insightfully with their own culture and with other cultures. When students are systematically denied the arts as essential components of their lives, the natural compensatory effects of the arts are denied to the learners (Fowler, 1996). Burnaford (2007) conducted a literature review of arts integration studies written between 1995 and 2007. She concluded that an exploration of how arts intersect with other subjects in a democratic education was needed.

The disparity in curriculum offerings, with the lack of arts direct experiences for poor students, deprives them of essential components for success in adult life. Arts production empowers these essential dispositions which include imagination and agency, expression and empathy, interpretation and respect, inquiry and reflection, and engagement and responsibility (Davis, 2008). Such personal and social competencies can best develop through direct arts experiences in which students participate in the process of creating something of aesthetic worth (Fowler, 1996). The essential design elements include the goal to educate whole children whose beliefs, behaviors, attitudes, and dispositions are supportive of a democratic society. Such education requires the balancing of the acquisition of knowledge with essential nurturing skills including imagination, engagement, and participation (Fowler, 1996).

The arts and physical education are two essential curricular areas which meet the integrative needs and instructionally supported democratic principles and practices (Goldberg, 2009). Goldberg asserted that what is learned through direct arts and physical education experiences is, in the long run, far more important than raising test scores. The failure to provide arts for all students impedes this goal and unjustly handicaps them due to the lack of these essential experiences. Comprehensive curriculum presents students with multiple perspectives and experiences that generate new concepts linked to personal experiences. Strong curriculum integrates multiracial and multiethnic materials and activities, including music, arts, and theatre (Jackson & Davis, 2000).

### **Arts Integration**

A significant body of literature indicated that highly-integrated arts instruction throughout a significant portion of the school day does no harm and tends to enhance student achievement, irrespective of ethnicity or socio-economic background. Arts integration has more powerful effects as it moves from a simple cross-disciplinary connection to a thematically integrated day (Beane, 1997; Dewey, 1938).

The current view of arts integration in the curriculum embraces concepts as wide ranging as discipline-based arts education (DBAE) to a view that cognitive development and employment preparation are central reasons for studying the arts. However, public discourse is returning to a theme that has played itself out for at least a century, that of integrating specific arts into other art forms and non-art content into the respective arts (Eisner, 2002; Grumet, 2004).

Eisner (2002) identified four processes to arts integration. The first process used the arts to experience, *vicariously*, a particular cultural or historical phenomenon. The goal was to broaden and deepen the experience, contextually, through examining and creating from materials beyond the declarative knowledge transmitted through text. A second process focused on internal

structures, within the arts, allowing the students to explore the similarities and differences within the specific artistic disciplines. Such concepts as color, rhythm, balance, expression, and aesthetics were examined from the perspective of music, visual arts, drama, and dance applications.

Eisner's (2002) third process developed a theme that is extant across most disciplines and developed it from multiple arts perspectives. Themes such as pattern, metamorphosis, tension, and unity were developed using many arts as well as scientific perspectives. His fourth process for arts integration derived from the complex-thought process of creativity. Curricula were centered upon a real problem and required the integration of multiple disciplinary views, especially those judgments based upon such principles as aesthetics, creativity, perspective, and analysis. Central to each of these processes was the view that art has a distinctive, qualitative role to play. Artistic intelligence and the development of a sense of beauty and unique expression were the guiding means to achieving good outcomes (Eisner, 2002).

### **Arts Education Theories and Socio-Economic Comparisons**

Dewey (1934) reminds us that the arts are central to organizing a community. Arts are the primary means by which humans expand their own lives. Thus, education, the bringing of the best from humanity, has at its center artistic creation (Dewey, 1938). The enhancing of the arts experience then, to Dewey, was as important, as any role it may play in fostering higher achievement in other disciplines. Aesthetic theory guides instruction in the arts to access sensory qualities that students experience. Eisner (2002) encouraged educators to find as many ways as possible to help students communicate and organize knowledge, he cautioned researchers against making claims of arts' effects on other content areas or transfer effects.

Studies repeatedly indicated that children from low-income families are less likely to be consistently involved in arts experiences or instruction than children from high-income families.

Ruppert (2006) stated that arts, whether as an isolated content area or integrated into the school curriculum, are a vital component of a student's educational experiences. She cited the studies in *Critical Links* as "strong arts education research that would make a contribution to the national debate about effective strategies to improve student achievement and the school environment" (Deasy, 2002, p. ii). Ruppert (2006) concluded, "... the need to demonstrate the link between the arts and student achievement has grown more critical" (p. 2). References in that document were examined. Additionally, *Third Space* emerged as a primary source.

Stevenson and Deasy (2005) used Eisner's (2002) curriculum theories to ground their work. Curriculum develops as part of a real-world structure and not isolated from it. In *Arts and the Creation of Mind*, Eisner explored why the arts are central to the students' experiences. This experience may directly address the despair and hopelessness generally found in the poverty view.

### **Socio-Economic Comparisons and Arts Experiences**

Stevenson and Deasy (2005) reported on case studies of ten high-poverty schools, which had arts education as an essential part of the curriculum. The researchers explored the effect of arts education and learning environment by interviewing educators, students, teaching artists, and other stakeholders. They explored the idea of a space where educators, students, and works of art make connections. The researchers found that as the connections were made, powerful conditions for learning were created. To support this concept, the case study schools used an arts integrated curriculum. The arts were the focusing mechanism for the tested subjects of English language arts, math, science, and social studies, the means to an education (Stevenson & Deasy, 2005). The elements of the arts were taught as a content area similar to the tool subjects and as a means for the students to create products or performances which have value beyond the classroom. Thus, through the creation of the product or performance, arts education was established as a powerful component of education (Stevenson, 2006).

The authors of *Champions of Change* (Fiske, 1999), *Critical Links* (Deasy, 2002), and the *Third Space* (Stevenson & Deasy, 2005) all report on positive effects of arts education on socially disadvantaged students. Catterall (1998) analyzed a sample of 25,000 eighth and tenth graders participating in a correlational study over a ten-year period. The research examined a number of factors including academic achievement and issues that current accountability programs do not consider. When controlled for socio-economic status (SES), findings indicated that students in the lowest quartile who had in-depth arts experiences outperformed the low-arts students in the same SES quartile on tests of reading and math (Catterall, Chapleau, & Iwanaga, 1999; Catterall, & Waldorf, 1999). Specifically, researchers reported that 33% of the lowest-SES students who participated in the band or orchestra performed at the highest levels in math. They compared this to the 15.5% of the lowest-SES students who did not participate in band or orchestra and scored in the highest category.

“Increased equity in access to the curriculum: Teachers emphasized strongly and consistently that A+ equally benefited all groups of students, something that differentiates it from many reforms” (Nelson, 2001, p. 12). Fitzpatrick (2006) analyzed academic performance of cohort groups of approximately four-thousand students in four subject areas in Ohio—citizenship, science, math, and reading. She studied four sub-groups: full-priced lunch students with instrumental music, full-priced lunch students without instrumental music, free- and reduced-priced lunch students with instrumental music, and free- and reduced-priced lunch students without instrumental music. Fourth-grade scores revealed that full-price students outscored free- and reduced-price students at all levels. Sixth-grade scores varied, but by the time ninth-grade scores were analyzed instrumental music students who received free- or reduced-priced lunch outscored or were equal to the non-instrumental full-priced lunch students in all four areas.

Heath (1998) used a mixed-methods study, which examined 143 students involved in direct-arts experiences with arts organizations compared to 17,000 students in the control group. The students were enrolled in schools with a higher potential for violence, divorced families, and parents who were more likely to be unemployed. The families were five times more likely to be on welfare than the national average. Podlozny (2000) conducted a meta-analysis of eighty studies that included at least one measure of verbal achievement in an experimental design.

Goodlad (1992) identified a persistent failure of school curriculum to meet the needs of significant groups of students, especially those coming from poverty. The low standing of the arts among the educational priorities, and the pervasive dominance of other subjects, regularly contributed to poor school environment. “Those students who take least well to the favored subjects not only are denied the best of their contents but are denied access to alternatives that possess great intrinsic value as well as potential for holdings some of them through the school years to graduation” (p. 199). Albert (2006) examined additional reasons why students in poverty need additional support to fully participate in the arts subjects. He found that in many schools, where the arts were offered as a regular part of the curriculum, students were required to use significant portions of their personal resources for the participation fees, equipment, materials, and supplies. This disadvantaged poor students when arts programs were not as fully supported as programs in the common core.

Mishook and Kornhaber (2006) interviewed principals in eighteen arts and non-arts focused schools in Virginia. Art-focused schools tended to treat the arts curriculum as coequal when integrating it with tested content areas. Non-arts schools tended to place the arts curriculum in a subservient role to the tested content areas. The schools that treated the content areas coequally, had administrative and community support, as well as quality professional development, found that student achievement was greater regardless of socio-economic status.

## **Reading and Language Skills Performance and Arts Education Experiences**

There have been many attempts to understand the effect of arts experiences on students' curricular experiences. Studies frequently identified a relationship between direct-arts instruction and academic achievement. Specifically, four studies indicated that time taken from instruction in other content areas for studying the arts did not impede performance in those content areas (Corbett, McKinney, Wilson, & Noblit, 2001; Kelstrom, 1998; Kvet, 1985; Seaman, 1999).

Vicarious experiences, such as music- or art-appreciation survey classes, did not appear to have a similar positive relationship. Indirect experience also included playing music in the background while students worked in other content areas. Hallam, Price, and Katsarou, (2002) distinguished background music effect (indirect experience), rather than music instruction (direct experience), in a study of fifty-four middle-level students. One group wrote short stories with calm music playing; another group wrote with exciting music playing in the background, and the control group wrote in silence. The stories were scored based on whether the students' stories had a beginning, a middle, and an end: did the story flow; did it hold the reader's attention; was it exciting; and was it using proper grammar. The findings indicated that listening to exciting music used as background distracted from the short story writing. Listening to calm music did not exert a positive influence on the short story writing. Vaughn (2000) reported on fifteen listening studies, which had 10 to 200 students; analysis did not find any significant positive results. Harland, Kinder, Lord, Stott, Schagen, Haynes, et al., (2000) employed qualitative methodology and examination of national test scores in Great Britain, found inadequate evidence that participation in arts survey courses (indirect experience) supported general academic gains. Case study evidence did support arts contribution to the overall school culture and determined that the arts were viewed as essential components of the curriculum.



Catterall (1998) analyzed 25,000 eighth- and tenth-graders participating in direct-arts education experiences and correlated their English standardized test scores over a ten-year period. The students who had direct-arts education experiences performed better on English standardized tests and earned higher grades in these subjects. When analyzing a sub-set of 6,500 low-SES students, Catterall documented that correlations between the direct-arts experiences and language scores were more positive than for students who had little arts experiences.

Catterall, Chapleau, and Iwanaga (1999) examined 7,440 students involved in arts performance from eighth-grade through high school. Specifically, they found that students who reported sustained involvement in direct theatre performed better on reading assessments. Vaughn and Winner (2000) examined the correlation between self-reported years of direct experience in arts classes and high verbal and composite SAT scores. The strength of the correlation increased as the number of years of direct-arts experience increased. The larger effects were in the verbal scores. In meta-analyses of thirty correlational and experimental studies, Butzlaff (2000) found consistent and reliable positive correlation between years of direct-music education experiences and standardized measures of reading performance using meta-analysis including over 500,000 subjects.

Sobolew-Shubin (2004) employed a mixed-methods approach to examine the effects of an arts-infused curriculum on student achievement data. The three-year study indicated that students participating in the *Opening Minds through the Arts* program performed significantly better on Stanford 9 measures of reading and language than did students in comparison schools. Findings also suggested that students' achievement was greater regardless of ethnicity. Alo (2009) conducted a causal-comparative study to focus on the effects of visual arts instruction on an English standardized test. Her study examined the test scores of 3,980 high school students. She reported that the lowest-scoring visual arts students scored better than the lowest scoring

non-arts students. The results showed that non-visual arts students in the middle and top deciles outperformed the visual arts students.

No reliable effect was found in the experimental studies on students who participated only in extra-curricular arts activities. Costa-Giomi (1999) conducted experimental research in the effects of direct instruction with sixty-seven Quebec students in the experimental group receiving direct instruction in piano. No significant difference was found on verbal test scores between the experimental group and the fifty students in the control group. Spatial reasoning scores steadily increased over time, but peaked and became flat with the control group at the end of three years.

Seaman (1999) analyzed ten years worth of standardized scores in South Carolina schools using a specific *Arts in the Basic Curriculum* project and schools matched by SES data. He reported that a larger portion of the instructional day devoted to direct-arts experiences did not harm students' achievement in English as measured by standardized test scores. Similarly, in 1980 Dale Kempter, supervisor, studied Albuquerque 5,154 fifth-graders who took the Comprehensive Test of Basic Skills (CTBS). Again Mr. Kempter replicated the study in 1986 and similar results were found according to Robitaille and O'Neal (1981). The research showed that as pupils were in the music programs for longer periods of time, the higher their achievement in comparison to the non-music students (Kelstrom, 1998). Kvet (1985) studied a Midwestern metropolitan area population, finding that reducing time in common-core subjects for the purpose of formal music instruction did not reduce test-score performance in common core subjects. Dryden (1992) studied a Kansas population of middle school students who were selected from a portion of their language arts block for music instruction. The replacement of language arts instructional time with music instruction resulted in no reduction in the performance in language arts (Kelstrom, 1998).

Schneider and Klotz (2000) examined core battery of California Achievement Tests standardized scores on 346 middle school students in Southeast United States rural and suburban schools. There was not a significant difference in the test scores between musicians and non-musicians. Additional findings included that students in high-quality music education programs achieved significantly higher scores on these standardized tests than did the non-musician groups.

Heath (1998) used a mixed-methods study on a combination of 120 arts organizations, athletics organizations with a strong academic interest, and community service organizations. They compared favorably to the 17,000 students in the control group. Students participating in arts organizations were more likely to win awards for essays or poetry and were twice as likely to read for pleasure.

Podlozny (2000) found that a relationship existed between drama and story understanding as expressed in the form of written measures based upon a meta-analysis of eighty studies, which included at least one measure of verbal achievement in an experimental design. Based on a meta-analysis of seventeen studies, there was a relationship between drama instruction and reading achievement, and between drama instruction and oral language development. There was no relationship found between drama instruction and the sub-skill of vocabulary development.

Schaffner, Little, and Felton (1984) studied 280 fifth- and sixth-grade students whose teachers had employed direct drama instruction (imaginary drama exercises) in their classrooms. The students who had the imaginary drama exercises used expressive and interactive language more frequently than their peers. Recorded sessions suggested that the drama students recognized that language was a tool for learning and growth. Wagner (1986) conducted a quasi-experimental study with 84 fourth-grade and 70 eighth-grade students. Results indicated that role-playing (direct experience in theatre) was more effective than didactic instruction when

teaching students persuasive writing. Wilhelm (1995) conducted a case study of two seventh-grade boys who were reluctant readers. The boys received nine weeks of visual arts training. They took a more active role in reading and began to interpret what they were reading. The boys became more sophisticated readers as a result of their direct experience in producing visual arts.

Wandell, Dougherty, Ben-Shachar, and Deutsch (2008) studied 49 children ages 7-12. They investigated how aesthetic perception and arts education correlated with improvements in reading test performance. They used diffusion tensor imaging of the brain's white matter. The researchers found a correlation between the amount of musical training and the amount of improvements in tests of reading fluency. DuPont (1992) examined the use of creative drama with fifth-grade students who were struggling readers. Intact groups were pre- and post-tested using the California Achievement Test and the Reading Diagnostic section of the Metropolitan Achievement Test. When fifth-grade students used creative drama to support story comprehension, the students achieved significantly higher scores on these tests. The study also reported that the skills gained from the drama instruction transferred to skills in comprehending literature not studied as part of the experiment.

Andrews (1997) studied the effects of integrated reading and music instruction on 58 fifth-grade students. The students had direct-music experiences, i.e., they took part in music performances. The students' attitudes toward reading and music improved when the instruction was integrated. Burger and Winner (2000) explored the effect of visual arts on reading skills. They conducted two meta-analyses. No relationship was found between visual arts instruction and reading readiness. Their second meta-analysis indicated that there was a positive relationship between reading improvement and reading instruction integrated with visual arts instruction. However, the authors cautioned that there was only marginal support for this hypothesis. DeJarnette (1997) gave 49 randomly assigned sixth-graders a writing assessment; another similar

group of students received an assessment that combined writing and drawing. The students achieved higher scores when they wrote and drew. This result was also true for limited English students.

Horn (1992) conducted a mixed-method study with twenty-nine urban high school students to improve playwriting skills. Over the course of the study, students visited the public libraries more often and their knowledge of creating plays improved. At the beginning of the study, students complained that they did not know what to write about. At the end of the study the students were writing more material than could fit into a production. Kassab (1984) created an experimental study with twenty-eight rural high school students who were asked to write and orally present poetry. The intervention consisted of twenty-two sessions over a six-week period using elements of theatre. Students felt more comfortable speaking publicly as a result of the intervention.

Keinanen, Hetland, and Winner (2000) conducted a meta-analysis of seven studies that met strict criteria. The analysis indicated that there was a weak positive relationship between dance instruction and improvement in reading. The weak relationship was attributed to the small number of sample sizes in the studies. The second analysis of dance instruction's relationship with nonverbal reasoning found a stronger positive relationship. Lowe (1995) used mixed-methods to study the effect of music learning in a second-language (French) second-grade classroom. Students in the experimental group received five 15-minute music lessons per week. The results of the study suggested that integrating music into the second-language classroom improved oral grammar, reading comprehension, tonal-rhythmic pattern/performance, and written concepts.

In Minneapolis, schools and teachers partnered with artists to find ways to "use art to teach the regular curriculum" (Weismann, 2004, p. 31). A team of interested teachers through a

ground-up or grassroots reform initiated the Arts for Academic Achievement (AAA). These programs supported school and district improvement plans. Annual research reports documented how arts experiences improved student achievement (Ingram & Seashore, 2003). The evaluators declared that the integrated curriculum supported student achievement. They found AAA "was more powerful for disadvantaged learners, the group of students that teachers must reach to close the achievement gap" (p. 3-4). Catterall and Waldorf (1999) found similar results in the CAPE schools.

A wide variety of methodology has been used to study the topic of arts experiences and reading or language arts academic achievement. Highly diverse populations were studied, ranging from two seventh-grade boys to twenty five thousand eighth- and tenth-graders. Populations reflected a variety of demographic factors such as gender, ethnicity, and socio-economic status. The studies in this sub-topic support a positive relationship between direct-arts experiences and increased academic achievement in reading and language arts. Vicarious experiences, such as music/art appreciation survey classes, did not indicate a similar positive relationship.

### **Mathematics Performances and Arts Education Experiences**

Students who reported high levels of involvement in music education, during the middle and high school years, outperformed their peers on standardized math assessments in the twelfth-grade (Catterall, Chapleau, & Iwanaga, 1999). The study found that students who had high levels of direct-arts education experiences (art, music, drama, dance) performed better on standardized mathematics tests and earned higher grades in mathematics. However, Harland, et al., (2000), employing case study qualitative methodology and examination of national test scores, found inadequate evidence as a result of participation in arts survey courses (indirect experience) to support standardized academic gains as measured on British examinations of mathematics. The

evidence supported arts influences on overall school culture and arts were viewed as essential components of the curriculum.

Sobolew-Shubin (2004) employed a mixed-methods approach to examine the effects of an arts-infused curriculum on student achievement data. The three-year study indicated that students participating in the *Opening Minds through the Arts* program performed significantly better on Stanford 9 measures of mathematics than did students in comparison schools.

Seaman (1999) analyzed ten years of standardized scores in South Carolina schools using a specific *Arts in the Basic Curriculum* project and non-participating schools matched by SES data. He reported that devoting the larger portion of the instructional day to direct arts experiences did not harm students' achievement in mathematics, as measured by standardized test scores. Vaughn's (2000) meta-analysis of twenty-five studies examined the relationship between music instruction and mathematics achievement. The studies were grouped as either correlational, experimental - music instruction, or experimental - music listening. A significant positive relationship between music study and mathematics was documented in the ten studies. The ten correlational studies had a range of 34 through 300,000 participants, mostly high school students. The six experimental music instruction studies indicated that music study may have a positive relationship to score increases in mathematics achievement. The experimental music instruction (direct experiences) had a range of 28 to 128 participants, mostly elementary students. The fifteen listening studies (or indirect experiences) had 10 to 200 students; analysis did not find any significant positive results.

Vaughn and Winner (2000) examined the relationship between self-reported years of experience in arts classes and high math and composite Standardized Achievement Test (SAT) scores. SAT math scores from 1987 through 1998 were selected and comparably scaled. Students who had one year of arts experiences had higher SAT math scores than students who had less

than a year. The scores leveled from one year to three years of direct arts experiences. SAT math scores increased significantly when the students had four or more years of direct-arts experiences. In another study, Winner and Cooper (2000) explored the relationship between arts education and academic achievement in students of ages eight through twenty. They conducted a meta-analysis of 1,135 correlational and experimental studies. A positive relationship was reported between arts education and academic achievement in mathematics. A strong positive correlation between students who self-selected into the arts was and high-academic achievers was found.

Spelke (2008) conducted three experimental studies. Study one measured the test performance of 85 children of ages 5-17 who had moderate training in music or sports. She reported that low or moderate levels of training did not enhance the mathematical abilities tested. The second study compared performance of 32 children of ages 8-13 who had intense music training and 29 children of the same age who had low intensity music training. The results of the second experiment suggested a relationship between music training and spatial ability. The third study compared the effects of intensive training in creative writing, dance, music, theatre, and visual arts in 80 students aged 13-18, attending a private school for arts. The results of the third study strengthened findings from study two that students with intense music training outperformed students with no music training on tasks that involve geometric representations and reasoning.

Helmrich (2008) studied 6,026 adolescent students in Maryland. The students were grouped by their participation in instrumental or choral music or non-participation in music performance groups. She used analysis of variance, analysis of covariance, and pairwise comparisons to determine how participation affected algebra achievement. The study suggested that formal instrumental music instruction for middle grades students could strengthen connections for students studying algebra in high school. The results also suggested that formal



music instruction appeared to narrow the achievement gap between African-American students and other ethnic groups. Correlations were strongest for instrumental music instruction.

Braunreuther (2010) examined the relationship of arts study on academic achievement, academic growth, and attendance and behavior. He examined four years of test data from sixth grade students in one school district. The methodology was one way ANOVA. The researcher inferred that inconsistent results were caused by variables outside the study. Arts students did outperform non-arts students; however, those differences were not significant. The most significant conclusion was that arts students did no worse than the non-arts students. Braunreuther did not distinguish the kind of arts study in which the students were engaged.

A broad variety of methodology has been employed to study the topic of arts experiences and mathematics academic achievement. Highly diverse populations were studied, ranging from twenty-eight to twenty five thousand eighth- and tenth-graders, populations involving a variety of demographic factors such as gender, ethnicity, and socio-economic status. Studies indicated a positive relationship between direct-arts experiences and increased academic achievement in mathematics. Vicarious experiences, such as music or art appreciation survey classes, did not report a similar positive relationship.

### **Social Skills Development and Arts Education Experiences**

In a case study of ten arts integrated schools with high incidences of poverty, the assistant superintendent, along with parents, teachers, and other administrators of a Mississippi school reported a more positive school environment. Stevenson and Deasy (2005) found that these stakeholders believed that the arts-integrated curriculum improved attendance, grade-point average, college applications and acceptance, and reduced the number of discipline referrals. In a longitudinal study of 392 students, a relationship between participation in extracurricular involvement in the arts, athletics, or vocational activities was examined by Mahoney and Cairns

(1997). They reported that participation in extracurricular activities documented a pattern of students completing high school, thus, fewer high school dropouts.

Adkins and McKinney (2001) applied the dimensions of effective practices to the A+ comprehensive model schools. These include increasing arts instruction, two-way arts integration, multiple intelligences, constructivist learning, and thematic curriculum (Nelson, 2001). The A+ schools ranked high on the following dimensions: balanced scope, clear focus on teaching and learning, a long-term time frame, a locus of authority that encourages school-level initiative but embraces support from the top, opportunities and support for collaborative engagement, and ongoing professional development directed at instructional change. This suggested that the A+ schools achieved a supportive school environment.

Burton, Horowitz, and Abeles (2000) conducted a mixed-methods study and found a strong positive relationship between learning experiences in the arts and school environment. Teachers examined a portion of the school environment through the use of student questionnaires and faculty surveys. Students' imagination, risk-taking, expression, and cooperative learning were measured by questionnaires completed by teachers. School environment was rated by the teachers through measures of affiliation, student support, professional interest, achievement orientation, formalization, centralization, innovation, and resource adequacy. Nearly 2,500 fourth, fifth, seventh, and eighth grade students who had many arts experiences in and out of school participated in this study. Burton, et al. concluded that students in "arts-rich" schools were more confident, were positive risk-takers, exhibited ownership of their learning, took pride in their work, and showed greater compassion and empathy to their peers than the students in "arts-poor" schools.

Baum and Owens (1997) studied fourth- through sixth-grade students in New York City classrooms participating in the talent program. Students were observed as they were taught with

the arts integrated into the lessons and without the arts. Their research suggested that students who received integrated arts lessons had significantly more self-regulatory behaviors. The correlation among the amount of arts instruction, arts integration, and students' willingness to take academic risks was documented.

Harland, et al., (2000) conducted case studies, qualitative methodology and examination of national test scores in Great Britain, including 219 student interviews over a three-year period. They indicated that British secondary students, who performed well in at least one art, found that studying the arts provided enjoyment and felt more self-confident. Students reported that studying the arts contributed to their personal and social development. Administrators reported that arts education improved the school environment through encouraging a positive cohesive atmosphere. Students in these schools expressed the opinion that the arts facilitated their personal and social development.

In the United States, Corbett, McKinney, Noblit, and Wilson (2001) conducted an ethnographic, grounded-theory study in twenty-five schools over a four-year period. Through the use of surveys, interviews, focus groups, case studies, test scores, observations, and document collection (meeting agendas, school improvement plans); they found that the teachers in the A+ program communicated more frequently with other teachers in the school and in other schools. Their study also revealed that A+ schools systematically brought the community into the school and the school into the community. Students in A+ schools saw the learning environment improve through arts integration and rich academic learning experiences. Nelson (2001) summarized the above work documenting the arts' contributions to the school culture and to the communities which they serve.

Catterall (1998) examined a longitudinal sample of 25,000 eighth- through tenth-grade students. He reported that the dropout rate for low-arts students was four times higher than high-

arts students. Other findings included evidence of less boredom, more community service, and less television viewing. Pellegrini (1984) used ANOVA on randomly assigned kindergartners and first-graders at a predominantly Black low-SES school in rural Georgia. He found that thematic-fantasy play was more effective in assisting children in developing conflict-resolution skills or fostering a cooperative learning environment. Ross (2000) reviewed reflection journals, in-class discussions, and written syntheses to study sixty incarcerated adolescents who received direct instruction in jazz and hip-hop dance. Findings indicated gains in confidence, tolerance, and persistence related to dance instruction. Horn (1992) conducted a mixed-methods study with twenty-nine urban high school students to improve playwriting skills. Over the course of the study, students' self-perception, behavior and attendance improved.

Heath (1998) conducted a mixed methods study examining a combination of 120 arts organizations, athletics organizations with a strong academic interest, and community service organizations. A portion of this study examined 143 students involved in direct-arts experiences within and without the schools. The students in arts organizations were also more likely to be recognized for academic achievement.

Kassab (1984) conducted an experimental study with twenty-eight rural high school students who were asked to write and orally present poetry. The intervention consisted of twenty-two sessions over a six-week period using elements of theatre. Students' self-esteem and self-image improved as a result of the more supportive learning environment created. Students felt more comfortable speaking publicly as a result of the intervention.

Kennedy (1998) studied forty-five males living in residential homes and juvenile detention centers. The students were pre- and post-tested using a music self-efficacy scale and given one of four treatments or received no treatment. Group 1 subjects were given performance related instruction with no cognitive instruction. Group 2 subjects were given performance

related instruction and cognitive instruction (i.e., how to prepare for a performance, how to perform) and were given time to practice. Group 3 subjects were given cognitive instruction only. They were asked to perform for their peers but they were not given time to rehearse the skills. Group 4 watched video-taped performances and discussed what they observed. Group 5 was a control group that received only guitar instruction. Correlational and multivariate analysis of variance indicated the groups who received the cognitive instruction and performed, or who performed only, showed significant improvement on the Rosenberg Self-Esteem Scale (Kennedy, 1998). Scriven (2008) used qualitative methods to examine the impact of an interdisciplinary, arts-centered curriculum on nineteen students at-risk of academic failure in a rural North Florida middle school. She used stakeholder interviews, direct observation, and student artifacts to gain an understanding of how the arts in the curriculum were perceived. A curriculum unit designed to integrate literacy and the arts was delivered one to two times a week. Many students reported that the experiences helped them develop self-respect.

Barry, Taylor, and Walls (1990) explored the relation between student involvement in arts education and high school retention. Twenty-two students at-risk of academic failure were interviewed. Eighty-three percent indicated that the participation in the arts courses influenced their decision to remain in school. Field observations confirmed that the students spent more time on task in arts classes than in non-arts classes. This research confirms arts contributions to those larger curricular outcomes, which extend beyond content (Lancelot, 1929; Tyler, 1949). These are known as communication, problem solving, resource access and utilization, linking and generating knowledge, and citizenship in the public schools of Louisiana (LDE, 2003).

### **Thinking Skills and Arts Education Experiences (Higher Order Thinking)**

Harland, et al., (2000) reported that an education in the arts assisted students in developing problem-solving skills. Student interviews disclosed greater development of

improvisation and imagination. Students recognized creativity as a planned effect of arts education. A meta-analysis performed by Moga, Burger, Hetland, and Winner (2000) found a reliable association between the study of arts and performance on standardized creativity tests. They reported that students who study the arts perform better on tests measuring divergent thinking. When examining a sample of third and fourth grade piano students, Costa-Giomi (1999) found spatial reasoning scores steadily increased over time but peaked and became flat with the control group at the end of three years.

Kraus and Chandrasekaran (2010) found a relationship between music training and changes in the auditory system. The meta-analysis of neuroscience research led them to a finding that music instruction assisted people on listening challenges inclusive of music processing and speech recognition. “The beneficial effects of music training on sensory processing confer advantages beyond music processing itself. This argues for an improvement in the quality and quantity of music training in schools” (p. 604). Grumet (2004) conducted a qualitative meta-analysis. She relied heavily on studies of the Chicago Arts Partnerships in Education, Arts for Academic Achievement in Minnesota, and A+ Schools in North Carolina. Her findings were that arts integration into the curriculum had a positive effect on school environment, students’ engagement, deeper understanding of content, and could improve professional development. “Critical thinking skills improve, and middle school students become more involved and active in their learning. Middle school teachers improve the quality of their teaching and the school takes on a more positive school climate” (Richardson & Scott, 2003, p. 2).

Kim (1998) used a mixed-methods approach to study 78 seventh-grade girls in Seoul, South Korea. She found that the students who studied creative dance had significant gains on the Torrance Test of Creative Thinking (TTCT) (originality, elaboration, flexibility, and fluency) over the students who studied traditional dances. Her qualitative study reinforced the importance

of program type and quality of the learning experiences. Minton's (2000) experimental study of 286 high school students found a relationship between dance study and the development of the creative thinking skills of originality, elaboration, and abstract thinking measured by the TTCT.

In a meta-analysis Hamblen (1993) supported the idea that there is a relationship between arts learning and cognitive study in other areas; which can have positive outcomes in creativity, critical thinking, and academics. Young (1999) documented how dance, music, theatre, and visual arts contribute to cognition of phenomena through the use of interpretive representation and affective representation. Music composers use rhythm, melody, harmony, etc. to engage the listener perception of affective responses.

Posner and Patoine (2009) examined the idea of transfer in students who received formal music instruction. They randomly assigned 4-6 year old children to an experimental group that engaged with computer exercises. By using electrodes, the researchers found evidence of increased efficiency in what they defined as the executive attention network of the brain. This network greatly affects patterns of general cognition. The experiment was replicated by a team of researchers in Granada, Spain with similar findings. The researchers concluded that formal arts instruction likely increases general cognitive benefits through developing greater capacity to focus on general intellectual competencies.

## **Summary**

Of constant concern to middle-level exploratory curriculum is the proper balance of curriculum offerings to ensure the fullest development of each student to prepare him or her as a citizen in a democratic society (Dewey, 1909). The arts have an essential role to play in this process (Dewey, 1934; Eisner, 2002). Their role is to enable curriculum to develop students' sense of aesthetics (Greene, 1995). This contributes to the realization of 21st century requirements of imagination, creativity, and innovation. Effective learning environments and

experiences support the accomplishment of these outcomes (Jackson & Davis, 2000). At middle grades specific principles and concepts have been determined to be essential (Jackson & Davis, 2000; NFAMGR, 2000).

Arts experiences play a vital role in the fullest development of students, especially those coming from working class backgrounds (Catterall, 2009; Ruppert, 2006). Catterall (1998, Catterall, et al., 1999) and other above-cited studies found that students in the lowest socio-economic quartile who had significant arts experiences out-performed the low-arts experienced students in language and mathematics. Correlational studies and reports cautioned against assuming causality (Vaughn, 2000; Vaughn & Winner, 2000). However, when reviewing the literature on the effects of arts education experiences, one theme emerged. The concept of direct experiences in creating art was an essential element positively relating to other academic achievement (Harland, et al., 2000). No significant relationship was found between indirect-arts experiences, learning about arts, and academic achievement (Harland, et al., 2000; Hallam, 2002). The linking and generating of knowledge in the creative process appeared to be the critical factor enhancing relationships between the arts and academic performance in the common-core generative disciplines.

The common theme in the literature appeared consonant with the findings of Seaman (1999) and Corbett, McKinney, Noblit, and Wilson (2001) studies which found that time spent studying the arts did not impede performance in the other content areas (Dryden, 1992; Kelstrom, 1998; Kvet, 1985; Robitaille & O'Neal, 1981; Schneider & Klotz, 2000). The literature supported the position that education in the arts assists in developing problem-solving skills which are applicable throughout school and in life (Harland, et al., 2000). What the literature does not answer is the effect of music participation on high stakes cumulative tests which occur at the end of middle school, but cover content that is taught in grades five through



eight. The literature revealed the effects of music and art performances on nationally normed tests covering content and participation of single year curriculum in the elementary grades. These tests were also used for informational purposes only and did not hold the high stakes implications of eighth grade cumulative tests.

Louisiana's policy of allowing students who perform poorly on the cumulative exams, limits access to the benefits students may derive from studying the arts (LDE, 2008a). Does this policy contradict the constitutional duty for public education, through excellent learning environments and experiences, to develop each student's full potential? This contradicted Secretary of Education Arne Duncan's (2009) statement: "This Arts Report Card should challenge all of us to make K-12 arts programs more available to America's children . . . We can and should do better for America's students." Dorn (2005) reminds us that policy is not neutral, but interferes with private choice and coerces compliance with specific rules and regulations. The application of such rules should do no public harm, but ensure equity and access for all, consistent with the principle of human dignity. This study addressed the problem of equal access to arts education, as defined in the literature, and in curriculum policy administration.

## **CHAPTER III**

### **METHODOLOGY**

Chapter three presents the methodology of the study. It begins with the restatement of the problem. The research questions, the description of the subjects, an overview of the research design, data collection procedures, and data analysis procedures follow.

#### **Restatement of the Problem**

Students, money for instructional materials, and time are three resources arts educators express as needs (Cortello, 2009; Hinckley, 2000). Many students in the United States, including Louisiana, have little or no access to arts education as a result of policies intended to improve English language arts and mathematics test scores. A majority of students who are from low-income families, racial or ethnic minorities, limited English proficient, or attend schools identified as not meeting annual yearly progress, are more likely to report a decrease in instructional time for arts education (Government Accounting Office, 2009). The underlying question supporting this research was how studying the arts contributed to overall academic achievement (Schellenberg, 2006). Literature cited in chapter two supported a positive contribution of arts education to academic achievement. This study was limited to 2007-2008 eighth grade students who received music and visual arts instruction and those who received no instruction and their standardized test scores.

The *Louisiana Handbook for School Administrators* (Bulletin 741) states that, “For students in grades 5-8 who have scored below the Basic level on LEAP21 in English language arts or mathematics, the minimum time requirements in health, music, arts and crafts, or electives are suggested in lieu of required” (§2313. F. 3., LDE, 2008a, p. 45). The focus on higher test scores in English and mathematics has caused Louisiana school districts to exercise an option allowing

students to be reassigned from arts education courses to additional instruction in English and math.

*No Child Left Behind* (2002) recognized the arts as a core component of the curriculum necessary for the full development of all students. There is a finite amount of instructional time available each year. The question was whether a policy exception was justified by an analysis of student performance in English and mathematics while adhering to the equal protection requirement of full access to all subjects, pursuant to the constitutional mandate that students should have equal opportunity to develop to their full potential (Louisiana Constitution Article VIII Preamble, 1974). Based on the review of the literature, students who devoted time to studying the arts, thus decreasing English and math instructional time, score as well in tested content areas (Dryden, 1992; Helmrich, 2008; Kelstrom, 1998; Kvet, 1985; Robitaille & O’Neal, 1981; Schneider & Klotz, 2000).

The assumption being challenged is that time allocated to tested-subjects was so important to academic achievement in those subjects that it justified excluding time developing the knowledge, skills, and habits which are unique to arts instruction. The hypothesis was that time allocated for music and visual arts education did not take away from academic achievement in “tested” subjects. Did this exception to statutory language violate the constitutional principle of providing each student with equal opportunity by denying access to developing full potential through access to participation in the arts? Was policy exemption supported by comparing performance on the eighth grade cumulative tests in English language arts and mathematics?

### **Research Objectives**

This study had three main objectives, inquiring about the possible effects of

- I. music course enrollment as a predictor of success in ELA and math test scores;
- II. visual arts course enrollment as a predictor of success in ELA and math test scores; and

- III. music and visual arts (dual) course enrollment as a predictor of success in ELA and math test scores.

### **Research Questions**

This study asked the following research questions. They were reformulated as null hypotheses in the data analysis section. Tables 1 and 2 summarize the research questions.

- I.A.1. Do middle and high SES eighth grade students who were exempted from formal music study have significantly higher LEAP English language arts scores than their peers enrolled in music courses?
- I.A.2. Did low SES eighth grade students who were exempted from formal music study have significantly higher LEAP English language arts scores than their peers enrolled in music courses?
- I.A.3. Did eighth grade students who were exempted from formal music study have significantly higher LEAP English language arts scores than their peers enrolled in music courses?
- I.A.4. Did Black eighth grade students who were exempted from formal music study have significantly higher LEAP English language arts scores than their peers enrolled in music courses?
- I.A.5. Did White eighth grade students who were exempted from formal music study have significantly higher LEAP English language arts scores than their peers enrolled in music courses?
- I.B.1. Did middle and high SES eighth grade students who were exempted from formal music study have significantly higher LEAP mathematics scores than their peers enrolled in music courses?

- I.B.2. Did low SES eighth grade students who were exempted from formal music study have significantly higher LEAP mathematics scores than their peers enrolled in music courses?
- I.B.3. Did eighth grade students who were exempted from formal music study have significantly higher LEAP mathematics scores than their peers enrolled in music courses?
- I.B.4. Did Black eighth grade students who were exempted from formal music study have significantly higher LEAP mathematics scores than their peers enrolled in music courses?
- I.B.5. Did White eighth grade students who were exempted from formal music study have significantly higher LEAP mathematics scores than their peers enrolled in music courses?
- II.A.1. Did middle and high SES eighth grade students who were exempted from formal visual arts study have significantly higher LEAP English language arts scores than their peers enrolled in visual arts courses?
- II.A.2. Did low SES eighth grade students who were exempted from formal visual arts study have significantly higher LEAP English language arts scores than their peers enrolled in visual arts courses?
- II.A.3. Did eighth grade students who were exempted from formal visual arts study have significantly higher LEAP English language arts scores than their peers enrolled in visual arts courses?
- II.A.4. Did Black eighth grade students who were exempted from formal visual arts study have significantly higher LEAP English language arts scores than their peers enrolled in visual arts courses?
- II.A.5. Did White eighth grade students who were exempted from formal visual arts study have significantly higher LEAP English language arts scores than their peers enrolled in visual arts courses?

- II.B.1. Did middle and high SES eighth grade students who were exempted from formal visual arts study have significantly higher LEAP mathematics scores than their peers enrolled in visual arts courses?
- II.B.2. Did low SES eighth grade students who were exempted from formal visual arts study have significantly higher LEAP mathematics scores than their peers enrolled in visual arts courses?
- II.B.3. Did eighth grade students who were exempted from formal visual arts study have significantly higher LEAP mathematics scores than their peers enrolled in visual arts courses?
- II.B.4. Did Black eighth grade students who were exempted from formal visual arts study have significantly higher LEAP mathematics scores than their peers enrolled in visual arts courses?
- II.B.5. Did White eighth grade students who were exempted from formal visual arts study have significantly higher LEAP mathematics scores than their peers enrolled in visual arts courses?
- III.A.1. Did middle and high SES eighth grade students who were exempted from formal arts study have significantly higher LEAP English language arts scores than their peers simultaneously enrolled in music and visual arts courses?
- III.A.2. Did low SES eighth grade students who were exempted from formal arts study have significantly higher LEAP English language arts scores than their peers simultaneously enrolled in music and visual arts courses?
- III.A.3. Did eighth grade students who were exempted from formal arts study have significantly higher LEAP English language arts scores than their peers simultaneously enrolled in both music and visual arts courses?

- III.A.4. Did Black eighth grade students who were exempted from formal arts study have significantly higher LEAP English language arts scores than their peers simultaneously enrolled in music and visual arts?
- III.A.5. Did White eighth grade students who were exempted from formal arts study have significantly higher LEAP English language arts scores than their peers simultaneously enrolled in music and visual arts?
- III.B.1. Did middle and high SES eighth grade students who were exempted from formal arts study have significantly higher LEAP mathematics scores than their peers simultaneously enrolled in music and visual arts courses?
- III.B.2. Did low SES eighth grade students who were exempted from formal arts study have significantly higher LEAP mathematics scores than their peers simultaneously enrolled in music and visual arts courses?
- III.B.3. Did eighth grade students who were exempted from formal arts study have significantly higher LEAP mathematics scores than their peers simultaneously enrolled in music and visual arts courses?
- III.B.4. Did Black eighth grade students who were exempted from formal arts study have significantly higher LEAP mathematics scores than their peers simultaneously enrolled in music and visual arts?
- III.B.5. Did White eighth grade students who were exempted from formal arts study have significantly higher LEAP mathematics scores than their peers simultaneously enrolled in music and visual arts?

This study was limited to the effects of arts participation on academic achievement as defined by English language arts and mathematics LEAP subtests because the policy exemption in Bulletin 741 concerns only test scores in English language arts and mathematics (§2313. F. 3,

LDE, 2008a, 45). No statement existed which limited curricular offerings of the arts based on test scores in science or social studies. If significance was found using MANOVA, the planned subsequent analysis was to complete separate ANOVA's. According to Kachigan (1986) "When we have a single sample measured on several criterion variables we can test whether the set of means on those variables differs from a hypothesis set, using *Hotelling's T<sup>2</sup>* statistic, which is a generalization of Student's t statistic to more than one criterion variable" (p. 329 ).

Table 1  
Research Questions Examining Relationship between ELA Scores and Arts Study

Predictor variables	Music (M)	Visual Arts (VA)	Both Music and Visual Arts (MVA)
Middle & High SES	I.A.1.	II.A.1.	III.A.1.
Low SES	I.A.2.	II.A.2.	III.A.2.
All SES	I.A.3.	II.A.3.	III.A.3.
Black	I.A.4.	II.A.4.	III.A.4.
White	I.A.5.	II.A.5.	III.A.5.

Table 2  
Research Questions Examining Relationship between Math Scores and Arts Study

Predictor variables	Music (M)	Visual Arts (VA)	Both Music and Visual Arts (MVA)
Middle & High SES	I.B.1.	II.B.1.	III.B.1.
Low SES	I.B.2.	II.B.2.	III.B.2.
All SES	I.B.3.	II.B.3.	III.B.3.
Black	I.B.4.	II.B.4.	III.B.4.
White	I.B.5.	II.B.5.	III.B.5.

### Description of the Subjects

For the purpose of this research the subjects consisted of all eighth grade students enrolled in Louisiana public schools 2007-2008, the last complete data set when this study was begun, who participated in the required Louisiana Educational Assessment Program (LEAP). The study examined students who participated in the 2008 LEAP language arts and mathematics testing. This test was a cumulative criterion-referenced measure of required course content for grades 5 through 8. Course codes for formal arts instruction (music and visual arts) were examined. Students' poverty levels were identified by those required to pay for their lunch and



those who are eligible for free lunch services. The population was students who participated in the 2008 eighth-grade English language arts and mathematics LEAP tests.

The original Louisiana Department of Education database, maintained by the Division of Student Standards and Assessment, contained 51,355 eighth grade records for that school year. Access protocols required by the Louisiana Department of Education to assure anonymity of individuals consistent with Federal Educational Records Privacy Act (FERPA) and Louisiana law were followed. The database of student test scores was merged with the database of course enrollment, using the unique student identification number. This yielded more than 377,000 lines of data. The data were retained that contained English language arts scores, mathematics scores, and a site code which documents that the data are from a public school. After the visual arts and music students were identified, the data were copied into a spreadsheet. A spreadsheet was used to distinguish non-arts students from students in the arts groups, and, within the latter, music students from visual arts students and from students simultaneously enrolled in music and visual arts (Appendix E). This served to ensure that student data were only represented once.

Data that did not have course codes indicating study in music or visual arts, but indicated study in either dance or theatre arts were excluded from the data set. Literature, presented in the previous chapter, indicated a positive benefit to dance and theatre education experiences. The data identified eighty-five dance and sixty-three theatre records indicating that students had received dance or theatre instruction. These records were deleted from the data table.

Data which indicated study in those disciplines could not be assigned to any group in this study. Records identified eighty-five female students, at three schools, who had a course code indicating dance and seventy-six students, at three schools, who had a course code indicating theatre. Site codes were recorded and students from these schools who matched the descriptions to be given remained in the sample. One site code contained records indicating study of all four

arts. The records identified a unique sample not representative of the population. There were too few dance or theatre records to conduct comparisons that could be generalized to a population.

Students who had the score of 100 in English language arts and mathematics subtests were removed from the data set. This score is the lowest possible in the range of 100-500. It was not possible to determine if 100 represented an actual score or an indication that the student did not complete the subtests. There were 29 records removed that contained criterion variables of 100 in English language arts and mathematics subtests.

In order to control for the possibility of unequal representation within the predictor subgroups tested, such categories as gifted, talented, specific learning disabled, mild-moderate disabled, and similar categories of exceptionalities were removed. Table 3 lists all special education categories for which data was collected and removed from this study's database (Data Recognition Corporation, 2008).

### **Sub-Groups.**

#### **Music Group.**

The music group included students who were enrolled in Louisiana public schools eighth grade during the 2007-2008 school year. Students were assigned to this group based on course codes recorded by the Louisiana Department of Education (LDE). All music courses begin with 0303 or 0304. An example of how these records were reviewed is available in Appendix E.

#### **Visual Arts Group.**

The visual arts group included students who were enrolled in Louisiana public schools eighth grade during the 2007-2008 school year. Students were assigned to this group based on course codes recorded by the LDE. All visual arts courses begin with 0305. An example of how these records were reviewed is available in Appendix E.

Table 3  
Summarized Special Education Category

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Gifted
Talented
Autism
Deaf/blindness
Developmental Delay
Emotional Disturbance
HI-Deaf
HI-Hard of Hearing
Mild Mental Disability
Moderate Mental Disability
Orthopedic Impairment
Other Health Impairment
Specific Learning Disability
Speech or Language Impairment
Traumatic Brain Injury
Visual Impairment
Other (Multi Disabilities, Profound Mental Dis., Severe Mental Dis.)

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### **Dual Arts Group.**

The dual arts group included students who were enrolled in music and visual arts in Louisiana public schools eighth grade during the 2007-2008 school year. Students were assigned to this group based on course codes representing music and visual arts education as recorded by the LDE. An example of how these records were reviewed is available in Appendix E.

### **No Arts Group.**

The no arts group included students who were enrolled in Louisiana public schools eighth grade during the 2007-2008 school year. Students were assigned to this group based on course codes recorded by the LDE. Students whose records did not contain course codes representing music or visual arts education for that academic year were assigned to this group. An example of how these records were reviewed is available in Appendix E.

### **Research Design**

The research design was an *ex post facto* population study of the data available and the policy question. This study focused on the state-level exception to law and policy that directly

affects individual students' equal access to curriculum necessary for their development to their fullest potential (La. Const. 8: 1, 1974). Schools, attendance patterns, longitudinal data, or any other descriptive data—except test scores, course codes, and prescribed academic standards, benchmarks, and foundation skills (curriculum outcomes)—were not available and/or had inconsistent definitions. There were at least 34 patterns of grade assignment in middle-level education with populations ranging from prison schools to schools with highly selective admission requirements. Schools as a variable limited any analysis and applicability. No sampling technique other than convenience sampling was available due to a lack of consistent definitions within the population, thus a population study was necessary.

The study's focus was a state policy used to limit student access to a full curriculum—the arts for all students. This reduction of the arts curriculum assumed that it was more important for students to spend additional time in “tested” subjects (i.e., English and math) than for them to develop the knowledge, skills, and habits unique to arts instruction. To study this, the operational criterion variable was scaled test scores. The predictor variables were instruction (course codes), SES, and ethnicity (Black and White). Instruction (course codes) was defined as 130 to 170 hours of arts instruction per academic year using standards-based curriculum delivered by a certified educator.

#### **Data Sources and Standardized Test (LEAP test)**

The data sources used were electronically stored student records maintained by the Louisiana Department of Education, inclusive of course codes, LEAP data, and demographic data. The LEAP is a high-stakes test which is required for students in their fourth and eighth grade years. Eighth grade students take the LEAP test during the spring semester. It is a cumulative criterion-referenced measure of required course content for grades five through eight in the areas of English language arts, mathematics, science, and social studies. The English

language arts and mathematics subtests were first administered to eighth grade students during the spring of 1999. The science and social studies subtests were first administered to eighth grade students during the spring of 2000. The LEAP tests are aligned specifically to state content benchmarks. The state content standards for English language arts and mathematics are in Appendix F Content Standards Measured by LEAP. Non-promotional subjects (science and social studies) were not included in this study to more tightly focus the definition of the predictor and criterion variables. According to Louisiana state statutes, rigorous tests are required using the National Assessment of Educational Progress as a measure of quality. Students receive one of five achievement ratings: Advanced, Mastery, Basic, Approaching Basic, or Unsatisfactory (LDE, 2009a). Descriptions of the achievement ratings are found in Table 4. The scores that correspond to these ratings are in Appendix B.

Table 4  
Description of Achievement Ratings

Rating	Description
Advanced	A student at this level has demonstrated superior performance beyond the level of mastery.
Mastery	A student at this level has demonstrated competency over challenging subject matter and is well prepared for the next level of schooling.
Basic	A student at this level has demonstrated only the fundamental knowledge and skills needed for the next level of schooling.
Approaching Basic	A student at this level has only partially demonstrated the fundamental knowledge and skills needed for the next level of schooling.
Unsatisfactory	A student at this level has not demonstrated the fundamental knowledge and skills needed for the next level of schooling.

According to the Louisiana Department of Education, the LEAP test was designed to ensure that students adequately achieve the requisite knowledge and skills to proceed to grade nine (LDE, 2008c). Since the spring of 2006, students are required to score “Basic” or above on either the English language arts subtest or mathematics subtest and “Approaching Basic” or above on the other test (LDE, 2008c). Social studies and science are not covered under the policy being studied.

The English language arts test had four sessions measuring six of the seven content standards. The sessions are: writing, using information resources, reading and responding, and proofreading. The formats combine select response items with constructed response items. The mathematics test has two parts. Part one is in a multiple choice format and measures all six standards (Appendix F). Part two is in a constructed response format and has four complex mathematical tasks which require students to apply multiple skills in order to arrive at the solution. The purpose of this part is to document each student's mathematical literacy and ability to apply mathematics (LDE, 2008c). English language arts scores and mathematics scores are student level data collected from the LEAP test administration. The range of scale scores has a low of 100 and a high of 500 on each subtest.

Eight steps occurred during the development and administration of the 2008 LEAP test. The LDE reported them as: (1) item writing; (2) committee reviews; (3) revision; (4) field testing; (5) field-test data analysis; (6) operational form selection; (7) operational administration; and (8) operational test data analysis. Content validity was determined by expert review committees and revisions were made, when necessary. The approved items were then field tested. Analyses of the items, including difficulty indices, were returned to the committee who determined which items had sufficient discriminatory quality to remain in the item pool (LDE, 2008c). Data Recognition Corporation and Pacific Metrics, two outside contractors, performed the operational form selection, operational administration, and the operational test data analysis. The reliability of the test was calculated from a research sample of the students who took the spring 2008 test administration. The reliability was reported by a Cronbach's alpha of .88 for the English language arts subtest and .92 for the mathematics subtest. A reliability coefficient of .70 or higher is considered acceptable in most social science research situations. A second method which considered the inclusion of constructed-response items to the test design reported a

stratified alpha of .89 for the English language arts subtest and .93 for the mathematics subtest (LDE, 2008c).

The test scores were derived from administration of the LEAP test, which is conducted by a certified teacher. Each person who came into contact with the test had been trained in test security. The tests were sent to a contractor who scored the documents and recorded the results to data files. Course code data were entered at the school level by the official assigned registration duties.

### **Data Collection Procedures**

The 2008 eighth grade student LEAP English language arts and mathematics scores for all eighth graders enrolled for the 2007-2008 school session were obtained from the Louisiana Department of Education Division of Curriculum Standards. The two criterion variables were English language arts scaled scores, and math scaled scores. These data sets included specific descriptors of the students including: Generated ID, School Site Codes, School Course Codes, Gender, Ethnicity, and Summarized Socioeconomic Status (SES). Course Codes (English language arts or mathematics), Ethnicity (American Indian, Asian, Black, Hispanic, or White), and Summarized Socioeconomic Status (free lunch eligible, reduced lunch eligible, or paid lunch) were the predictor variables.

### **Data Analysis**

Using PASW Statistics GradPack 18.0, formerly SPSS, mean scores of students who were enrolled in music and visual arts courses and those with no indicator of enrollment in the arts were separated. These were computed for students in poverty and those significantly above the poverty level. The parametric technique for describing population mean differences is multiple analysis of variance (MANOVA). The predictor variables listed above were analyzed as to their influence on the criterion variables of English language arts and mathematics scores.

MANOVA was selected because the two criterion variables (English language arts and mathematics subtests) were examined simultaneously (Singh, 2007, p. 184). This technique was chosen to analyze effects of multiple predictor variables on the criterion variables. Course codes, SES, and ethnicity are being studied as to their effects on the criterion variable, academic achievement (test scores) (Gravetter & Wallnau, 2000). MANOVA is appropriate when “we are interested in not just one criterion variable, but perhaps, two, three, four or more such characteristics” (Kachigan, 1986, p. 326). The predictor, qualitative, variables studied were instruction (course codes), SES, and ethnicity (Black and White). None of these were quantitative variables. The criterion variables studied were eighth grade English language arts and eighth grade mathematics LEAP test scores expressed in quantitative standard score format.

Kerlinger (1973) states that, “hypotheses can be deduced from theory and from other hypotheses” (p. 20). Hypotheses indicate whether they are likely true or likely false. The data are used to suggest whether the research hypothesis is likely or unlikely. Through the null hypothesis the researcher examines the possibility that there is no relationship between the criterion (resultant) variables or that any relationship observed is due to chance (Singh, 2007). This technique enables the researcher to approach objectivity and advance knowledge (Kerlinger, 1973). The researcher starts with a problem. In this case, was the exception to arts study beneficial for students and consistent with the constitutional mandate of equal opportunity for each student’s fullest development?

### **Null Hypotheses**

I.A.1. There is no significant difference between the LEAP English language arts scores of middle and high SES eighth grade students who were exempted from formal music study and the scores of their peers enrolled in music courses.



- I.A.2. There is no significant difference between the LEAP English language arts scores of low SES eighth grade students who were exempted from formal music study and the scores of their peers enrolled in music courses.
- I.A.3. There is no significant difference between the LEAP English language arts scores of eighth grade students who were exempted from formal music study and the scores of their peers enrolled in music courses.
- I.A.4. There is no significant difference between the LEAP English language arts scores of Black eighth grade students who were exempted from music study and the scores of their peers enrolled in music courses.
- I.A.5. There is no significant difference between the LEAP English language arts scores of White eighth grade students who were exempted from music study and the scores of their peers enrolled in music courses.
- I.B.1. There is no significant difference between the LEAP mathematics scores of middle and high SES eighth grade students who were exempted from formal music study and the scores of their peers enrolled in music courses.
- I.B.2. There is no significant difference between the LEAP mathematics scores of low SES eighth grade students who were exempted from formal music study and the scores of their peers enrolled in music courses.
- I.B.3. There is no significant difference between the LEAP mathematics scores of eighth grade students who were exempted from formal music study and the scores of their peers enrolled in music courses.
- I.B.4. There is no significant difference between the LEAP mathematics scores of Black eighth grade students who were exempted from music study and the scores of their peers enrolled in music courses.

- I.B.5. There is no significant difference between the LEAP mathematics scores of White eighth grade students who were exempted from music study and the scores of their peers enrolled in music courses.
- II.A.1. There is no significant difference between the LEAP English language arts scores of middle and high SES eighth grade students who were exempted from formal visual arts study and the scores of their peers enrolled in visual arts courses.
- II.A.2. There is no significant difference between the LEAP English language arts scores of low SES eighth grade students who were exempted from formal visual arts study and the scores of their peers enrolled in visual arts courses.
- II.A.3. There is no significant difference between the LEAP English language arts scores of eighth grade students who were exempted from formal visual arts study and the scores of their peers enrolled in visual arts courses.
- II.A.4. There is no significant difference between the LEAP English language arts scores of Black eighth grade students who were exempted from visual arts study and the scores of their peers enrolled in visual arts courses.
- II.A.5. There is no significant difference between the LEAP English language arts scores of White eighth grade students who were exempted from visual arts study and the scores of their peers enrolled in visual arts courses.
- II.B.1. There is no significant difference between the LEAP mathematics scores of middle and high SES eighth grade students who were exempted from formal visual arts study and the scores of their peers enrolled in visual arts courses.
- II.B.2. There is no significant difference between the LEAP mathematics scores of low SES eighth grade students who were exempted from formal visual arts study and the scores of their peers enrolled in visual arts courses.

- II.B.3. There is no significant difference between the LEAP mathematics scores of eighth grade students who were exempted from formal visual arts study and the scores of their peers enrolled in visual arts courses.
- II.B.4. There is no significant difference between the LEAP mathematics scores of Black eighth grade students who were exempted from visual arts study and the scores of their peers enrolled in visual arts courses.
- II.B.5. There is no significant difference between the LEAP mathematics scores of White eighth grade students who were exempted from visual arts study and the scores of their peers enrolled in visual arts courses.
- III.A.1. There is no significant difference between the LEAP English language arts scores of middle and high SES eighth grade students who were exempted from formal arts study and the scores of their peers enrolled in music and visual arts courses.
- III.A.2. There is no significant difference between the LEAP English language arts scores of low SES eighth grade students who were exempted from formal arts study and the scores of their peers enrolled in music and visual arts courses.
- III.A.3. There is no significant difference between the LEAP English language arts scores of eighth grade students who were exempted from formal arts study and the scores of their peers enrolled in music and visual arts courses.
- III.A.4. There is no significant difference between the LEAP English language arts scores of Black eighth grade students who were exempted from formal arts study and the scores of their peers enrolled in music and visual arts courses.
- III.A.5. There is no significant difference between the LEAP English language arts scores of White eighth grade students who were exempted from formal arts study and the scores of their peers enrolled in music and visual arts courses.

- III.B.1. There is no significant difference between the LEAP mathematics scores of middle and high SES eighth grade students who were exempted from formal arts study and the scores of their peers enrolled in music and visual arts courses.
- III.B.2. There is no significant difference between the LEAP mathematics scores of low SES eighth grade students who were exempted from formal arts study and the scores of their peers enrolled in music and visual arts courses.
- III.B.3. There is no significant difference between the LEAP mathematics scores of eighth grade students who were exempted from formal arts study and the scores of their peers enrolled in music and visual arts courses.
- III.B.4. There is no significant difference between the LEAP mathematics scores of Black eighth grade students who were exempted from formal arts study and the scores of their peers enrolled in music and visual arts courses.
- III.B.5. There is no significant difference between the LEAP mathematics scores of White eighth grade students who were exempted from formal arts study and the scores of their peers enrolled in music and visual arts courses.

Predictor variables entered into the statistics program were course enrollment, SES, and ethnicity. Students' scores on the 2008 LEAP English language arts and mathematics subtest served as the criterion variables. A MANOVA of the effects of these predictor variables on the criterion variables were calculated with post-hoc tests of significance.

### **Summary**

The methodology addressed the central question whether a reduction in time spent in English language arts and mathematics for the purpose of studying music and visual arts affected performance as measured on LEAP tests. Analysis of achievement scores (as defined by English language arts and mathematics scores on the LEAP test) were examined by subgroups within the

population of Louisiana public school eighth grade students. A comparison of mean score differences, the effects of the identified factors on the criterion variables (test scores) among the subgroups of the population were reported.

## **CHAPTER IV**

### **FINDINGS**

#### **Purpose**

The purpose of this study was to examine whether administrative exclusion of students from required instruction in music and the visual arts results in higher performance on English language arts (ELA) and mathematics tests. The study, therefore, compared ELA and math scores of students enrolled in music and/or visual arts with the scores of those students who received no formal arts education. Both Louisiana statutes and federal education law define arts instruction as an essential component of a core curriculum. To accomplish these objectives, test scores of those students who were enrolled in music or visual arts courses in the benchmark-testing year for middle grades were compared to students with no arts enrollment. This chapter is organized into four sections. The first section summarizes the analytic procedures. The second section provides a description of the data, and the third section describes the population. The final section reviews the research objectives, and reports the results for each research question posed in chapter one. A summary is provided.

#### **Analytic Procedures**

Data were loaded to perform multivariate analysis of variance (MANOVA). Assumptions were checked and violations noted. Separate independent *t* tests were calculated to examine each of the research objectives.

#### **Description of the Data**

Data sources were electronically stored student records obtained from the Louisiana Department of Education. They included student demographic information, test scores, and course enrollment information. They were presented in a text file and imported into a database program.

The following data were eliminated because the state policy in question only applies to public school students. The first step was to remove data that contained records of students in grades 4, 10, 11, so that only information on grade 8 remained, leaving 57,544 records. Next the data were sorted according to the homeschool/non-public school flag. All data indicating enrollment in homeschool or non-public schools were removed (2,058) so that only public school data remained. Site code information was used to identify remaining data considered non-public (135). A site code is a unique six-digit number used to identify a school. Four records were removed because the school was labeled unknown.

Next, data were sorted according to the English language arts (ELA) Scaled Score. All data indicating no score (blank) were removed (5,966). Data were also sorted by the Math Scaled Score. All data indicating no score (blank) were removed (46). Additionally, records that had a score of 100 (test not attempted) in both ELA and math were removed (29). These data were eliminated to avoid the bias of non-completers and to remove potential outliers.

Data were stratified according to the Louisiana Generated Student ID number (LAGenID). The LAGenID code is a unique nine-digit number used to identify a specific student's data (N.B.—This number is not the student's social security number). It was later replaced with a sequential series of numbers before it left the Department of Education. Because only students with ID numbers can be connected with course enrollment data, all data that did not have an ID number were removed (2,329). A database query was created to combine test scores with course enrollment data. A relationship was established using the LAGenID and the SiteCode columns in both tables. The database query used this relationship to match data from both tables. This resulted in a database of 361,593 lines of course enrollment. Every course in which a student was enrolled represents one line in the database. The information from the database containing student records and course codes is presented in Table 5. There were 86

records of enrollment in dance courses; 9,750 in music courses; 79 in theatre; and 5,147 in visual arts.

Table 5  
Enrollment in Elective Courses of Eighth Grade Students in Louisiana Public Schools

Category	<i>n</i>	percentage <sup>a</sup>
Reading	32,251	87
Rotating Elective <sup>b</sup>	21,687	58
Music	9,750	26
Special Ed. Elective <sup>c</sup>	6,171	16
Visual Arts	5,147	14
French	2,620	7
Spanish	2,469	7
Computer Elective	1,547	4
Math Remediation	1,389	4
ELA Remediation	751	2
Floating Teacher (K-E)	549	1
Human Resource Ed	313	1
GED Prep	273	1
Family and Consumer	143	0
Dance	86	0
Theatre	79	0
Latin	22	0
FL Electives	14	0

<sup>a</sup>Percentage does not sum to 100 due to respondents potentially being in multiple categories.

<sup>b</sup>The content for Rotating Electives codes is broad.

<sup>c</sup>The codes for Special Education Electives may be used repeatedly with the same student.

### Preparation of Data

The data file contained course codes for Louisiana public school students. They represented the courses in which students were enrolled in that school year. A query was created to combine course codes with test scores. This was accomplished by linking the LAGenID and the SiteCode columns in both tables. The database query used this process to match data from both sources. The query was then converted into a table. There were 361,593 lines of course enrollment data. Data were stratified by LAGenID and exported to a spreadsheet.

Course codes were stratified and identified with colors to allow for easy identification of all arts courses. There were 15,062 data points indicating formal arts study (dance, music,



theatre, and visual arts). An example of the colored data may be seen in Appendix E. The records were re-stratified by LAGenID. Next, they were examined to ensure that each student's data were present only once in the data set. Each student's program of studies was examined and a course code selected to identify the student as enrolled in music, visual arts, dual arts (music and visual arts), or no arts.

The intent of this process was to ensure that there was only one course code for each student. To achieve this, data used in this analysis were selected through the following process. Data representing formal arts education (dance, music, theatre, visual arts) were selected in priority. Data indicative of remediation or reading courses were selected next. If a student was not enrolled in one of those courses, then a course code was selected which was a logical substitute for exploratory or remediation courses. If a logical substitute was unavailable, a course code was selected to make sure the students' data were included in the data set. Records indicating students who had both music and visual arts were assigned a unique code, replacing both the music and visual arts codes. Data indicating formal study of dance and theatre were also removed because there were not enough dance or theatre students to have a representative sample and to avoid the potential bias of formal study in the other performing arts.

All data indicative of special education were removed. Data were stratified by Summarized Special Education Category. There were 6,579 student records that indicated a category of exceptionality, as shown in Table 6.

Students assigned to Special Education Elective (500098-500104) did not have data in the Summarized Special Education Category. Therefore, to ensure that only non-special education students were represented in the data set, 2,093 records were removed because enrollment records indicated assignment to the Special Education Elective course. These data were eliminated to avoid potential bias between special education and non-special education.

Table 6  
Special Education Classification of Eighth Grade Students in Louisiana Public Schools

Category	<i>n</i>
Specific Learning Disability	2218
Gifted	1931
Other Health Impairment	740
Talented	694
Speech or Language Impairment	373
Emotional Disturbance	254
Mild Mental Disability	158
Orthopedic Impairment	74
Autism	51
HI-Hard of Hearing	45
HI-Deaf	23
Traumatic Brain Injury	10
Visual Impairment	5
Other (Multi Disabilities, Profound Mental Dis., Severe Mental Dis.)	2
Moderate Mental Disability	1
Deaf/blindness	0
Developmental Delay	0
Total	6,579

After all enrollment data were identified, they were exported to another database. The database file contained two tables: one of enrollment and one of test data. A query was created to combine the data from both tables. A data relationship was established using the LAGenID and the SiteCode columns in both tables. The database query used this relationship to match data from both tables. The query was then converted into a table. The table contained 37,222 records.

### **Description of the Population**

Table 7 contains the demographic information for the data ( $N = 37,222$ ) used in this study. SES, gender, and ethnicity were retrieved from the data file containing test scores. These data were printed on testing materials and according to the testing manual, test proctors directed students to check the data for accuracy. The course enrollment data were combined to the test score data by a data manager (IT Consultant) at the Louisiana Department of Education. Data were then selected as previously described.

Table 7  
Selected Demographic Characteristics of Eighth Grade Students in Louisiana Public Schools

<u>Demographics</u>	<u><i>n</i></u>	<u>percentage<sup>a</sup></u>
Free	20,034	54
Paid	14,045	38
Reduced	3,143	8
Female	19,460	52
Male	17,762	48
White	18,369	49
Black	17,094	46
Hispanic	979	3
Asian	491	1
American Indian	289	1
<u>Arts</u>		
Music	7,002	19
Visual Arts	3,236	9
Music and Visual Arts	609	2
<u>No arts</u>		
Reading	17,381	47
Other non-arts	4,063	11
General Elective (Rot.)	3,714	10
Math Remediation	732	2
ELA Remediation	485	1

<sup>a</sup>Percentage may not sum to 100 due to rounding.

### **Socio-Economic Status**

Socio-economic status (SES) was determined from the data file. Low SES (eligible for assistance) was considered as those students receiving free or reduced lunches (Appendix A). The records indicated that nearly two-thirds of the students were eligible for assistance (see Table 7).

### **Gender**

Gender was determined from the data file. Records indicated there were more female students than male students (see Table 7).

### **Ethnicity**

Ethnicity was determined from the data file. Records indicated that the majority of students (95%) consisted of Black and White students (see Table 7).

### **Course Enrollment**

Course enrollment data represented the courses in which students were enrolled in the 2007-2008 school year. Records indicated that less than a third of the students were enrolled in visual and performing arts courses (see Table 7).

## **Results**

### **Research Objectives**

This study had three main objectives, inquiring about the possible effects of

- I. music enrollment as a predictor of success in ELA and math scores;
- II. visual arts enrollment as a predictor of success in ELA and math scores; and
- III. dual enrollment (music and visual arts) as a predictor of success in ELA and math scores.

### **MANOVA Assumptions Tested**

Multivariate analysis of variance (MANOVA) is an inferential statistical procedure that measures the difference between groups on the mathematical combination of two or more metric, interval level, criterion variables (Tabachnick & Fidell, 1996). Predictor variables are nonmetric—nominal or ordinal. This study used criterion variables that were ELA and math scaled scores for criterion referenced tests and predictor variables that had several nonmetric levels. This technique is best when all independent, criterion variables can be controlled. The assumptions of MANOVA are sample independence of observations, normality among criterion variables, homoscedasticity, and sensitivity to outliers (Hair, Black, Babin, Anderson, & Tatham, 2006; Leech, Barrett, & Morgan, 2008).

The purpose for using MANOVA was to employ multiple variables in a single analysis and control the experimentwide error rate (Hair, et al., 2006). The data were entered into PASW 18. Davis (1971) would describe the relationship between ELA scale score and the math scale score ( $r = .656$ ) as a substantial positive association, the relationship between course enrollment and ELA scale scores ( $r = .025$ ) as negligible positive association, and the relationship between course enrollment and math scale scores ( $r = .030$ ) as negligible positive association. These relationships were significant at the 0.001 level (2-tailed) (see Table 8).

Table 8  
Bivariate Correlation Tests Between Test Scores, Course Enrollment, Free and Reduced Lunch Eligibility, and Ethnicity

	ELA Scale	Math Scale	Course Enrollment	FRL <sup>a</sup>	Ethnicity
ELA Scale	1	.656 .001	.025 .001	.295 .001	.282 .001
Math Scale		1	.030 .001	.294 .001	.317 .001
Course Enrollment			1	.029 .001	-.028 .001
Free/Reduced Lunch				1	.436 .001

Note. All correlations are Pearson Product Moment, 2-tailed significance.

<sup>a</sup>An abbreviation for Free/Reduced Lunch.

The relationship between ELA and math scores was .656, as shown in Table 8. When variables have a substantial positive association, more than .60, creating a composite variable or eliminating one of the variables is recommended (Davis, 1971; Leech, et al., 2008). There were only two criterion variables. This did not allow for the elimination of a variable. A composite variable would have impeded the interpretation of the output, thus making the data uninterpretable.

The data were obtained from the Louisiana Department of Education. The observations, criterion variables, were as independent as the individuals who entered the course enrollment data. MANOVA requires that the sample group sizes be equal or approximately equal. As long as the larger group is not more than 1.5 times the smaller group size, the groups are considered approximately equal (Hair, et al., 2006; and Leech, et al., 2008). “The effectiveness of the analysis is dictated by the smallest group sizes, thus always making sample size considerations a primary concern” (Hair, et al., 2006, p. 402). The groups for this study were Music (7,002), Visual Arts (3,236), Dual Arts (609), and No Arts (26,375), thus the ratio between the largest group and the smallest group was 43.3 to 1. These sub-population sizes severely violated this assumption.

The Box’s Test of Equality of Covariance was significant ( $p < .001$ ); which indicated that the assumption of homogeneity was violated (see Table 9). It is recommended that correlations among variables be examined separately for the groups and the magnitude of the discrepancies noted. None of the multivariate tests would be robust if Box’s test were significant; therefore, caution must be exercised when interpreting these results (Hair, et al., 2006; Leech, et al., 2008). “If sample sizes are unequal and Box’s  $M$  test is significant at  $p < .001$ , then robustness is not guaranteed” (Tabachnick & Fidell, 1996, p. 382).

Table 9  
Box’s Test of Equality of Covariance Matrices

Box’s M	$F$	df1	df2	sig.
1950.538	16.934	111	24456.812	.001

The correlation of criterion variables was assessed using Bartlett’s Test for Sphericity. This test indicated that there was a significant degree of intercorrelation ( $p < .001$ ) (see Table 10). Violations of the normality assumption have little impact with larger sample sizes. However, this may cause difficulties in applying Box’s  $M$  Test. Transformations were again recommended

(Hair, et al., 2006). This research technique assumed a sample and inferential statistics. Moderate sample sizes can accommodate modest violations as long as they are due to skewness and not outliers (Hair, et al., 2006). This population was beyond the level where violations can be supported.

Table 10  
Bartlett's Test of Sphericity

Likelihood Ratio	Approx. Chi-Square	df	sig.
.001	20884.605	2	.001

Skewness for all ELA scale scores was -.959. This indicated that there were more cases in the right tail, and the left tail was too long. The music group had a skewness value of -.769, the smallest skewness. The visual arts group had a skewness value of -1.108, the largest skewness. Skewness for all math scale scores was -.139. This indicated that there were more cases in the right tail, and the left tail is too long. The no arts group had -.155, the smallest skewness. The dual arts group had -1.789, the largest skewness.

The data for this population suggest that there were violations of normality. With a large sample, the size of the skewness is more important than the significance level (Tabachnick & Fidell, 1996). Here, the skewness was not significant. With large groups, both the graphical plots and the statistical tests are used to assess the degree of departure from normality (Hair, et al., 2006). The plots for both ELA and math appeared to have symmetry. Both had more than expected scores in the extremes of both tails. However, because these were naturally occurring in the population, there was no justification for removing them.

During the preparation of the data, potential outliers, i.e., students who were identified as gifted, talented, or special education were removed. One hundred and forty eight (148) gifted and talented students had the highest possible score (500) on one or both of the tests. Any student record that did not have both an ELA score and a math score was removed; so was any record

that had the lowest possible score (100) on both tests. The remaining data were representative of observations in the population. Table 11 shows the number of students in each group, the English language arts (ELA) mean score, mathematics (math) mean score, and their respective standard deviations.

Table 11  
Group Enrollment Statistics

<u>Condition</u>	<u><i>n</i></u>	<u>percentage</u>	<u>ELA M</u>	<u><i>SD</i></u>	<u>Math M</u>	<u><i>SD</i></u>
No Arts	26,375	71	319.19	37.086	326.71	33.624
Music	7,002	19	329.00	35.246	334.87	34.571
Visual Arts	3,236	9	319.68	38.901	328.14	34.295
Dual	609	2	307.86	47.050	318.12	40.328

### MANOVA Analysis

When the data consist of multiple criterion and multiple predictor variables, a multifactor MANOVA is recommended (Kachigan, 1986; Tabachnick & Fidell, 1996). Because the data for this analysis were ELA and math scale scores, they were not suitable or appropriate for a repeated measures (within groups) test. A one-way MANOVA was conducted with treatment as between-subjects predictor variables and the test scores treated as criterion variables.

A one-way MANOVA was conducted on two criterion variables (ELA scale scores and mathematics scale scores) and the following predictor variables—course enrollment (music, visual arts, dual arts, no arts), SES (low and high), and ethnicity (American Indian, Asian, Black, Hispanic, White). PASW Statistics GradPack 18.0 was used for the analysis. The assumptions of independence of observations and homogeneity of variance were checked and shown to be violated. The multivariate test using the Pillai's Trace criteria was not statistically significant  $F(22, 74366) = 1.431; p = .087$ , multivariate  $\eta^2 = .001$ .

Due to the possibility that the violation of assumptions contributed to the results of this analysis, a series of univariate tests was conducted. The literature reviewed cautioned that



sample sizes should be kept approximately equal (Hair, et al., 2006). The ratio between the smallest and the largest group was 1:43. The ratio between the second largest group and the largest group was 1:3.8. The assumptions for homogeneity of variance and normality having been violated, a series of independent *t* tests were used to explore the questions (Hair, et al., 2006). This study explored differences among students who took both the ELA and math portions of the LEAP and were not identified as special education or enrolled in special education. There were large differences in the sizes of each group.

An examination of the data for music students indicated that the Box test of equality of covariance matrices was significant (Box's  $M = 1950.538$ ;  $p = .001$ ). When the Box test indicates significance, literature recommends that the dependent variables be transformed, mathematically altered. However, the same literature also cautions the researcher that the interpretation of transformed data can be difficult and possibly change the results (Hair, et al., 2006; Leech, et al., 2008). Therefore transformations were not conducted.

### **I. Music Course Enrollment as a Predictor of Success in English and Math**

The first ten research questions (I.A.1-5.; I.B.1-5.) examine differences between music and no music students on the LEAP English language arts (ELA) scores and math scores. There were a total of 37,222 records involved in this study. They indicated 7,611 (20%) music students and 29,611 (80%) no music students. There were 3,305 (9%) middle and high SES music students and 10,740 (29%) middle and high SES no music students; 3,636 (10%) low SES music students and 16,398 (44%) low SES no music students; 4,104 (11%) female music students and 15,356 (41%) female no music students; 3,507 (9%) male music students and 14,255 (38%) male no music students; 3,584 (10%) Black music students and 13,510 (36%) Black no music students; and 3,727 (10%) White music students and 14,642 (39%) White no music students.

### **I.A.1. Comparison of ELA Scores of Music and No Music Students**

An independent-samples  $t$  test was conducted to compare ELA scores of students enrolled in music courses with those of students not enrolled in music courses. There were 7,611 music students and 29,611 no music students. The difference between the scores of music ( $M = 327.31$ ,  $SD = 36.78$ ) and no music ( $M = 319.24$ ,  $SD = 37.29$ );  $t(37,220) = 16.88$ ,  $p < .001$  was significant beyond .01 ( $p < .01$ ) (see Table 12). These results revealed a significant difference such that students in music had higher mean scores.

### **I.A.2. Comparison of ELA Scores of Middle and High SES Music and No Music Students**

An independent-samples  $t$  test was conducted to compare ELA scores of middle and high SES students enrolled in music courses with those of students not enrolled in music courses. There were 3,305 middle and high SES music students and 10,740 middle and high SES no music students. Levene's test was used to test the assumption of homogeneity of variance. Results of that test indicated that there was a significant difference. Thus the assumption for the equality of variances was violated and the separate variance calculation was used to test the difference between groups. The difference between the scores for music ( $M = 340.69$ ,  $SD = 31.25$ ) and no music ( $M = 332.57$ ,  $SD = 33.3$ );  $t(5,799) = 12.86$ ,  $p < .001$  was significant beyond .01 ( $p < .01$ ) (see Table 12). These results revealed a significant difference such that students in music had higher mean scores.

### **I.A.3. Comparison of ELA Scores of Low SES Music and No Music Students**

An independent-samples  $t$  test was conducted to compare ELA scores of low SES students enrolled in music courses with those of students not enrolled in music courses. There were 3,636 low SES music students and 16,398 low SES no music students. The difference between the test scores of music ( $M = 314.97$ ,  $SD = 37.97$ ) and no music ( $M = 309.73$ ,  $SD =$

37.85);  $t(20,032) = 7.55$ ,  $p < .001$  was significant beyond .01 ( $p < .01$ ) (see Table 12). These results revealed a significant difference such that students in music had higher mean scores.

Table 12  
Differences Between Music and No Music Students on ELA Scores

Enrollment	( <i>n</i> )	percentage	<i>M</i> ( <i>SD</i> )	<i>t</i>	df	<i>p</i> <sup>a</sup>
<u>All Students</u>						
Music	7,611	20	327.31 (36.778)	16.882	37,220	.001
No music	29,611	80	319.24 (37.289)			
<u>High/Middle SES</u>						
Music	3,305	9	340.69 (31.248)	12.857	5,799.158	.001
No music	10,740	29	332.57 (33.301)			
<u>Low SES</u>						
Music	3,636	10	314.97 (37.970)	7.550	20,032	.001
No music	16,398	44	309.73 (37.853)			
<u>Black</u>						
Music	3,584	10	314.47 (37.806)	10.079	17,092	.001
No music	13,510	36	307.37 (37.393)			
<u>White</u>						
Music	3,727	10	339.83 (29.490)	17.018	6,142.151	.001
No music	14,642	39	330.46 (31.929)			

<sup>a</sup>Two-tailed.

#### I.A.4. Comparison of ELA Scores of Black Music and No Music Students

An independent-samples *t* test was conducted to compare ELA scores of Black students enrolled in music courses with those of students not enrolled in music courses. There were 3,584 Black music students and 13,510 Black no music students. The difference between the scores for music ( $M = 314.47$ ,  $SD = 37.81$ ) and no music ( $M = 307.37$ ,  $SD = 37.39$ );  $t(17,092) = 10.08$ ,  $p < .001$  was significant beyond .01 ( $p < .01$ ) (see Table 12). These results revealed a significant difference such that students in music had higher mean scores.

### **I.A.5. Comparison of ELA Scores of White Music and No Music Students**

An independent-samples  $t$  test was conducted to compare ELA scores of White students enrolled in music courses with those of students not enrolled in music courses. There were 3,727 White music students and 14,642 White no music students. Levene's test was used to test the assumption of homogeneity of variance. Thus the assumption for the equality of variances was violated and the separate variance calculation was used to test the difference between groups. The difference between the scores for music ( $M = 339.83$ ,  $SD = 29.49$ ) and no music ( $M = 330.46$ ,  $SD = 31.93$ );  $t(6,142) = 17.02$ ,  $p < .001$  was significant beyond .01 ( $p < .01$ ) (see Table 12). These results revealed a significant difference such that students in music had higher mean scores.

### **I.B.1. Comparison of Math Scores of Music and No Music Students**

An independent-samples  $t$  test was conducted to compare math scores of students enrolled in music courses with those of students not enrolled in music courses. There were 7,611 music students and 29,611 no music students. The difference between the scores of music ( $M = 333.53$ ,  $SD = 35.36$ ) and no music ( $M = 326.87$ ,  $SD = 33.7$ );  $t(37,220) = 15.23$ ,  $p < .001$  was significant beyond .01 ( $p < .01$ ) (see Table 13). These results revealed a significant difference such that students in music had higher mean scores.

### **I.B.2. Comparison of Math Scores of Middle and High SES Music and No Music Students**

An independent-samples  $t$  test was conducted to compare math scores of middle and high SES students enrolled in music courses with those of students not enrolled in music courses. There were 3,305 middle and high SES music students and 10,740 middle and high SES no music students. The difference between the scores for music ( $M = 345.95$ ,  $SD = 33.85$ ) and no music ( $M = 339.24$ ,  $SD = 33.1$ );  $t(14,043) = 10.14$ ,  $p < .001$  was significant beyond .01 ( $p < .01$ )

(see Table 13). These results revealed a significant difference such that students in music had higher mean scores.

Table 13  
Differences Between Music and No Music Students on Math Scores

Enrollment	( <i>n</i> )	percentage	<i>M</i> ( <i>SD</i> )	<i>t</i>	df	<i>p</i> <sup>a</sup>
<u>All Students</u>						
Music	7,611	20	333.53 (35.357)	15.23	37,220	.001
No music	29,611	80	326.87 (33.700)			
<u>High/Middle SES</u>						
Music	3,305	9	345.95 (33.849)	10.138	14,043	.001
No music	10,740	29	339.24 (33.101)			
<u>Low SES</u>						
Music	3,636	10	322.13 (33.571)	6.559	20,032	.001
No music	16,398	44	318.23 (32.174)			
<u>Black</u>						
Music	3,584	10	319.54 (32.043)	8.850	17,092	.001
No music	13,510	36	314.28 (31.517)			
<u>White</u>						
Music	3,727	10	346.64 (32.288)	14.647	18,367	.001
No music	14,642	36	338.27 (30.816)			

<sup>a</sup>Two-tailed.

### I.B.3. Comparison of Math Scores of Low SES Music and No Music Students

An independent-samples *t* test was conducted to compare math scores of low SES students enrolled in music courses with those of students not enrolled in music courses. There were 3,636 low SES music students and 16,398 low SES no music students. The results difference between the test scores of music ( $M = 322.13$ ,  $SD = 33.57$ ) and no music ( $M = 318.23$ ,  $SD = 32.17$ );  $t(20,032) = 6.56$ ,  $p < .001$  was significant beyond .01 ( $p < .01$ ) (see Table 13). These results revealed a significant difference such that students in music had higher mean scores.

#### **I.B.4. Comparison of Math Scores of Black Music and No Music Students**

An independent-samples  $t$  test was conducted to compare math scores of Black students enrolled in music courses with those of students not enrolled in music courses. There were 3,584 Black music students and 13,510 Black no music students. The difference between the scores for music ( $M = 319.54$ ,  $SD = 32$ ) and no music ( $M = 314.28$ ,  $SD = 31.52$ );  $t(17,092) = 8.85$ ,  $p < .001$  was significant beyond .01 ( $p < .01$ ) (see Table 13). These results revealed a significant difference such that students in music had higher mean scores.

#### **I.B.5. Comparison of Math Scores of White Music and No Music Students**

An independent-samples  $t$  test was conducted to compare math scores of White students enrolled in music courses with those of students not enrolled in music courses. There were 3,727 White music students and 14,642 White no music students. The difference between the scores for music ( $M = 346.64$ ,  $SD = 32.29$ ) and no music ( $M = 338.27$ ,  $SD = 30.82$ );  $t(18,367) = 14.65$ ,  $p < .001$  was significant beyond .01 ( $p < .01$ ) (see Table 13). These results revealed a significant difference such that students in music had higher mean scores.

#### **Summary of Test Scores for Music and No Music Students**

ANOVA indicates that enrollment of students in music courses was found to be a significantly strong predictor variable relative to higher scores in ELA and math. In summary, these results indicated a strong positive relationship between enrollment in music courses and higher scores in both ELA and math.

## **II. Visual Arts Course Enrollment as a Predictor of Success in English and Math**

The penultimate research questions (II.A.1-5.; II.B.1-5.) examine the differences between the English language arts (ELA) scores and math scores of visual arts students and those without visual arts on the LEAP. A total of 37,222 records were involved in this study. They indicated that there were 3,845 (10%) students who had visual arts and 33,380 (90%) whose records did

not indicate visual arts; 1,442 (4%) middle and high SES visual arts students and 12,603 (34%) middle and high SES no visual arts students; 2,105 (6%) low SES visual arts students and 17,929 (48%) low SES no visual arts students; 1,964 (5%) Black visual arts students and 15,130 (41%) Black no visual arts students and 1,696 (5%); and White visual arts students and 16,673 (45%) White no visual arts students.

Because of the significantly strong influence of the music students on the results of the initial tests, additional tests were conducted on the data. In the first tests (I.) the results of the music students were significant, strong, and positive. In the penultimate tests, the music-only students ( $n = 7,002$ ) were included with the no visual arts students. The additional step was to remove the influence of the music students from the equation. Tests follow the initial condition. The questions labeled (a.) have music students included; the questions labeled (b.) have had the music-only students removed.

#### **II.A.1.a. Comparison of ELA Scores of Visual Arts and No Visual Arts Students**

An independent-samples  $t$  test was conducted to compare ELA scores of students enrolled in visual arts courses with those of students not enrolled in visual arts courses. There were 3,845 visual arts students and 33,377 no visual arts students. Levene's test was used to test the assumption of homogeneity of variance. Thus the assumption for the equality of variances was violated and the separate variance calculation was used to test the difference between groups. The difference between the scores of visual arts ( $M = 317.81$ ,  $SD = 40.53$ ) and no visual arts ( $M = 321.25$ ,  $SD = 36.92$ );  $t(4,610) = 5.02$ ,  $p < .001$  was significant beyond .01 ( $p < .01$ ) (see Table 14). These results revealed a significant difference such that students not in visual arts had higher mean scores.

Table 14  
Differences Between Visual Arts and No Visual Arts Students on ELA Scores

Enrollment	(n)	percentage	<i>M</i> ( <i>SD</i> )	<i>t</i>	df	<i>p</i> <sup>a</sup>
<u>All Students</u>						
Visual arts	3,845	10	317.81 (40.525)	-5.024	4609.548	.001
No visual arts	33,377	90	321.25 (36.924)			
<u>High/Middle SES</u>						
Visual arts	1,442	4	332.11 (35.178)	-2.887	14,043	.004
No visual arts	12,603	34	334.76 (32.742)			
<u>Low SES</u>						
Visual arts	2,105	6	306.58 (41.532)	-4.839	2,522.261	.001
No visual arts	17,929	48	311.16 (37.453)			
<u>Black</u>						
Visual arts	1,964	5	305.68 (41.979)	-3.609	2,374.888	.001
No visual arts	15,130	41	309.27 (36.964)			
<u>White</u>						
Visual arts	1,696	5	331.75 (31.329)	-.838	18,367	.402
No visual arts	16,673	45	332.43 (31.709)			

<sup>a</sup>Two-tailed.

#### II.A.2.a. Comparison of ELA Scores of Middle and High SES Visual Arts and No Visual Arts Students

An independent-samples *t* test was conducted to compare ELA scores of middle and high SES students enrolled in visual arts courses with those of students not enrolled in visual arts courses. There were 1,442 middle and high SES visual arts students and 12,603 middle and high SES no visual arts students. The difference between the scores for visual arts ( $M = 332.11$ ,  $SD = 35.18$ ) and no visual arts ( $M = 334.76$ ,  $SD = 32.74$ );  $t(14,043) = 2.89$ ,  $p = .004$  was significant beyond .01 ( $p < .01$ ) (see Table 14). These results revealed a significant difference such that students not in visual arts had higher mean scores.



### **II.A.3.a. Comparison of ELA Scores of Low SES Visual Arts and No Visual Arts Students**

An independent-samples  $t$  test was conducted to compare ELA scores of low SES students enrolled in visual arts courses with those of students not enrolled in visual arts courses. There were 2,105 low SES visual arts students and 17,929 low SES no visual arts students. Levene's test was used to test the assumption of homogeneity of variance. Thus the assumption for the equality of variances was violated and the separate variance calculation was used to test the difference between groups. The difference between the test scores of visual arts ( $M = 306.58$ ,  $SD = 41.53$ ) and no visual arts ( $M = 311.16$ ,  $SD = 37.45$ );  $t(2,522) = 4.84$ ,  $p < .001$  was significant beyond .01 ( $p < .01$ ) (see Table 14). These results revealed a significant difference such that students not in visual arts had higher mean scores.

### **II.A.4.a. Comparison of ELA Scores of Black Visual Arts and No Visual Arts Students**

An independent-samples  $t$  test was conducted to compare ELA scores of Black students enrolled in visual arts courses with those of students not enrolled in visual arts courses. There were 1,964 Black visual arts students and 15,130 Black no visual arts students. Levene's test was used to test the assumption of homogeneity of variance. Thus the assumption for the equality of variances was violated and the separate variance calculation was used to test the difference between groups. The difference between the scores for visual arts ( $M = 305.68$ ,  $SD = 41.98$ ) and no visual arts ( $M = 309.27$ ,  $SD = 36.96$ );  $t(2,375) = 3.61$ ,  $p < .001$  was significant beyond .01 ( $p < .01$ ) (see Table 14). These results revealed a significant difference such that students not in visual arts had higher mean scores.

### **II.A.5.a. Comparison of ELA Scores of White Visual Arts and No Visual Arts Students**

An independent-samples  $t$  test was conducted to compare ELA scores of White students enrolled in visual arts courses with those of students not enrolled in visual arts courses. There

were 1,696 White visual arts students and 16,673 White no visual arts students. The difference between the scores for visual arts ( $M = 331.75$ ,  $SD = 31.33$ ) and no visual arts ( $M = 332.43$ ,  $SD = 31.7$ );  $t(18,367) = .84$ ,  $p = .402$  was not significant beyond .05 ( $p < .05$ ) (see Table 15). These results revealed no statistical significant difference.

#### **II.A.1.b. Comparison of ELA Scores of Visual Arts and No Arts Students**

An independent-samples  $t$  test was conducted to compare ELA scores of students enrolled in visual arts courses with those of students not enrolled in either visual arts or music courses. There were 3,845 visual arts students and 26,375 no arts students. Levene's test was used to test the assumption of homogeneity of variance. Thus the assumption for the equality of variances was violated and the separate variance calculation was used to test the difference between groups. The difference between the scores of visual arts ( $M = 317.81$ ,  $SD = 40.53$ ) and no arts ( $M = 319.19$ ,  $SD = 37.09$ );  $t(4,829) = 1.99$ ,  $p = .047$  was significant beyond .05 ( $p < .05$ ) (see Table 15). These results revealed a significant difference such that students not in visual arts had higher mean scores.

#### **II.A.2.b. Comparison of ELA Scores of Middle and High SES Visual Arts and No Arts Students**

An independent-samples  $t$  test was conducted to compare ELA scores of middle and high SES students enrolled in visual arts courses with those of students not enrolled in either visual arts or music courses. There were 1,442 middle and high SES visual arts students and 9,425 middle and high SES no arts students. The difference between the scores for visual arts ( $M = 332.11$ ,  $SD = 35.18$ ) and no arts ( $M = 332.65$ ,  $SD = 35.12$ ) conditions;  $t(10,865) = .6$ ,  $p = .566$  was not significant beyond .05 ( $p < .05$ ) (see Table 15). These results revealed no statistical significant difference.

Table 15  
Differences Between Visual Arts and No Arts Students on ELA Scores

Enrollment	(n)	percentage	<i>M</i> ( <i>SD</i> )	<i>t</i>	df	<i>p</i> <sup>a</sup>
<u>All Students</u>						
Visual arts	3,845	10	317.81 (40.525)	-1.991	4829.435	.047
No arts	26,375	71	319.19 (37.086)			
<u>High/Middle SES</u>						
Visual arts	1,442	4	332.11 (35.178)	-.574	10,865	.566
No arts	9,425	25	332.65 (33.124)			
<u>Low SES</u>						
Visual arts	2,105	6	306.58 (41.532)	-3.416	2,620.263	.001
No arts	14,731	39	309.84 (37.589)			
<u>Black</u>						
Visual arts	1,964	5	305.68 (41.979)	-1.702	2,483.462	.089
No arts	12,012	33	307.39 (36.888)			
<u>White</u>						
Visual arts	1,696	5	331.75 (31.329)	1.643	14,745	.100
No arts	13,051	35	330.40 (32.016)			

<sup>a</sup>Two-tailed.

### II.A.3.b. Comparison of ELA Scores of Middle and High SES Visual Arts and No Arts Students

An independent-samples *t* test was conducted to compare ELA scores of low SES students enrolled in visual arts courses with those of students not enrolled in either visual arts or music courses. There were 2,105 low SES visual arts students and 14,731 low SES no arts students. The difference between the scores for visual arts ( $M = 306.58$ ,  $SD = 41.53$ ) and no arts ( $M = 309.84$ ,  $SD = 37.59$ ) conditions;  $t(2,620) = 3.42$ ,  $p < .001$  was significant beyond .01 ( $p < .01$ ) (see Table 15). These results revealed significant difference such that students not in visual arts had higher mean scores.

#### **II.A.4.b. Comparison of ELA Scores of Black Visual Arts and No Arts Students**

An independent-samples *t* test was conducted to compare ELA scores of Black students enrolled in visual arts courses with those of students not enrolled in either visual arts or music courses. There were 1,964 Black visual arts students and 12,012 Black no arts students. Levene's test was used to test the assumption of homogeneity of variance. Thus the assumption for the equality of variances was violated and the separate variance calculation was used to test the difference between groups. The difference between the scores for visual arts ( $M = 305.68$ ,  $SD = 41.98$ ) and no arts ( $M = 307.39$ ,  $SD = 36.89$ );  $t(2,483) = 1.70$ ,  $p = .089$  was not significant beyond .05 ( $p < .05$ ) (see Table 15). These results revealed no statistical significant difference.

#### **II.A.5.b. Comparison of ELA Scores of White Visual Arts and No Arts Students**

An independent-samples *t* test was conducted to compare ELA scores of White students enrolled in visual arts courses with those of students not enrolled in either visual arts or music courses. There were 1,696 White visual arts students and 13,051 White no arts students. The difference between the scores for visual arts ( $M = 331.75$ ,  $SD = 31.33$ ) and no arts ( $M = 330.4$ ,  $SD = 32.02$ );  $t(14,745) = 1.64$ ,  $p = .1$  was not significant beyond .05 ( $p < .05$ ) (see Table 15). These results revealed no statistical significant difference.

#### **II.B.1.a. Comparison of Math Scores of Visual Arts and No Visual Arts Students**

An independent-samples *t* test was conducted to compare math scores of students enrolled in visual arts courses with those of students not enrolled in visual arts courses. There were 3,845 visual arts students and 33,377 no visual arts students. The difference between the scores of visual arts ( $M = 326.55$ ,  $SD = 35.5$ ) and no visual arts ( $M = 328.42$ ,  $SD = 33.99$ );  $t(37,220) = 3.2$ ,  $p < .001$  was significant beyond .01 ( $p < .01$ ) (see Table 16). These results revealed a significant difference such that students not in visual arts had higher mean scores.

Table 16  
Differences Between Visual Arts and No Visual Arts Students on Math Scores

Enrollment	(n)	percentage	<i>M</i> ( <i>SD</i> )	<i>t</i>	df	<i>p</i> <sup>a</sup>
<u>All Students</u>						
Visual arts	3,845	10	326.55 (35.503)	-3.212	37,220	.001
No visual arts	33,377	90	328.42 (33.987)			
<u>High/Middle SES</u>						
Visual arts	1,442	4	339.87 (31.630)	-1.146	14,043	.252
No visual arts	12,603	34	340.93 (33.595)			
<u>Low SES</u>						
Visual arts	2,105	6	316.36 (35.582)	-3.847	20,032	.001
No visual arts	17,929	48	319.24 (32.068)			
<u>Black</u>						
Visual arts	1,964	5	314.19 (34.956)	-1.629	2,388.077	.103
No visual arts	15,130	41	315.54 (31.249)			
<u>White</u>						
Visual arts	1,696	5	340.30 (29.219)	.489	2,116.596	.625
No visual arts	16,673	44	339.94 (31.505)			

<sup>a</sup>Two-tailed.

### II.B.2.a. Comparison of Math Scores of Middle and High SES Visual Arts and No Visual Arts Students

An independent-samples *t* test was conducted to compare math scores of middle and high SES students enrolled in visual arts courses with those of students not enrolled in visual arts courses. There were 1,442 middle and high SES visual arts students and 12,603 middle and high SES no visual arts students. The difference between the scores for visual arts ( $M = 339.87$ ,  $SD = 31.63$ ) and no visual arts ( $M = 340.93$ ,  $SD = 33.6$ );  $t(14,043) = 1.15$ ,  $p = .252$  was not significant beyond .05 ( $p < .05$ ) (see Table 16). These results revealed no statistical difference.

### II.B.3.a. Comparison of Math Scores of Low SES Visual Arts and No Visual Arts Students

An independent-samples *t* test was conducted to compare math scores of low SES students enrolled in visual arts courses with those of students not enrolled in visual arts courses.

There were 2,105 low SES visual arts and 17,929 low SES no visual arts. The difference between the test scores of visual arts ( $M = 316.36$ ,  $SD = 35.58$ ) and no visual arts ( $M = 319.24$ ,  $SD = 32.07$ );  $t(20,032) = 3.85$ ,  $p < .001$  was significant beyond .01 ( $p < .01$ ) (see Table 16). These results revealed a significant difference such that students not in visual arts had higher mean scores.

#### **II.B.4.a. Comparison of Math Scores of Black Visual Arts and No Visual Arts Students**

An independent-samples  $t$  test was conducted to compare math scores of Black students enrolled in visual arts courses with those of students not enrolled in visual arts courses. There were 1,964 Black visual arts students and 15,130 Black no visual arts students. Levene's test was used to test the assumption of homogeneity of variance. Thus the assumption for the equality of variances was violated and the separate variance calculation was used to test the difference between groups. The difference between the scores for visual arts ( $M = 314.19$ ,  $SD = 34.96$ ) and no visual arts ( $M = 315.54$ ,  $SD = 31.25$ );  $t(2,388) = 1.6$ ,  $p = .103$  was not significant beyond .05 ( $p < .05$ ) (see Table 16). These results revealed no statistical difference.

#### **II.B.5.a. Comparison of Math Scores of White Visual Arts and No Visual Arts Students**

An independent-samples  $t$  test was conducted to compare math scores of White students enrolled in visual arts courses with those of students not enrolled in visual arts courses. There were 1,696 White visual arts students and 16,673 White no visual arts students. Levene's test was used to test the assumption of homogeneity of variance. Thus the assumption for the equality of variances was violated and the separate variance calculation was used to test the difference between groups. The difference between the scores for visual arts ( $M = 340.3$ ,  $SD = 29.22$ ) and no visual arts ( $M = 339.94$ ,  $SD = 31.51$ );  $t(2,117) = .49$ ,  $p = .625$  was not significant beyond .05 ( $p < .05$ ) (see Table 17). These results revealed no statistical difference.

### II.B.1.b. Comparison of Math Scores of Visual Arts and No Arts Students

An independent-samples  $t$  test was conducted to compare math scores of students enrolled in visual arts courses with those of students not enrolled in either visual arts or music courses. There were 3,845 visual arts students and 26,375 no arts students. The difference between the scores of visual arts ( $M = 326.55$ ,  $SD = 35.5$ ) and no arts ( $M = 326.71$ ,  $SD = 33.62$ );  $t(30,218) = .3$ ,  $p = .79$  was not significant beyond .05 ( $p < .05$ ) (see Table 17). These results revealed no statistical significant difference.

Table 17  
Differences Between Visual Arts and No Arts Students on Math Scores

Enrollment	(n)	percentage	$M(SD)$	t	df	$p^a$
<u>All Students</u>						
Visual arts	3,845	10	326.55 (35.503)	-.267	30,218	.790
No arts	26,375	71	326.71 (33.624)			
<u>High/Middle SES</u>						
Visual arts	1,442	4	339.87 (31.630)	.817	10,865	.414
No arts	9,425	25	339.10 (33.322)			
<u>Low SES</u>						
Visual arts	2,105	6	316.36 (35.582)	-2.536	16,834	.011
No arts	14,731	39	318.28 (31.963)			
<u>Black</u>						
Visual arts	1,964	5	314.19 (34.956)	.019	2501.196	.985
No arts	12,012	32	314.17 (31.212)			
<u>White</u>						
Visual arts	1,696	5	340.30 (29.219)	2.771	14,745	.006
No arts	13,051	35	338.10 (31.003)			

<sup>a</sup>Two-tailed.

### II.B.2.b. Comparison of Math Scores of Middle and High SES Visual Arts and No Arts Students

An independent-samples  $t$  test was conducted to compare math scores of middle and high SES students enrolled in visual arts courses with those of students not enrolled in either visual arts or music courses. There were 1,442 middle and high SES visual arts students and 9,425

middle and high SES no arts students. The difference between the scores for visual arts ( $M = 339.87$ ,  $SD = 31.63$ ) and no visual arts ( $M = 339.1$ ,  $SD = 33.32$ );  $t(10,865) = .82$ ,  $p = .414$  was not significant beyond .05 ( $p < .05$ ) (see Table 17). These results revealed no statistical significant difference.

#### **II.B.3.b. Comparison of Math Scores of Low SES Visual Arts and No Arts Students**

An independent-samples  $t$  test was conducted to compare math scores of low SES students enrolled in visual arts courses with those of students not enrolled in either visual arts or music courses. There were 2,105 low SES visual arts and 14,731 low SES no arts. The difference between the test scores of visual arts ( $M = 316.36$ ,  $SD = 35.58$ ) and no arts ( $M = 318.28$ ,  $SD = 31.96$ );  $t(16,834) = 2.54$ ,  $p = .011$  was significant beyond .05 ( $p < .05$ ) (see Table 17). These results revealed a significant difference such that students not in visual arts had higher mean scores.

#### **II.B.4.b. Comparison of Math Scores of Black Visual Arts and No Arts Students**

An independent-samples  $t$  test was conducted to compare math scores of Black students enrolled in visual arts courses with those of students not enrolled in either visual arts or music courses. There were 1,964 Black visual arts students and 12,012 Black no arts students. Levene's test was used to test the assumption of homogeneity of variance. Thus the assumption for the equality of variances was violated and the separate variance calculation was used to test the difference between groups. The difference between the scores for visual arts ( $M = 314.19$ ,  $SD = 34.96$ ) and no arts ( $M = 314.17$ ,  $SD = 31.21$ );  $t(2,501) = .02$ ,  $p = .985$  was not significant beyond .05 ( $p < .05$ ) (see Table 17). These results revealed no statistical significant difference.

#### **II.B.5.b. Comparison of Math Scores of White Visual Arts and No Arts Students**

An independent-samples  $t$  test was conducted to compare math scores of White students enrolled in visual arts courses with those of students not enrolled in either visual arts or music



courses. There were 1,696 White visual arts students and 13,051 White no arts students. The difference between the scores for visual arts ( $M = 340.3$ ,  $SD = 29.22$ ) and no arts ( $M = 338.1$ ,  $SD = 31$ );  $t(14,745) = 2.8$ ,  $p = .006$  was significant beyond .01 ( $p < .01$ ) (see Table 17). These results revealed a significant difference such that students in visual arts had higher mean scores.

### **Summary of Test Scores for Visual Arts and No Arts Students**

The results of the ANOVAs occasionally revealed significant positive relationship to ELA and math scores for students not enrolled in visual arts courses. The total subpopulation of students enrolled in no arts courses significantly outscored visual arts students in ELA ( $t = 1.991$ ,  $p < .05$ ), but not in math ( $t = .267$ ,  $p < .790$ ). Middle and high SES no arts students did not have significantly higher ELA scores ( $t = .574$ ,  $p < .566$ ) and visual arts students did not have significantly higher math scores ( $t = .817$ ,  $p < .414$ ) than the no arts students. Low SES no arts students had significantly higher ELA ( $t = 3.416$ ,  $p < .001$ ) and math ( $t = 2.536$ ,  $p < .05$ ) scores than students with visual arts. Black no arts students did not have significantly higher ELA scores ( $t = 1.702$ ,  $p < .089$ ) and visual arts students did not have significantly higher math scores ( $t = .019$ ,  $p < .985$ ). White visual arts students did not have significantly higher ELA scores ( $t = 1.643$ ,  $p < .100$ ); however, they did have significantly higher math scores ( $t = 2.771$ ,  $p < .01$ ) than students with no arts. Only this final null hypothesis was rejected after the music students were removed from the no arts group. The removal of music students from the no visual arts group resulted in the mean score being lowered by approximately two points in each independent-samples  $t$  test. In summary, these results indicated a strong positive relationship between visual arts enrollment and higher scores in math for White students.

### **III. Dual Arts Course Enrollment as a Predictor of Success in English and Math**

The ultimate ten research questions (III.A.1-5.; III.B.1-5.) examine the differences between dual (music and visual arts) and no dual students on the LEAP English language arts

(ELA) scores and mathematics (math) scores. There were a total of 37,222 records involved in this study. They indicated there were 609 (2%) students who had dual study of arts and 36,613 (98%) whose records did not indicate dual study; 127 (.3%) middle and high SES dual students and 13,918 (37%) middle and high SES no dual students; 438 (1%) low SES dual students and 19,596 (53%) low SES no dual students; 466 (1%) Black dual students and 16,628 (46%) Black no dual students; and 105 (.3%) White dual students and 18,264 (49%) White no dual students.

Because of the potential influence of the music students in the results of the initial tests, additional tests were conducted on the data. In the first tests (I.) the results of the music students were significant, strong, and positive. In the final tests, students that had only music or only visual arts were included with the no dual arts students. The additional step was to remove the influence of the music-only and visual arts-only students from the equation. Tests follow the initial condition. The questions labeled (a.) have the music-only and visual arts-only students included; the questions labeled (b.) have had those students removed.

### **III.A.1.a. Comparison of ELA Scores of Dual Arts and No Dual Arts Students**

An independent-samples  $t$  test was conducted to compare ELA test scores of students enrolled in dual arts courses with those of students not enrolled in dual arts courses. There were 609 dual arts students and 36,613 no dual arts students. Levene's test was used to test the assumption of homogeneity of variance. Thus the assumption for the equality of variances was violated and the separate variance calculation was used to test the difference between groups. The difference between the scores of dual arts ( $M = 307.86$ ,  $SD = 47.05$ ) and no dual arts ( $M = 321.11$ ,  $SD = 37.11$ );  $t(621) = 6.91$ ,  $p < .001$  was significant beyond .01 ( $p < .01$ ) (see Table 18). These results revealed a significant difference such that students not in dual arts had higher mean scores.

Table 18  
Differences Between Dual Arts and No Dual Arts Students on ELA Scores

Enrollment	( <i>n</i> )	percentage	<i>M</i> ( <i>SD</i> )	<i>t</i>	df	<i>p</i> <sup>a</sup>
<u>All Students</u>						
Dual arts	609	2	307.86 (47.050)	-6.910	620.644	.001
No dual arts	36,613	98	321.11 (37.105)			
<u>High/Middle SES</u>						
Dual arts	127	0	332.91 (41.255)	-.432	127.469	.667
No dual arts	13,918	37	334.50 (32.925)			
<u>Low SES</u>						
Dual arts	438	1	298.50 (45.715)	-5.659	450.378	.001
No dual arts	19,596	53	310.95 (37.691)			
<u>Black</u>						
Dual arts	466	1	300.91 (43.994)	-3.970	483.993	.001
No dual arts	16,628	46	309.08 (37.372)			
<u>White</u>						
Dual arts	105	0	342.83 (31.064)	3.396	18,367	.001
No dual arts	18,264	49	332.30 (31.668)			

<sup>a</sup>Two-tailed.

### III.A.2.a. Comparison of ELA Scores of Middle and High SES Dual Arts and No Dual Arts Students

An independent-samples *t* test was conducted to compare ELA scores of middle and high SES students enrolled in dual arts courses with those of students not enrolled in dual arts courses. There were 127 middle and high SES dual arts students and 13,918 middle and high SES no dual arts students. Levene's test was used to test the assumption of homogeneity of variance. Thus the assumption for the equality of variances was violated and the separate variance calculation was used to test the difference between groups. The difference between the scores for dual arts ( $M = 332.91$ ,  $SD = 41.26$ ) and no dual arts ( $M = 334.5$ ,  $SD = 32.93$ ) conditions;  $t(127) = .43$ ,  $p = .667$  was not significant beyond .05 ( $p < .05$ ) (see Table 18). These results revealed no statistical significant difference.

### **III.A.3.a. Comparison of ELA Scores of Low SES Dual Arts and No Dual Arts Students**

An independent-samples  $t$  test was conducted to compare ELA scores of low SES students enrolled in dual arts courses with those of students not enrolled in dual arts courses. There were 438 low SES dual arts students and 19,596 low SES no dual arts students. Levene's test was used to test the assumption of homogeneity of variance. Thus the assumption for the equality of variances was violated and the separate variance calculation was used to test the difference between groups. The difference between the test scores of dual arts ( $M = 298.5$ ,  $SD = 45.72$ ) and no dual arts ( $M = 310.95$ ,  $SD = 37.69$ );  $t(450) = 5.7$ ,  $p < .001$  was significant beyond  $.01$  ( $p < .01$ ) (see Table 18). These results revealed a significant difference such that students not in dual arts had higher mean scores.

### **III.A.4.a. Comparison of ELA Scores of Black Dual Arts and No Dual Arts Students**

An independent-samples  $t$  test was conducted to compare ELA scores of Black students enrolled in dual arts courses with those of students not enrolled in dual arts courses. There were 466 Black dual arts students and 16,628 Black no dual arts students. Levene's test was used to test the assumption of homogeneity of variance. Thus the assumption for the equality of variances was violated and the separate variance calculation was used to test the difference between groups. The difference between the scores for dual arts ( $M = 300.91$ ,  $SD = 43.99$ ) and no dual arts ( $M = 309.08$ ,  $SD = 37.37$ );  $t(484) = 3.97$ ,  $p < .001$  was significant beyond  $.01$  ( $p < .01$ ) (see Table 18). These results revealed a significant difference that students not in dual arts had higher mean scores.

### **III.A.5.a. Comparison of ELA Scores of White Dual Arts and No Dual Arts Students**

An independent-samples  $t$  test was conducted to compare ELA scores of White students enrolled in dual arts courses with those of students not enrolled in dual arts courses. There were 105 White dual arts students and 18,264 White no dual arts students. The difference between the

scores for dual arts ( $M = 342.83$ ,  $SD = 31.06$ ) and no dual arts ( $M = 332.3$ ,  $SD = 31.67$ );  $t(18,367) = 3.4$ ,  $p < .001$  was significant beyond .01 ( $p < .01$ ) (see Table 18). These results revealed a significant difference such that students in dual arts had higher mean scores.

### **III.A.1.b Comparison of ELA Scores of Dual Arts and No Arts Students**

An independent-samples  $t$  test was conducted to compare ELA scores of students enrolled in dual arts courses with those of students not enrolled in either music or visual arts courses. There were 609 dual arts students and 26,375 no arts students. Levene's test was used to test the assumption of homogeneity of variance. Thus the assumption for the equality of variances was violated and the separate variance calculation was used to test the difference between groups. The difference between the scores of dual arts ( $M = 307.86$ ,  $SD = 47.05$ ) and no arts ( $M = 319.19$ ,  $SD = 37.09$ );  $t(626) = 5.9$ ,  $p < .001$  was significant beyond .01 ( $p < .01$ ) (see Table 19). These results revealed a significant difference such that students not in dual arts had higher mean scores.

### **III.A.2.b. Comparison of ELA Scores of Middle and High SES Dual Arts and No Arts Students**

An independent-samples  $t$  test was conducted to compare ELA scores of middle and high SES students enrolled in dual arts courses with those of students not enrolled in either music or visual arts courses. There were 127 middle and high SES dual arts students and 9,425 middle and high SES no arts students. Levene's test was used to test the assumption of homogeneity of variance. Thus the assumption for the equality of variances was violated and the separate variance calculation was used to test the difference between groups. The difference between the scores for dual arts ( $M = 332.91$ ,  $SD = 41.26$ ) and no arts ( $M = 332.65$ ,  $SD = 33.12$ );  $t(128) = .07$ ,  $p = .943$  was not significant beyond .05 ( $p < .05$ ) (see Table 19). These results revealed no statistical significant difference.

Table 19  
Differences Between Dual Arts and No Arts Students on ELA Scores

Enrollment	( <i>n</i> )	percentage	<i>M</i> ( <i>SD</i> )	<i>t</i>	df	<i>p</i> <sup>a</sup>
<u>All Students</u>						
Dual arts	609	2	307.86 (47.050)	-5.897	625.567	.001
No arts	26,375	71	319.19 (37.086)			
<u>High/Middle SES</u>						
Dual arts	127	0	332.91 (41.255)	.072	128.198	.943
No arts	9,425	25	332.65 (33.124)			
<u>Low SES</u>						
Dual arts	438	1	298.50 (45.715)	-5.143	454.741	.001
No arts	14,731	40	309.84 (37.589)			
<u>Black</u>						
Dual arts	466	2	300.91 (43.994)	-3.140	490.697	.002
No arts	12,012	32	307.39 (36.888)			
<u>White</u>						
Dual arts	105	0	342.83 (31.064)	3.964	13,154	.001
No arts	13,051	35	330.40 (32.016)			

<sup>a</sup>Two-tailed.

### III.A.3.b. Comparison of ELA Scores of Low SES Dual Arts and No Arts Students

An independent-samples *t* test was conducted to compare ELA scores of low SES students enrolled in dual arts courses with those of students not enrolled in either music or visual arts courses. There were 438 low SES dual arts students and 14,731 low SES no arts students. Levene's test was used to test the assumption of homogeneity of variance. Thus the assumption for the equality of variances was violated and the separate variance calculation was used to test the difference between groups. The difference between the test scores of dual arts ( $M = 298.5$ ,  $SD = 45.72$ ) and no arts ( $M = 309.84$ ,  $SD = 37.59$ );  $t(455) = 5.14$ ,  $p < .001$  was significant beyond .01 ( $p < .01$ ) (see Table 19). These results revealed a significant difference such that students not in dual arts had higher mean scores.

#### **III.A.4.b. Comparison of ELA Scores of Black Dual Arts and No Arts Students**

An independent-samples  $t$  test was conducted to compare ELA scores of Black students enrolled in dual arts courses with those of students not enrolled in either music or visual arts courses. There were 466 Black dual arts students and 12,012 Black no arts students. Levene's test was used to test the assumption of homogeneity of variance. Thus the assumption for the equality of variances was violated and the separate variance calculation was used to test the difference between groups. The difference between the scores for dual arts ( $M = 300.91$ ,  $SD = 43.99$ ) and no arts ( $M = 307.39$ ,  $SD = 36.89$ );  $t(491) = 3.14$ ,  $p = .002$  was significant beyond .01 ( $p < .01$ ) (see Table 19). These results revealed a significant difference such that students not in dual arts had higher mean scores.

#### **III.A.5.b. Comparison of ELA Scores of White Dual Arts and No Arts Students**

An independent-samples  $t$  test was conducted to compare ELA scores of White students enrolled in dual arts courses with those of students not enrolled in either music or visual arts courses. There were 105 White dual arts students and 13,051 White no arts students. The difference between the scores for dual arts ( $M = 342.83$ ,  $SD = 31.06$ ) and no arts ( $M = 330.4$ ,  $SD = 32.02$ );  $t(13,154) = 4$ ,  $p < .001$  was significant beyond .01 ( $p < .01$ ) (see Table 19). These results revealed a significant difference such that students in dual arts had higher mean scores.

#### **III.B.1.a. Comparison of Math Scores of Dual Arts and No Dual Arts Students**

An independent-samples  $t$  test was conducted to compare math scores of students enrolled in dual arts courses with those of students not enrolled in dual arts courses. There were 609 dual arts students and 36,613 no dual arts students. Levene's test was used to test the assumption of homogeneity of variance. Thus the assumption for the equality of variances was violated and the separate variance calculation was used to test the difference between groups. The difference between the scores of dual arts ( $M = 318.12$ ,  $SD = 40.33$ ) and no dual arts ( $M =$

328.4,  $SD = 34.01$ );  $t(622) = 6.25$ ,  $p < .001$  was significant beyond .01 ( $p < .01$ ) (see Table 20).

These results revealed a significant difference such that students not in dual arts had higher mean scores.

Table 20

Differences Between Dual Arts and No Dual Arts Students on Math Scores

Enrollment	(n)	percentage	$M(SD)$	t	df	$p^a$
<u>All Students</u>						
Dual arts	609	2	318.12 (40.328)	-6.253	622.472	.001
No dual arts	36,613	98	328.40 (34.014)			
<u>High/Middle SES</u>						
Dual arts	127	0	335.91 (33.202)	-1.666	14,043	.096
No dual arts	13,918	37	340.87 (33.398)			
<u>Low SES</u>						
Dual arts	438	1	310.95 (40.670)	-4.173	449.359	.001
No dual arts	19,596	53	319.11 (32.237)			
<u>Black</u>						
Dual arts	466	1	311.10 (38.150)	-2.467	482.925	.014
No dual arts	16,628	46	315.50 (31.492)			
<u>White</u>						
Dual arts	105	0	349.53 (27.936)	3.141	18,367	.002
No dual arts	18,264	49	339.91 (31.311)			

<sup>a</sup>Two-tailed.

### III.B.2.a. Comparison of Math Scores of Middle and High SES Dual Arts and No Dual Arts Students

An independent-samples  $t$  test was conducted to compare math scores of middle and high SES students enrolled in dual arts courses with those of students not enrolled in dual arts courses. There were 127 middle and high SES dual arts students and 13,918 middle and high SES no dual arts students. The difference between the scores for dual arts ( $M = 335.91$ ,  $SD = 33.2$ ) and no dual arts ( $M = 340.87$ ,  $SD = 33.4$ );  $t(14,043) = 1.67$ ,  $p = .1$  was not significant beyond .05 ( $p < .05$ ) (see Table 20). These results revealed no statistical significant difference.



### **III.B.3.a. Comparison of Math Scores of Low SES Dual Arts and No Dual Arts Students**

An independent-samples  $t$  test was conducted to compare math scores of low SES students enrolled in dual arts courses with those of students not enrolled in dual arts courses. There were 438 low SES dual arts and 19,596 low SES no dual arts. Levene's test was used to test the assumption of homogeneity of variance. Thus the assumption for the equality of variances was violated and the separate variance calculation was used to test the difference between groups. The difference between the test scores of dual arts ( $M = 310.95$ ,  $SD = 40.67$ ) and no dual arts ( $M = 319.11$ ,  $SD = 32.24$ );  $t(449) = 4.17$ ,  $p < .001$  was significant beyond .01 ( $p < .01$ ) (see Table 20). These results revealed a significant difference such that students not in dual arts had higher mean scores.

### **III.B.4.a. Comparison of Math Scores of Black Dual Arts and No Dual Arts Students**

An independent-samples  $t$  test was conducted to compare math scores of Black students enrolled in dual arts courses with those of students not enrolled in dual arts courses. There were 466 Black dual arts students and 16,628 Black no dual arts students. Levene's test was used to test the assumption of homogeneity of variance. Thus the assumption for the equality of variances was violated and the separate variance calculation was used to test the difference between groups. The difference between the scores for dual arts ( $M = 311.1$ ,  $SD = 38.15$ ) and no dual arts ( $M = 315.5$ ,  $SD = 31.49$ );  $t(483) = 2.47$ ,  $p = .014$  was significant beyond .05 ( $p < .05$ ) (see Table 20). These results revealed a significant difference such that students not in dual arts alone had higher mean scores.

### **III.B.5.a. Comparison of Math Scores of White Dual Arts and No Dual Arts Students**

An independent-samples  $t$  test was conducted to compare math scores of White students enrolled in dual arts courses with those of students not enrolled in dual arts courses. There were

105 White dual arts students and 18,264 White no dual arts students. The difference between the scores for dual arts ( $M = 349.53$ ,  $SD = 27.94$ ) and no dual arts ( $M = 339.91$ ,  $SD = 31.31$ );  $t(18,367) = 3.14$ ,  $p = .002$  was significant beyond .01 ( $p < .01$ ) (see Table 20). These results revealed a significant difference such that students in dual arts had higher mean scores.

### **III.B.1.b. Comparison of Math Scores of Dual Arts and No Arts Students**

An independent-samples  $t$  test was conducted to compare math scores of students enrolled in dual arts courses with those of students not enrolled in either music or visual arts courses. There were 609 dual arts students and 26,375 no arts students. Levene's test was used to test the assumption of homogeneity of variance. Thus the assumption for the equality of variances was violated and the separate variance calculation was used to test the difference between groups. The difference between the scores of dual arts ( $M = 318.12$ ,  $SD = 40.33$ ) and no arts ( $M = 326.71$ ,  $SD = 33.62$ );  $t(628) = 5.21$ ,  $p < .001$  was significant beyond .01 ( $p < .01$ ) (see Table 21). These results revealed a significant difference such that students in dual arts had higher mean scores.

### **III.B.2.b. Comparison of Math Scores of Middle and High SES Dual Arts and No Arts Students**

An independent-samples  $t$  test was conducted to compare math scores of middle and high SES students enrolled in dual arts courses with those of students not enrolled in either music or visual arts courses. There were 127 middle and high SES dual arts students and 9,425 middle and high SES no arts students. The difference between the scores for dual arts ( $M = 335.91$ ,  $SD = 33.2$ ) and no arts ( $M = 339.1$ ,  $SD = 33.32$ );  $t(9,550) = 1.07$ ,  $p = .28$ , was not significant beyond .05 ( $p < .05$ ) (see Table 21). These results revealed no statistical significant difference.

### **III.B.3.b. Comparison of Math Scores of Low SES Dual Arts and No Arts Students**

An independent-samples  $t$  test was conducted to compare math scores of low SES students enrolled in dual arts courses with those of students not enrolled in either music or visual

arts courses. There were 438 low SES dual arts and 14,731 low SES no arts. Levene's test was used to test the assumption of homogeneity of variance. Thus the assumption for the equality of variances was violated and the separate variance calculation was used to test the difference between groups. The difference between the test scores of dual arts ( $M = 310.95$ ,  $SD = 40.67$ ) and no arts ( $M = 318.28$ ,  $SD = 31.96$ );  $t(453) = 3.74$ ,  $p < .001$  was significant beyond .01 ( $p < .01$ ) (see Table 21). These results revealed a significant difference such that students not in dual arts had higher mean scores.

Table 21  
Differences Between Dual Arts and No Arts Students on Math Scores

Enrollment	(n)	percentage	$M(SD)$	t	df	$p^a$
<u>All Students</u>						
Dual arts	609	2	318.12 (40.328)	-5.216	627.671	.001
No arts	26,375	71	326.71 (33.624)			
<u>High/Middle SES</u>						
Dual arts	127	0	335.91 (33.202)	-1.074	9,550	.283
No arts	9,425	25	339.10 (33.322)			
<u>Low SES</u>						
Dual arts	438	1	310.95 (40.670)	-3.737	453.194	.001
No arts	14,731	40	318.28 (31.963)			
<u>Black</u>						
Dual arts	466	1	311.10 (38.150)	-1.715	489.451	.087
No arts	12,012	32	314.17 (31.212)			
<u>White</u>						
Dual arts	105	0	349.53 (27.936)	3.767	13,154	.001
No arts	13,051	35	338.10 (31.003)			

<sup>a</sup>Two-tailed.

### III.B.4.b. Comparison of Math Scores of Black Dual Arts and No Arts Students

An independent-samples  $t$  test was conducted to compare math scores of Black students enrolled in dual arts courses with those of students not enrolled in either music or visual arts courses. There were 466 Black dual arts students and 12,012 Black no arts students. Levene's

test was used to test the assumption of homogeneity of variance. Thus the assumption for the equality of variances was violated and the separate variance calculation was used to test the difference between groups. The difference between the scores for dual arts ( $M = 311.1$ ,  $SD = 38.15$ ) and no dual arts ( $M = 314.17$ ,  $SD = 31.21$ );  $t(489) = 1.72$ ,  $p = .087$  was not significant beyond .05 ( $p < .05$ ) (see Table 21). These results revealed no statistical significant difference.

### **III.B.5.b. Comparison of Math Scores of White Dual Arts and No Arts Students**

An independent-samples  $t$  test was conducted to compare math scores of White students enrolled in dual arts courses with those of students not enrolled in either music or visual arts courses. There were 105 White dual arts students and 13,051 White no arts students. The difference between the scores for dual arts ( $M = 349.53$ ,  $SD = 27.94$ ) and no arts ( $M = 338.1$ ,  $SD = 31$ );  $t(13,154) = 3.77$ ,  $p < .001$  was significant beyond .01 ( $p < .01$ ) (see Table 21). These results revealed a significant difference such that students in dual arts had higher mean scores.

### **Summary of Test Scores for Dual Arts and No Dual Arts Students.**

The results of the ANOVAs reveal that there was a significant positive correlation to ELA and math scores for non-White students not enrolled in dual arts courses. The total subpopulation of no arts students significantly outscored students with dual arts in ELA ( $t = 5.897$ ,  $p < .001$ ) and math ( $t = 5.216$ ,  $p < .001$ ). Middle and high SES dual arts students did not have significantly higher ELA scores ( $t = .072$ ,  $p < .943$ ) and the no arts students did not have significantly higher math scores ( $t = 1.074$ ,  $p < .283$ ). Low SES no arts students had significantly higher ELA ( $t = 5.143$ ,  $p < .001$ ) and math ( $t = 3.737$ ,  $p < .001$ ) scores than dual arts students. Black no arts students had significantly higher ELA scores ( $t = 3.140$ ,  $p < .01$ ); however, they did not have significantly higher math scores ( $t = 1.715$ ,  $p < .087$ ) than dual arts students. White dual arts students had significantly higher ELA ( $t = 3.964$ ,  $p < .001$ ) and math ( $t = 3.767$ ,  $p <$

.001) scores than students with no arts. In summary, these results indicated a strong positive relationship between dual arts enrollment and higher ELA and math scores for White students.

### **Summary**

This chapter presented a summary of the analytic procedures and provided a description of the data and the population. An exploratory analysis of the data was conducted. MANOVA was performed and the results proved not significant. A series of independent-samples *t* tests were conducted to determine whether there was a relationship between arts enrollment and academic achievement as measured by ELA and Math Scale scores. There was a significant positive relationship between music enrollment and higher ELA and math scores. In visual arts, there was a significant positive relationship between visual arts enrollment and higher math scores for White students. There was a significant negative relationship between visual arts enrollment and the entire population and low SES students on ELA scores. There was also a negative relationship between visual arts enrollment and the low SES students on math scores. There was no significant relationship between enrollment in visual arts courses and middle and high SES, Black, and White students on ELA scores. In dual arts, there was a significant positive relationship between dual arts enrollment and White students' higher ELA and math scores. There was a significant negative relationship between dual arts enrollment and the entire population and low SES students on ELA and math scores. Black dual arts students also showed a negative relationship on the ELA scores. There was no significant relationship between enrollment in dual arts courses and middle and high SES students on ELA and math scores. There was also no significant relationship between Black dual arts students and no arts students on math scores. Chapter five will provide a summary of the study; discuss the significance of those findings and conclusions, and present recommendations for future research.

## CHAPTER V

### SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

#### Purpose and Objectives

The purpose of this study was to examine whether administrative exclusion of students from required instruction in music and the visual arts resulted in higher performance on English language arts (ELA) and mathematics tests. This study described the population of non-special education eighth grade students who took the LEAP tests on selected demographic characteristics and course enrollment.

The research objectives explored in this study were-

- I. music course enrollment as a predictor of success in ELA and math test scores;
- II. visual arts course enrollment as a predictor of success in ELA and math test scores;  
and
- III. music and visual arts (dual) course enrollment as a predictor of success in ELA and math test scores.

#### Methodology

A one-way multivariate analysis of variance (MANOVA) was conducted on two criterion variables: ELA scale scores and mathematics scale scores and the following predictor variables – course enrollment (music, visual arts, dual arts, and no arts), SES (low and high), and ethnicity (American Indian, Asian, Black, Hispanic, White). Separate independent *t* tests were calculated to examine each of the research objectives. Only White and Black students were represented in sufficient numbers to be included.

#### Population

The population studied was 2007-2008 eighth grade students in Louisiana public schools who were not special education students. All students in this study completed the Louisiana

Educational Assessment Program (LEAP) Test for ELA and math in the spring of 2008. No sampling occurred. This study contained 37,222 students.

## **Data**

Data were drawn from the electronic records of Louisiana eighth grade public school students. Student level data included ELA Scale Scores, Math Scale Scores, Course Enrollment, and demographics. All data that met the previously stated criteria were included.

## **Findings**

### **Objective One**

Objective one examined music enrollment as a predictor of success in ELA and math scores. Findings for objective one indicated that students who were enrolled in music scored significantly higher than students not enrolled in music. In ELA, music students had a mean score of 327.31; the no music students had a mean score of 319.24. Middle and High SES music students had a mean score of 340.69; the no music students had a mean score of 332.57. Low SES music students had a mean score of 314.97; the no music students had a mean score of 309.73. Black music students had a mean score of 314.47; the no music students had a mean score of 307.37. White music students had a mean score of 339.83; the no music students had a mean score of 330.46. These results are shown in Figure 1.

In math, music students had a mean score of 333.53; the no music students had a mean score of 326.87. Middle and High SES music students had a mean score of 345.95; the no music students had a mean score of 339.24. Low SES music students had a mean score of 322.13; the no music students had a mean score of 318.23. Black music students had a mean score of 319.54; the no music students had a mean score of 314.28. White music students had a mean score of 346.64; the no music students had a mean score of 338.27. These results are shown in Figure 2.

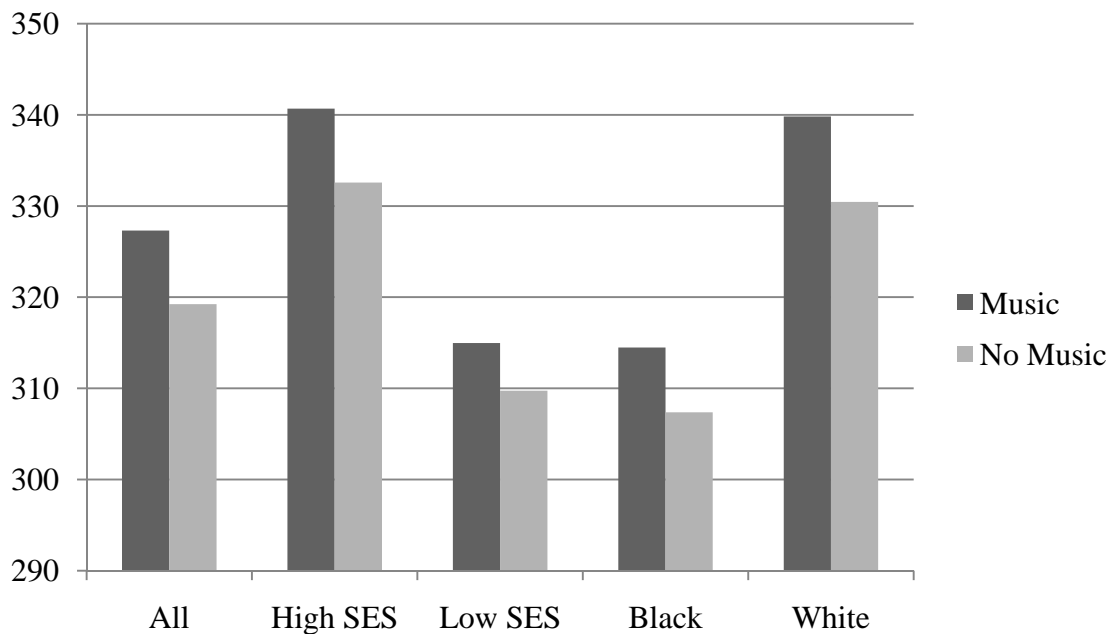


Figure 1  
 ELA Mean Score Comparisons of Music and No Music Students (LEAP Scores)  
*Note.* All differences were significant beyond  $\alpha = .001$ .

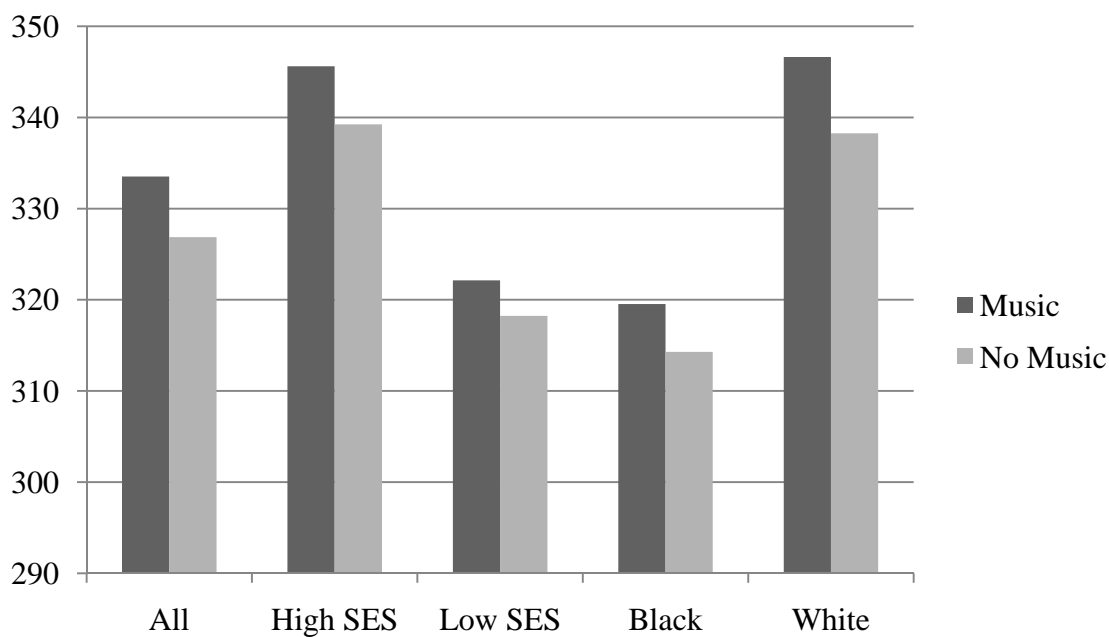


Figure 2  
 Math Mean Score Comparisons of Music and No Music Students (LEAP Scores)  
*Note.* All differences were significant beyond  $\alpha = .001$ .



## Objective Two

Objective two examined visual arts enrollment as a predictor of success in ELA and math scores. To study this objective, it was necessary to run the tests twice. The first test included music students with the no visual arts students and compared their scores to the visual arts students. However, due to the significant results found in the tests of objective one, music students likely influenced the results of the no visual arts students. The music students' influence was approximately two points. Findings for objective two were based on the tests run between visual arts students and no arts students (not enrolled in visual arts or music). Two ELA tests and two math tests indicated a significant difference. Significant differences were higher for the no arts students. Only White visual arts students had significantly higher math scores than White no arts students.

In ELA, visual arts students had a mean score of 317.81; the no arts students had a mean score of 319.19. Low SES visual arts students had a mean score of 306.58; the no arts students had a mean score of 309.84. These were the only two tests that had significant scores. The results for middle and high SES visual arts students, Black students, and white students were not significant at  $p < .05$ . These results are shown in Figure 3.

In math, there were two significant differences. One was for the test of low SES students and the other was for White students. The results for all students, middle and high SES students, and black students were not significant at  $p < .05$ . The low SES visual arts students had a mean score of 316.36; the no arts students had a mean score of 318.28. White visual arts students had a mean score of 340.3; the no arts students had a mean score of 338.1. These results are shown in Figure 4.

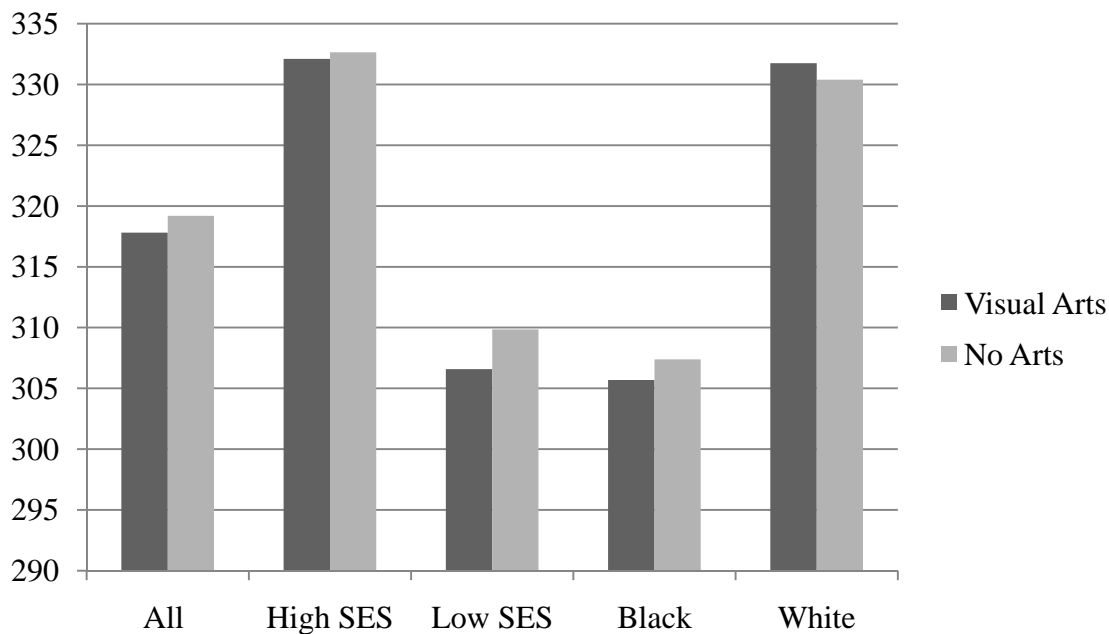


Figure 3

ELA Mean Score Comparisons of Visual Arts and No Arts Students (LEAP Scores)

*Note.* The differences for All was significant beyond  $\alpha = .05$ . The difference for Low SES was significant beyond  $\alpha = .001$ .

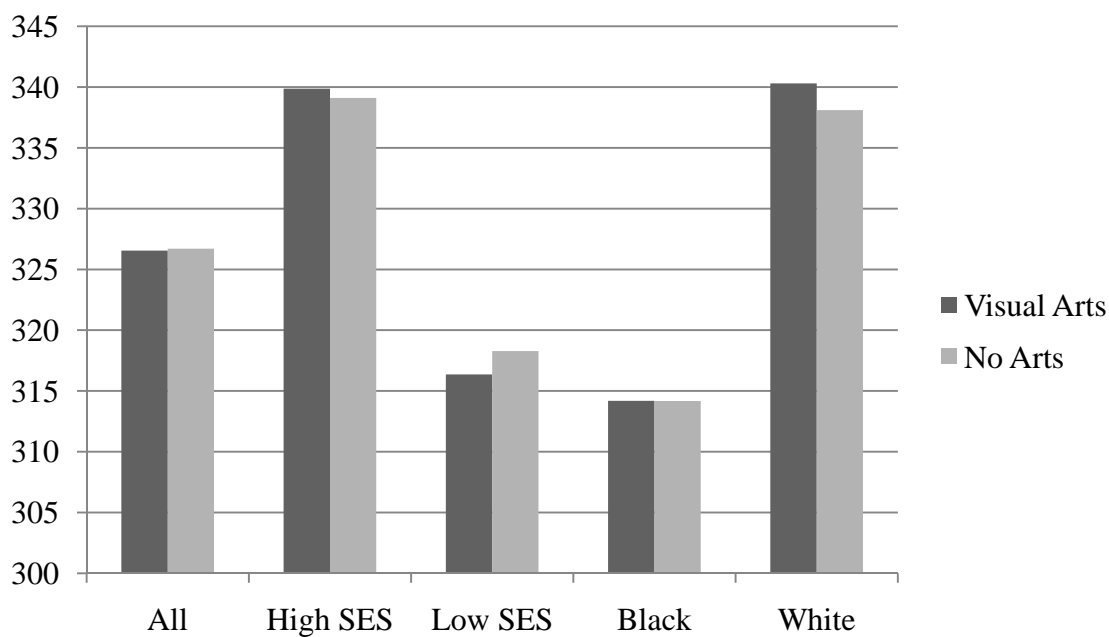


Figure 4

Math Mean Score Comparisons of Visual Arts and No Arts Students (LEAP Scores)

*Note.* The differences for Low SES was significant beyond  $\alpha = .05$ . The difference for White was significant beyond  $\alpha = .01$ .

### **Objective Three**

Objective three examined dual enrollment (music and visual arts) as a predictor of success in ELA and math scores. To study this objective, it was necessary to run the tests twice. The first test included music students and visual arts students with the no dual arts students and compared their scores to the dual arts students. However, due to the significant results found in the tests of objective one, music students likely positively influenced the results of the no dual arts students. Findings for objective three are based on the tests run between dual arts students and no arts students (enrolled in neither visual arts nor music). Four ELA tests and three math tests indicated a significant difference. Significant differences were positive for the no arts students. Only White dual arts students had significantly more positive ELA and math scores than those of White no arts students.

In ELA, dual arts students had a mean score of 307.86; the no arts students had a mean score of 319.19. Low SES dual arts students had a mean score of 298.50; the no arts students had a mean score of 309.84. Black dual arts students had a mean score of 300.91; the no arts students had a mean score of 307.39. White dual arts students had a mean score of 342.83; the no arts students had a mean score of 330.4. These results are shown in Figure 5.

In math, dual arts students had a mean score of 318.12; the no arts students had a mean score of 326.71. Low SES dual arts students had a mean score of 310.95; the no arts students had a mean score of 318.28. White dual arts students had a mean score of 349.53; the no arts students had a mean score of 338.1. These results are shown in Figure 6.

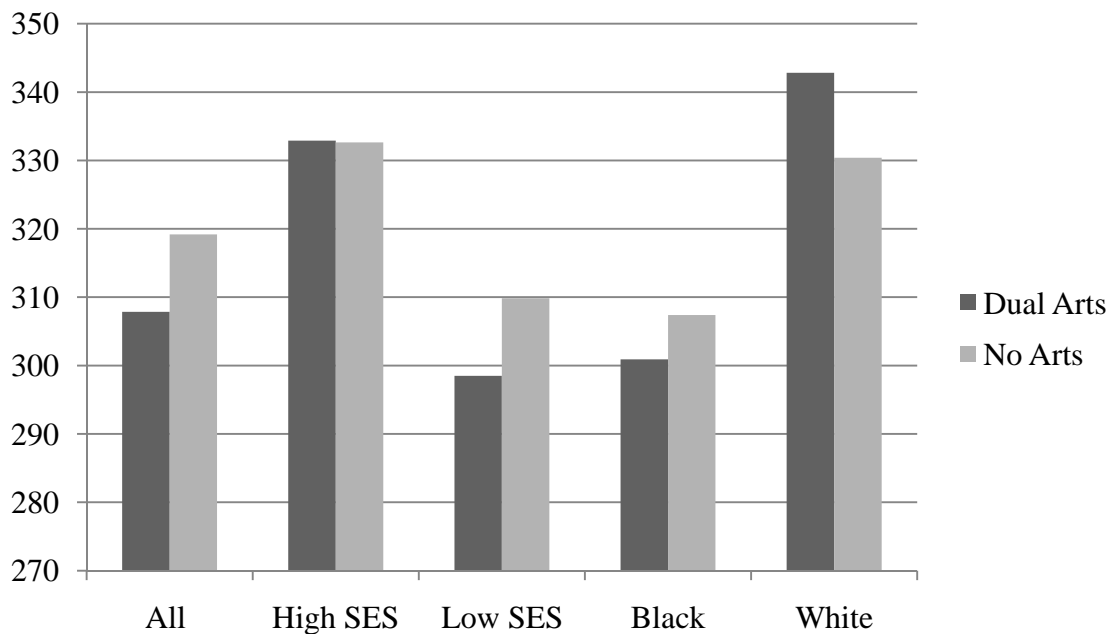


Figure 5

ELA Mean Score Comparisons of Dual Arts and No Arts Students (LEAP Scores)

*Note.* The differences for All, Low SES, and White were significant beyond  $\alpha = .001$ . The difference for Black was significant beyond  $\alpha = .01$ .

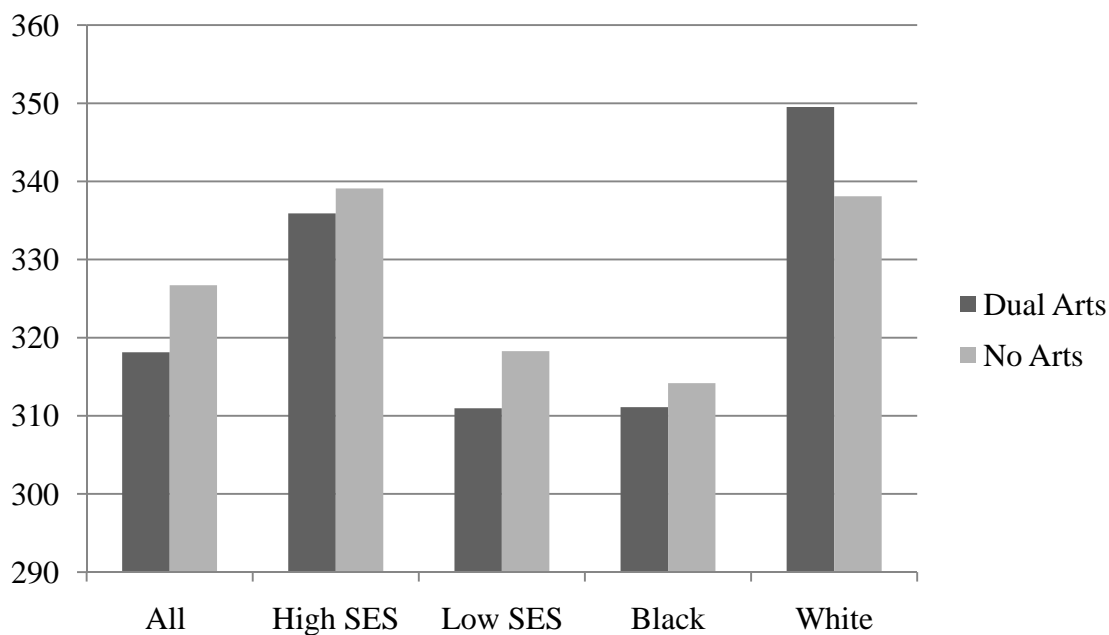


Figure 6

Math Mean Score Comparisons of Dual Arts and No Arts Students (LEAP Scores)

*Note.* The differences for All, Low SES, and White were significant beyond  $\alpha = .001$ .

## Conclusions

### Music Students Perform Better

Louisiana eighth grade students studying music outperformed no music students consistently on ELA and mathematics tests. This conclusion is based on the independent  $t$  test results which indicated significant positive differences ( $p < .001$ ) for music students overall, high and middle SES, low SES, Black, and White. Music students, overall, had a mean ELA score that was eight points more than no music students. High and middle SES music students had eight points more than no music students. Low SES music students scored seven points more than their counterparts. Black music students' mean score was more than seven points higher than their peers. White music students' mean score was nine points more than their no music peers.

Similarly music students' mean math scores had six points more than no music students. High and middle SES music students had six points more than no music students. Low SES music students scored three points more than no music students. Black music students had five points more than Black no music students. White music students had eight points more than White no music students. These findings suggest that instructional time spent studying music, thus reducing time in the tested subjects, does not hinder academic achievement as measured by criterion-referenced tests. Indeed, the evidence indicated that time studying music contributed to higher academic achievement in English language arts and mathematics.

These findings affirm previous literature which indicated that time taken from instruction from common core content areas to provide time for arts education did not impede performance in those content areas (Corbett, McKinney, Wilson, & Noblit, 2001; Dryden, 1992; Kelstrom, 1998; Kraus & Chandrasekaran, 2010; Kvet, 1985; Seaman, 1999; Weissman, 2004). Studies by Catterall, Chapleau, and Iwanaga, (1999) and Helmirch (2008) also found higher math scores

among music students who would have received less instructional time in math. The fact that low SES music students had a significantly higher mean score supports Catterall's (1998) previous findings for low SES students: music performance study enhances academic achievement in English and mathematics. This recommendation supports Kraus and Chandrasekaran (2010) who encouraged policymakers to consider music education central to the overall learning process because of the neural changes that occurred as a result of performing music in structured settings. "Taking into consideration what we know about the positive effects of music training, it seems imperative that we afford all children an equal opportunity to improve their listening skills through music training" (p. 603).

The recommendations, based on these findings, suggest that future researchers examine the academic effectiveness of remediation implemented during the instructional day, thereby denying valuable music instruction to these students. "While causality cannot be determined, this is valuable information for Louisiana teachers and administrators. It's also extremely important for parents to know that participating in music courses will not hinder their child's academic performance; in fact, the opposite was found," wrote Assistant Superintendent Scott Norton (S. M. Norton, personal communication, February 28, 2011). Furthermore, in Louisiana, the evidence supports recommendations that school principals reconsider the practice of advocating more time in English and math in lieu of music for students. It further suggests that, for academic achievement to be significantly improved, the Department of Education should enforce the minimum instructional time in the arts to ensure that all students receive a quality effective education.

Findings outside a laboratory cannot establish causality; however, the researcher joins Braunreuther (2010) in recommending that policymakers insist that students participate in quality music education which is developmentally appropriate. Researchers should examine the

qualitative economic, social, and cultural benefits music education provides for society (Partnership for 21st Century Skills, 2008). Based upon the size of this study's population, the significance of the test score differences, and the consistency of results over both subjects, administrative exclusion may be viewed as a violation of students' constitutional right to provide equal opportunity for students to develop to their full potential (La. Const. 8 Preamble).

### **More Study Needed in Visual Arts and Dual Arts**

The findings were less conclusive relative to visual arts and dual arts. Seven of the ten independent *t* tests examining the relationship of visual arts and ELA and math test scores were not statistically significant. The least conclusive of the tests was the test between Black visual arts and no arts students. Visual arts students had a mean score of 314.19 and the no arts students had a mean score of 314.17 ( $t = .019, p < .985$ ). Only White visual arts students showed a positive difference on the math tests. The mean math score was two points more than White no arts students (test II.B.4.b.). Similarly, it was the White dual arts students who had higher mean scores in ELA and math (III.A.5.b. and III.B.5.b.). Their mean ELA and math scores were respectively twelve points and eleven points more than their no dual arts peers. Further study is needed.

The findings in objective two add to the literature on the potential effects of visual arts education. Alo (2009) suggested that visual arts education was beneficial to students at-risk of not passing the English test. However, the no visual arts students in the middle and highest deciles performed better on the test than the visual arts students.

This study is narrowing the quantitative empirical evidence gap in the literature. There was a limited amount of literature on the study of visual arts instruction and its possible effects on test scores of middle-level students. The literature found was most often combined with other arts disciplines or considered in an integrative manner. The studies that included the visual arts and dual arts were integrative arts studies and not studies of isolated arts education. No literature

was found to support the positive results of the White visual arts and dual arts students. This finding was inconsistent with the dominant patterns of the literature. The test data indicated that the same consistency on test scores was not found in the visual arts group and the “dual arts” group of students. The question this raised was why there were significant differences in the White students who had both. One conclusion is that, in the case of visual arts and dual arts study, more research is needed by the field. Based upon this conclusion and the difficulty in finding visual arts education research, the researcher recommends that more research be conducted on the nature of middle-level visual arts education and its effects on common core academic achievement, primarily English language arts and math. Based on these findings, the accuracy and completeness of the SPS score must be severely questioned. The score should include elements to more accurately reflect all essential work of the schools. At this time, arts performance is not included in the school performance score along with science, social studies, and other ends of education. Relative to this study, it is recommended that quality arts education, taught by certified professionals, be included in the definition of school quality. Further study is needed to examine the effects of integrated arts experiences for middle-level students. Similarly, additional research is needed to examine arts performance results versus arts appreciation/survey alone.

### **The Access Gap**

An excessive number of students were being denied this required aspect of education. The course enrollment data indicated less than a third of the students studied the arts. There were fewer than expected music students; fewer than expected visual arts students; and shockingly fewer students who had the opportunity to experience both. This is based on the group n's obtained in the study music = 7,002, visual arts = 3,236, and dual arts = 609; therefore, a total of 10,847 were documented as having studied the arts. Figure 7 represents the number of arts and



no arts students. This is not consistent with Louisiana law (R.S. 17:7 (26), 2007) and Federal policy (*NCLB*, 2002) which list the arts as part of the core curriculum. State policy (LDE, 2008a) required that students have an arts education.

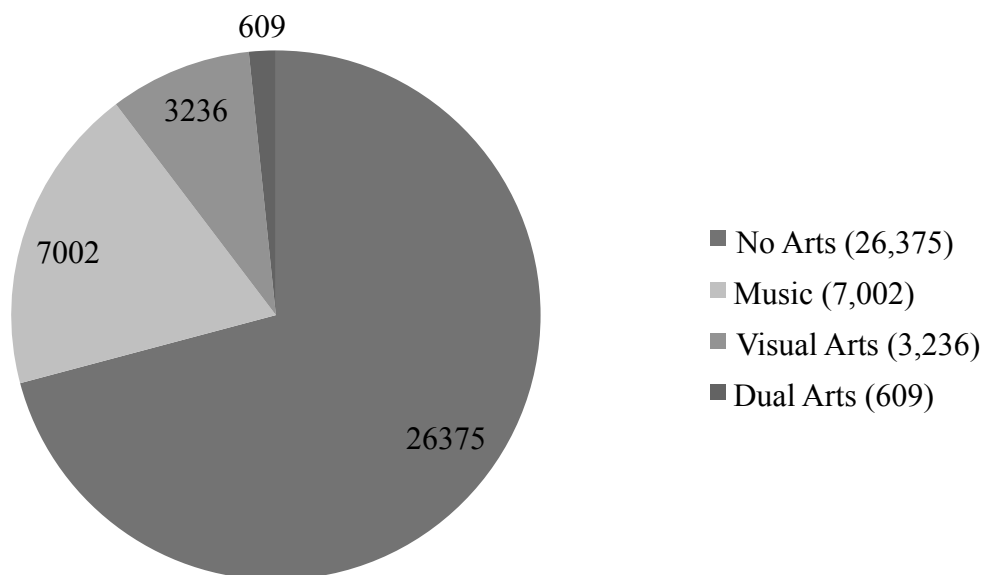


Figure 7  
Eighth Grade Enrollment of Arts and No Arts Students

State law (R.S. 17:7 (26)) specifies 60 minutes of performing and 60 minutes of *required* arts education instruction per week. The one BESE exception is for students who scored at below basic or unsatisfactory only in English language arts or mathematics on the LEAP testing sequence. For those students, instructional time is *recommended* (LDE, 2008a); which administrators can interpret as arts education not being essential. Of these 26,375 no arts students in this dataset, this exception applied to 13,934 (37%) who were below basic in ELA, math, or both. There were also 12,441 (33%) no arts students who were basic, mastery, or advanced (see Figure 8). Assuming consistent performance over time, those no arts students whose ELA and math scores did not bring them within the exception, to be consistent with this policy interpretation, should have been enrolled in visual and performing arts courses. Thus, the administrative

exclusion of these students from the arts of these 12,441 were denied equal opportunity to develop to their full potential in a manner not authorized or supported by policy.

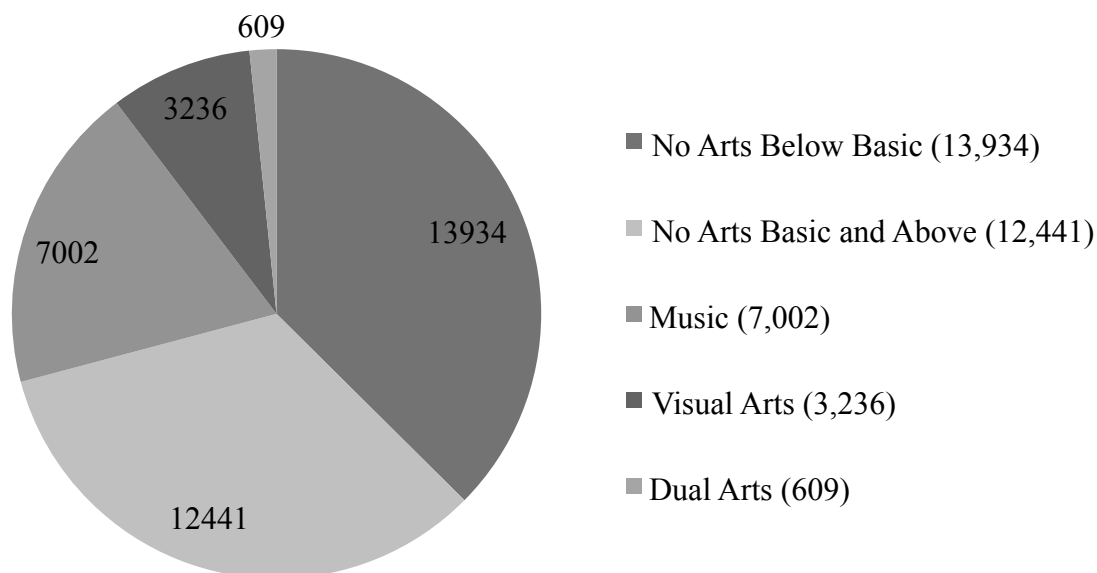


Figure 8  
Eighth Grade Enrollment of Arts Eligible and No Arts Students

This finding supports the Government Accountability Office (2009) report that time allocated for studying the arts had decreased in schools as a result of the *No Child Left Behind Act* and the anecdotal evidence provided by McMurrer (2007), Rothstein and Jacobsen (2006), Rothstein, Jacobsen, and Wilder (2008). This finding also supports Goodlad's (1992) assertion, "Those students who take least well to the favored subjects not only are denied the best of their contents but are denied access to alternatives that possess great intrinsic value as well as potential for holding some of them through the school years to graduation" (p. 199). Zastrow (2004) reported a reduction of instructional minutes in the arts and questioned the equality of the curriculum offered students. This finding also supports the assertion made by the National Task Force on the Arts in Education (NTFAE, 2009).

Numeric and anecdotal data suggest that underserved students often have fewer opportunities to participate in consistent, high-quality arts course work in middle school

than their counterparts who attend schools with greater access to resources. . . . In addition, when arts courses are considered electives, students who are identified as needing academic remediation will often have no time in their middle school schedule for arts course work because their elective class time is consumed by remedial courses. During these lean economic times the arts curriculum is cut or reduced more often than not. This only increases the achievement gap for underserved students. (NTFAE, 2009, p. 11)

Is it possible that denying an arts education could be contributing to the achievement gap? Rabkin and Redmond (2004) called for the arts to be used in closing the achievement gap. The question is raised by some of these findings and those of Kraus and Chandrasekaran (2010) who clearly documented that music training supported auditory development neurologically, thus enhancing listening skills—one of the six core components of literacy. They also reported that such training assisted individuals in developing listening skills that would help them hear through the noise encountered in classrooms. Based on this statement, some of the variance between music and no music students could be explained. Kraus and Chandrasekaran were concerned that inequitable access to quality music education programs “may impair academic achievement in the long term” (2010, p. 603).

Considering the recommendation of Kraus and Chandrasekaran (2010) and that only 609 students or 2% of the population ( $N = 37,222$ ) studied were documented as having both music and visual arts education, as statute requires; based upon these findings it is again strongly recommended that BESE enforce the full statutory curriculum and that all components of the curriculum be included in the School Performance Score (SPS). BESE is encouraged to reexamine the middle-school curriculum to create space in the curriculum which supports invitational learning rather than coercive learning. Are there other things that could be done in the curriculum? Is there a non-critical component that could be integrated, for example reading integrated with English, social studies, and world languages? The current SPS consists of test scores (90%) in English language arts and math, attendance (5%), and dropout rates (5%). Based

upon the findings of this study, it is clear that rating a school on this narrow focus is inadequate, approaching the point of irrelevance. While these components appear to be important, they do not fully reflect all essential aspects of a school's performance. The performance score would ideally include access to, and credit for, visual and performing arts in the curriculum. Credit could be given for providing an educator certified in the areas of dance, music, theatre, or visual arts who would provide daily instruction. Other models might include assessment by external adjudicators; an assessment score would be assigned to the school and calculated into the SPS. It is also recommended that administrators construct schedules requiring that all students receive a balanced education in visual and performing arts.

### **Educating the Whole Child**

Louisiana eighth grade students need a whole exploratory education which includes studying performance of the arts. This idea was an important one for Ollie Tyler, State Deputy Superintendent of Education. Superintendent Tyler said, "When I was principal in Caddo Parish, we did not think we could develop the whole child without arts being a very big part of the curriculum. For example, arts education is a great way for students to bridge the gap between cultures. It is also a way for students who may not excel in traditional classes to stay motivated in school" (O. S. Tyler, personal communication, February 24, 2011). The findings reinforce what middle grade literature already has established. The mean test scores for music students was 5-9 points higher on ELA and 4-8 points higher on math scores than the mean test scores of no music students. All results were significant. These results were similar to the findings of Dryden (1992), Kelstrom (1998), Kvet, (1985). Each of these researchers documented that instructional time for music education did not lower the academic achievement for students.

The literature defining excellence in middle-level education supports development of educational experiences that include arts education in the curriculum. Middle-level students are

best engaged by a relevant, integrative, and exploratory curriculum. Exploratory curriculum requires students to act, and then think about what they have done. Regular intense practice of the performing arts strengthens this process. Dewey, and Lancelot, wrote of the necessity of developing the whole child. Dewey (1909, 1934) reminded readers that students were going to work in an integrated world and that the education program the students received should also be whole rather than disintegrated. Lancelot (1944) identified that a whole curriculum addresses the needs of the student whether “intellectual, social, cultural, moral, or spiritual” (p. 136). More recently, Munson (2009) recognized a common ingredient of national educational programs that outscored the United States; they dedicated themselves “to educating their children deeply in a wide range of subjects” (p. iii) and asserted that providing a “comprehensive, content-rich curriculum is the key to high achievement” (p. iv).

Catterall (1998) reported that “arts-rich” students had higher standardized test scores. When the data was disaggregated by SES, he found that “arts-rich,” low SES students had higher scores than “arts-poor” low SES students. On question II.A.2.a., an independent  $t$  test between high and middle SES visual arts students and no visual arts students on ELA scores was significant ( $t = 2.887, p < .004$ ). When the music students were removed (II.A.2.b.), and the mean score of visual arts students were compared to no arts students, the result was no longer significant ( $t = .574, p < .566$ ). On question II.A.4.a., the independent  $t$  test of Black visual arts students and no visual arts students was significant ( $t = 3.609, p < .001$ ). When the music students were removed (II.A.4.b.) and the mean scores of visual arts students were compared to no arts students, the result was no longer significant ( $t = 1.702, p < .089$ ).

On question II.B.1.a., an independent  $t$  test between visual arts students and no visual arts students on math scores was significant ( $t = 3.212, p < .001$ ). However, when music students were removed (II.B.1.b.) and the mean scores of visual arts students were compared to no arts

students, the result was no longer significant ( $t = .267, p < .790$ ). Conversely, the results from the White visual arts students (II.B.5.a. and II.B.5.b.) went from not being significant ( $t = .489, p < .625$ ) to being significant, once the music students were removed ( $t = 2.771, p < .006$ ).

This study supports Braunreuther's (2010) inconsistent results. However, Braunreuther did not account for separate disciplines in the arts. His study considered the arts as a single criterion variable. This study extends his results by disaggregating results by music and visual arts respectively. This research indicates that had the research design accounted for music separately, the findings may have been similar relative to music and visual arts. Other literature examined an integrated arts model, which could not be accounted for in the data available. The intent for this study was to add to the literature examining the relationship of conditional transfer between visual arts and ELA and math standardized scores for middle-level student. Further research is needed on the topic of the effects of visual arts education, especially for middle-level students (ages 10-15) to build a knowledge base on both the specifics of visual arts education and its effect on academic achievement in the common core subjects. Two key components of literacy related to visual arts are viewing and visually representing. This researcher therefore recommends that BESE ensure that all components of the curriculum be included in the SPS.

### **Why Study Arts**

Visual and performing arts education support formal education's aims of improving achievement in common core subjects. The results of this study were clear for music education. All independent-samples  $t$  tests showed that music students had significantly higher tests scores ( $p < .001$ ). However, the results were less clear for visual arts and dual arts study. Most of the results of these tests suggested one of two statements. "Any difference may be attributable to chance alone" or "enrolling in the visual arts or dual arts alone may not be enough to affect test scores in ELA or math." One observation may be that the numbers of students in those

subpopulations were too small for a comparison. For example, there were 3,845 visual arts students and 609 dual arts students compared to 26,375 no arts students.

One major conclusion of this study is that arts education is essential for becoming a competent citizen based on the literature context and findings of high levels of influence of arts, particularly music, on increased English and math achievement, inferred from required LEAP examinations. Quality education develops learners who are socially, economically, and culturally proficient. This focuses on developing knowledge, skills, and habits empowering citizens to produce quality goods and services needed for advanced societies (Taylor & Baker, 2003; U. S. Bureau of Education, 1918). Such a society demands high academic outcomes for each student. This requires curricular experiences that are relevant, integrative, and exploratory. Such diverse learning experiences support all students' gaining social equity through responding to individual and cultural needs (NFAMGR, 2000; NMSA, 2003).

Historically, as part of educating a total citizen, involvement in and through the arts has been essential to all free representative societies. Each society uses the visual and performing arts to communicate that which is commonly found to be most valuable to the community. In the 21st century, imagination and creativity have been determined to be essential in all students (Partnership for 21st Century Skills, 2008; Pink 2005, 2008). Arts education does not hold a monopoly on developing students' creativity. They provide essential tools for students to exercise those parts of the brain necessary for creating. The essential attribute for the effective citizen of the 21st century is creativity (Pink, 2005). Developing creativity through regular direct arts education experiences empowers students' life-long learning and is worthy of study by all students during the school day. Arts are cognitively rigorous embodying the analytical, the aesthetic, the cultural, the rational, and the creative. They are equally rigorous from the affective perspective (Davis, 2008; Greene, 1995).

These attributes support Eisner's (2002) warning that this cannot be the primary reason why time and resources are allocated for arts education; it cannot be a mere support of generative subjects. Smith (2006) said, "That art education continues to be justified on the basis of its efficacy in achieving nonaesthetic objectives indicates that the field of art education continues to be confused about its basic aims and purposes" (p. 52). The arts are the primary identifying means to distinguish human life from other life forms on the planet. Through the arts we communicate to future generations what contemporary society values, and we crystallize the current generation's aspirations for its progeny. Quality arts education supports students' learning what it means to be fully human. As Fowler (1996) asserted, that should be enough of a reason why the arts are an essential part of the curricular day for every student. "The arts, like most really significant human behaviors, defy measurement" (Davis, 2008, p. 80). Arts develop in the performer the sense of what is good, true, and excellent. This attribute is the basis for all solid economic, social, and cultural competency.

In recent times, arts education has been challenged to prove itself as worthy of inclusion in the academic day. Given, *No Child Left Behind Act*, this challenge has demanded correlational studies between the arts study and academic achievement, specifically in English language arts and mathematics, examining the potential transfer of skills between disciplines. Literature-supported findings document arts education for all students as essential if they are to develop the knowledge, skills, and dispositions of effective 21st century citizens. As Braunreuther (2010) has recommended, this study is offering "substantive evidence" (p. 177) in support of curricular arts education for legislators and policymakers. This idea is limited to how the arts can be supportive of test scores in other content areas. He found that, "at worst the arts did no harm" (p.182).

The results of these tests were conclusive for the study of music, and inconclusive for visual arts and dual arts study; arts study is essential for a meaningful, challenging, and rigorous



education. Another issue is providing equal opportunity for diverse learners and entails the following idea: “I would like to propose that an equally good reason is that they provide opportunities for failure to children who succeed in other areas,” (Davis, 2008, p. 81) i.e., developing resilience. “Regardless of the criteria we use, or the arenas we consider, all students need to be able to encounter and make sense of success. Just as important is the need for students to encounter and make sense of failure” (Davis, 2008, p. 83). Personal, social, and academic resilience is primarily developed through the creative process in the arts (Stevenson, 2006). These are the consistent attributes of productive citizens.

Arts communicate that which goes beyond what can be put into words (Dewey, 1934). Based on Caterall’s (1998, 2009) findings, and the findings of this study, as well as Braunreuther’s (2010), it is necessary that we provide students with as many ways to communicate knowledge, information, and understanding as possible. Davis (2008) also supported the idea that arts experiences, on a regular basis, strengthen human capacities of agency, engagement, and respect, all essential for effective participation as citizens. These capacities complement the unique outcomes of arts education which include imagination, expression, empathy, interpretation, inquiry, reflection, and responsibility. Kagan’s (2009) reasons for requiring arts education include: strengthening the student’s self confidence, personal and social agency, schematic and procedural thinking, aesthetic productivity, and collaborative production. Finally, Kagan asserts that arts education enables students to positively experience and express feelings or conflicts that go beyond words. These are accepted as necessary attributes in the work place and community.

As a whole, Fowler (1996), Davis (2008), and Kagan (2009), when combined with the findings of Helmrich (2008), Braunreuther (2010), the mission statement in the Preamble (Louisiana State Constitution, 1974), and this study, support the need for equity, access, and excellent arts education for all students. An arts education for all students is necessary for

Louisiana students to become competent citizens. The findings associated with visual arts and dual arts study did not have as many significant results as music. Some did not support the visual arts study. However, examination of the mean scores of visual arts students compared to no visual arts students and to no arts students suggests that something else may be affecting students' scores.

The researcher recommends that additional research be conducted on the learning effects of visual arts, dance, and theatre. There was a noticeable gap in the literature especially in the areas of visual arts and dance. The researcher recommends, further, that studies of the academic effectiveness of allocating regular instructional time for remediation be conducted because it has supplanted the time for arts education of 18,598 students (50%) in this study. Did the loss of all arts instruction for these students result in a commensurate increase in achievement in the tested subjects to justify this denial of an entire essential component, creativity, of an effective 21st century education? Does this practice contribute positively to the constitutional goals of humanity, justice, and excellence? Are students becoming more effective, contributing citizens, by being denied an arts education and, allegedly, becoming more competent in the “tool” subjects of English language arts and mathematics?

This is not to imply that only music be studied, or that visual arts be removed from the curricular day, because they do not contribute to proficiency in English or mathematics. (One could hypothesize that the other performing arts would see some benefit.) The intent of this study was not to conclude that the primary purpose for studying the arts was to lead to higher test scores. Allocated arts instructional time, dance and theatre included, is essential to develop an educated citizenry and support a civilized society. Allocation of arts instruction does not detract from effective curriculum delivery in English and mathematics. Nothing in the study suggested that extra time spent in the tested subjects increased performance in the tested areas.

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# APPENDIX A

## FEDERAL POVERTY LEVEL INDEX

Federal Register / Vol. 72, No. 38 / Tuesday, February 27, 2007 / Notices

8687

HOUSEHOLD SIZE		INCOME ELIGIBILITY GUIDELINES														
		Effective from July 1, 2007 to June 30, 2008														
FEDERAL POVERTY GUIDELINES		REDUCED PRICE MEALS - 188 %						FREE MEALS - 130 %								
		ANNUAL	MONTHLY	PRICE PER MONTH	EVERY TWO WEEKS	WEEKLY	ANNUAL	MONTHLY	PRICE PER MONTH	EVERY TWO WEEKS	WEEKLY	ANNUAL	MONTHLY	PRICE PER MONTH	EVERY TWO WEEKS	WEEKLY
		<b>48 CONTIGUOUS STATES, DISTRICT OF COLUMBIA, GUAM, AND TERRITORIES</b>														
1	10,210	18,888	1,575	768	727	364	13,273	1,107	554	511	266					
2	13,850	26,327	2,111	1,056	975	486	17,797	1,484	742	685	343					
3	17,170	31,765	2,648	1,324	1,222	611	22,321	1,851	931	859	430					
4	20,650	38,203	3,184	1,562	1,470	735	26,845	2,238	1,119	1,033	517					
5	24,130	44,641	3,721	1,861	1,717	858	31,369	2,615	1,308	1,207	604					
6	27,610	51,079	4,257	2,129	1,965	983	35,893	2,992	1,486	1,381	691					
7	31,090	57,517	4,794	2,397	2,213	1,107	40,417	3,369	1,665	1,555	778					
8	34,570	63,955	5,330	2,664	2,460	1,230	44,941	3,746	1,873	1,728	865					
For each add'l family member, add		6,438	537	269	248	124	4,524	377	189	174	87					
		<b>ALASKA</b>														
1	12,770	23,625	1,968	985	909	455	16,601	1,384	682	639	320					
2	17,120	31,672	2,640	1,320	1,219	610	22,266	1,856	928	856	428					
3	21,470	39,720	3,310	1,655	1,528	764	27,911	2,326	1,163	1,074	537					
4	25,820	47,767	3,981	1,991	1,838	919	33,556	2,798	1,399	1,291	646					
5	30,170	55,815	4,652	2,326	2,147	1,074	39,221	3,269	1,635	1,509	755					
6	34,520	63,862	5,322	2,661	2,457	1,229	44,876	3,740	1,870	1,726	863					
7	38,870	71,910	5,993	2,997	2,765	1,383	50,531	4,211	2,106	1,944	972					
8	43,220	79,957	6,664	3,332	3,076	1,538	56,186	4,683	2,342	2,161	1,081					
For each add'l family member, add		8,046	671	336	310	155	5,655	472	236	216	109					
		<b>HAWAII</b>														
1	11,750	21,738	1,812	900	837	419	15,275	1,273	637	588	294					
2	15,750	29,136	2,429	1,215	1,121	561	20,475	1,707	854	788	394					
3	19,750	36,536	3,045	1,523	1,406	703	25,675	2,140	1,070	988	494					
4	23,750	43,936	3,662	1,831	1,690	845	30,875	2,573	1,287	1,188	594					
5	27,750	51,336	4,279	2,140	1,975	988	36,075	3,007	1,504	1,388	694					
6	31,750	58,736	4,895	2,448	2,260	1,130	41,275	3,440	1,720	1,588	794					
7	35,750	66,136	5,512	2,756	2,544	1,272	46,475	3,873	1,937	1,788	894					
8	39,750	73,536	6,129	3,065	2,829	1,415	51,675	4,307	2,154	1,988	994					
For each add'l family member, add		7,400	617	309	285	143	5,200	434	217	200	100					

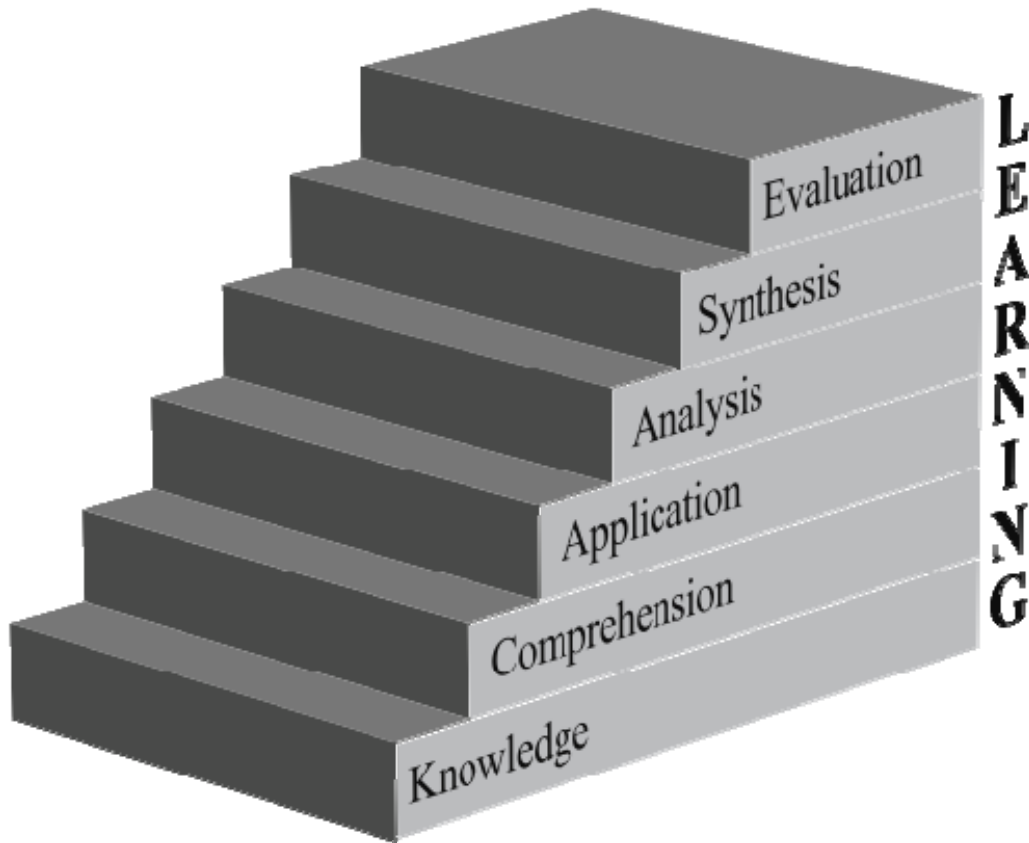
## APPENDIX B

### LEAP ACHIEVEMENT LEVELS AND SCALED SCORE RANGES GRADE 8

Achievement Level	English Language Arts Scaled Score Range	Mathematics Scaled Score Range	Science Scaled Score Range	Social Studies Scaled Score Range
Advanced	402–500	398–500	400–500	404–500
Mastery	356–401	376–397	345–399	350–403
Basic	315–355	321–375	305–344	297–349
Approaching Basic	269–314	296–320	267–304	263–296
Unsatisfactory	100–268	100–295	100–266	100–262

Source: Bulletin 118: *Statewide Assessments Standards and Practices* (LDE, 2009a, p. 8).

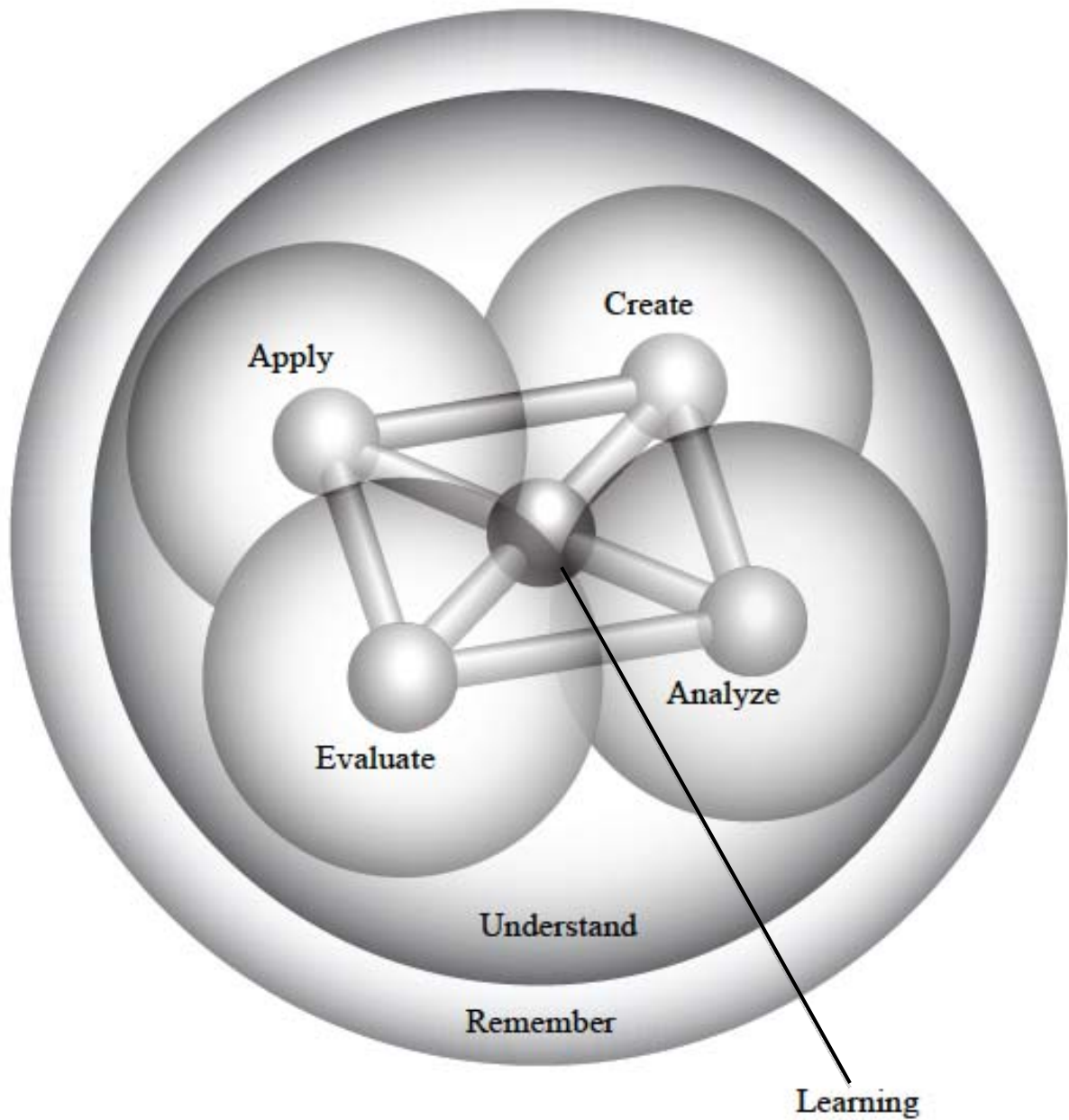
**APPENDIX C**  
**HIGHER-ORDER THINKING SKILLS**



Note. Image is an original work conceived by the author and realized by Charles Davis.



**APPENDIX D**  
**COMPLEX-REASONING SKILLS**



Note. Image is an original work conceived by the author and realized by Charles Davis.

**APPENDIX E**

**SPREADSHEET OF SAMPLE DATA**

Site Code	Grade	Free Lunch Status	ELA Scaled Score	Math Scaled	CourseCd	Gen ID
009075	08	1	315	309	030500	1
009037	08	1	299	322	030369	2
009017	08	1	274	278	030500	3
009097	08	1	319	344	030399	4
009097	08	1	319	344	030599	4
010034	08	0	270	333	120311	5
010036	08	0	343	368	400098	6
010035	08	1	290	324	030398	7

All music courses begin with 0303 or 0304.

All visual arts courses begin with 0305.

## APPENDIX F

### CONTENT STANDARDS MEASURED BY LEAP

	<b>English Language Arts</b>	<b>Mathematics</b>	<b>Science</b>	<b>Social Studies</b>
<b>Content Standards Measured</b>	<ul style="list-style-type: none"> <li>• Read, comprehend, and respond to a range of materials</li> <li>• Write competently</li> <li>• Use conventions of language</li> <li>• Apply speaking and listening skills (not assessed)</li> <li>• Locate, select, and synthesize information</li> <li>• Read, analyze, and respond to literature</li> <li>• Apply reasoning and problem-solving skills</li> </ul>	<ul style="list-style-type: none"> <li>• Number and number relations</li> <li>• Algebra</li> <li>• Measurement</li> <li>• Geometry</li> <li>• Data analysis, probability, and discrete math</li> <li>• Patterns, relations, and functions</li> </ul>	<ul style="list-style-type: none"> <li>• Science as Inquiry</li> <li>• Physical Science</li> <li>• Life Science</li> <li>• Earth and Space Science</li> <li>• Science and the Environment</li> </ul>	<ul style="list-style-type: none"> <li>• Geography: Physical and Cultural Systems</li> <li>• Civics: Citizenship and Government</li> <li>• Economics: Independence and Decision Making</li> <li>• History: Time, Continuity, and Change</li> </ul>

Source: *The Louisiana Educational Assessment Program LEAP/GEE 2007-2008 Annual Report* (LDE, 2008c).

**APPENDIX G**

**APPLICATION FROM INSTITUTIONAL OVERSIGHT FORM**



# Application for Exemption from Institutional Oversight

Unless qualified as meeting the specific criteria for exemption from Institutional Review Board (IRB) oversight, ALL LSU research/projects using living humans as subjects, or samples or data obtained from humans, directly or indirectly, with or without their consent, must be approved or exempted in advance by the LSU IRB. This Form helps the PI determine if a project may be exempted, and is used to request an exemption.



Institutional Review Board  
 Dr. Robert Mathews, Chair  
 203 B-1 David Boyd Hall  
 Baton Rouge, LA 70803  
 P: 225.578.8692  
 F: 225.578.6792  
 irb@lsu.edu | lsu.edu/irb

- Applicant, Please fill out the application in its entirety and include the completed application as well as parts A-E, listed below, when submitting to the IRB. Once the application is completed, please submit two copies of the completed application to the IRB Office or to a member of the Human Subjects Screening Committee. Members of this committee can be found at <http://www.lsu.edu/irb/screeningmembers.shtml>
- A Complete Application Includes All of the Following:
  - (A) Two copies of this completed form and two copies of parts B thru E.
  - (B) A brief project description (adequate to evaluate risks to subjects and to explain your responses to Parts 1 & 2)
  - (C) Copies of all instruments to be used.
    - If this proposal is part of a grant proposal, include a copy of the proposal and all recruitment material.
  - (D) The consent form that you will use in the study (see part 3 for more information.)
  - (E) Certificate of Completion of Human Subjects Protection Training for all personnel involved in the project, including students who are involved with testing or handling data, unless already on file with the IRB.  
 Training link: ( <http://phrp.nihtraining.com/users/login.php>.)

1) Principal Investigator: Richard A. Baker, Jr. Rank: Graduate

Student\*? Y/N

Dept.: ETTP Ph: 939-7100 E-mail: rbaker7@lsu.edu

2) Co Investigator(s): please include department, rank, phone and e-mail for each  
 \* If student, please identify and name supervising professor in this space  
Denise Egéa-Kuehne, Ph.D., ETPP, Professor, 578-2429, dekueh@lsu.edu

*D. Egea-Kuehne*

3) Project Title: The Relationship Between Fine Arts Formal Study in Grade Eight and Academic Achievement on the Eight-Grade Louisiana Educational Assessment Program for the 21st Century (LEAP) Test.

4) LSU Proposal?(yes or no) No If Yes, LSU Proposal Number \_\_\_\_\_  
 Also, if YES, either  This application completely matches the scope of work in the grant **OR**  
 More IRB Applications will be filed later

5) Subject pool (e.g. Psychology Students) Louisiana Dept. of Ed. test data  
 • Circle any "vulnerable populations" to be used: (children <18; the mentally impaired, pregnant women, the aged, other). Projects with incarcerated persons cannot be exempted.

6) PI Signature *Richard A. Baker, Jr.* \*\* Date 10/12/09 (no per signatures)  
 \*\*I certify my responses are accurate and complete. If the project scope or design is later changed I will resubmit for review. I will obtain written approval from the Authorized Representative of all non-LSU institutions in which the study is conducted. I also understand that it is my responsibility to maintain copies of all consent forms at LSU for three years after completion of the study. If I leave LSU before that time the consent forms should be preserved in the Departmental Office.

Study Exempted By:  
 Dr. Robert C. Mathews, Chairman  
 Institutional Review Board  
 Louisiana State University  
 203 B-1 David Boyd Hall  
 225-578-8692 | www.lsu.edu/irb  
 Exemption Expires: 10-18-2012

IRB# R17168 LSU Proposal# \_\_\_\_\_  
 Complete Application  
 Human Subjects Training

Screening Committee Action: Exempted  Not Exempted \_\_\_\_\_ Category/Paragraph 4  
 Reviewer Mathews Signature *Robert Mathews* Date 10/19/07

**APPENDIX H**

**LOUISIANA DEPARTMENT OF EDUCATION DATA REQUEST FORM**

**Louisiana Department of Education  
Division of Curriculum Standards  
Middle and Secondary Standards**

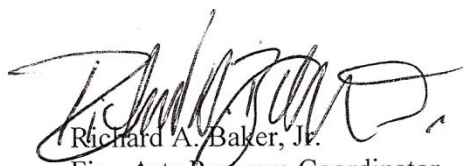
**Data Request**

March 2, 2009

This request is made to facilitate a study of the relationship between enrollment in classes where the creation of arts products and performances is the principal outcome and scores on the English language arts and mathematics eighth grade Spring 2008 Louisiana Educational Assessment Program (LEAP) administration. In order to facilitate this study the following extant data sources must be examined. These data are needed in an electronic form, which can be loaded into a statistical program such as SPSS or SAS.

Data are required in the following categories.

- Free and Reduced Lunch Participation
- Student Identification Number
- Eighth Grade Identification
- English/language arts scaled test score by student
- Mathematics scaled test score by student
- Student Course Codes – 030369, 030300, 030320, 030367, 030370, 030500, 030598, 030599
- Assignment of a control course code for all students not having the above codes
- If available, the teacher's license number and certification code attached to each of the above-cited codes
- Site code for each student who participated in the Eighth Grade LEAP testing in 2008.



Richard A. Baker, Jr.  
Fine Arts Program Coordinator

### **Research Questions Regarding Student Comparison Scores**

This study posed the following questions:

1. Do Louisiana eighth grade students who participate in formal study in band, choir, or orchestra have significantly lower scores on the English language arts LEAP than those students who did not participate in formal arts study?
2. Do Louisiana eighth grade students who qualify for free or reduced lunch and participate in formal study in band, choir, or orchestra have significantly lower scores on the English language arts LEAP than those students who did not participate in formal arts study?
3. Do Louisiana eighth grade students who participate in formal study in visual arts have significantly lower scores on the English language arts LEAP than those students who did not participate in formal arts study?
4. Do Louisiana eighth grade students who qualify for free or reduced lunch and participate in formal study in visual arts have significantly lower scores on the English language arts LEAP than those students who did not participate in formal arts study?
5. Do Louisiana eighth grade students who participate in formal study in band, choir, or orchestra have significantly lower scores on the mathematics LEAP than those students who did not participate in formal arts study?
6. Do Louisiana eighth grade students who qualify for free or reduced lunch and participate in formal study in band, choir, or orchestra have significantly lower scores on the mathematics LEAP than those students who did not participate in formal arts study?
7. Do Louisiana eighth grade students who participate in formal study in visual arts have significantly lower scores on the mathematics LEAP than those students who did not participate in formal arts study?
8. Do Louisiana eighth grade students who qualify for free or reduced lunch and participate in formal study in visual arts have significantly lower scores on the mathematics LEAP than those students who did not participate in formal arts study?



I am requesting permission to use Louisiana Educational Assessment Program data for research purposes (see attached proposal).

Name: Richard A. Baker, Jr., M.Ed.  
Position: Fine Arts Program Coordinator  
Address: Louisiana Department of Education  
Division of Curriculum Standards  
P.O. Box 94064  
Baton Rouge, LA 70804

I also acknowledge that all individual student information is confidential and I agree to maintain confidentiality regarding all specific students.

  
Signature

March 25, 2009  
Date

Approval:   
Scott M. Norton, Assistant Superintendent  
Office of Student and School Performance

**APPENDIX I**

**HUMAN SUBJECTS RESEARCH COURSE COMPLETION CERTIFICATE**



## Human Participant Protections Education for Research Teams

### Completion Certificate

This is to certify that

**Richard Baker**

has completed the **Human Participants Protection Education for Research Teams** online course, sponsored by the National Institutes of Health (NIH), on 07/07/2005.

This course included the following:

- key historical events and current issues that impact guidelines and legislation on human participant protection in research.
- ethical principles and guidelines that should assist in resolving the ethical issues inherent in the conduct of research with human participants.
- the use of key ethical principles and federal regulations to protect human participants at various stages in the research process.
- a description of guidelines for the protection of special populations in research.
- a definition of informed consent and components necessary for a valid consent.
- a description of the role of the IRB in the research process.
- the roles, responsibilities, and interactions of federal agencies, institutions, and researchers in conducting research with human participants.

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## VITA

Richard A. Baker, Jr., earned the bachelor's degree in music education from Ball State University, Muncie, Indiana. His service to Louisiana education began in 1997 in Destrehan, Louisiana. While teaching, he earned the master's degree in educational administration from the University of New Orleans. He co-authored works on assessment, curriculum, and school law in *Basic Education*, *Principal Leadership*, *Educational Leadership*, and is a regular contributor to the *Louisiana Musician*. He arranged "Louisiana, My Home Sweet Home" for Louisiana's music educators. In 2007, Mr. Baker served on a grants reading panel for the National Endowment for the Arts and was honored by the Louisiana Art Education Association's Distinguished Service Outside the Profession Award. In 2008, Ball State University awarded a Citation of Achievement and he represented Louisiana at the Education Leadership Institute. In 2009, he served on the Lieutenant Governor's Arts Education Task Force.

Since 2002, Mr. Baker has been the Fine Arts Program Coordinator for the Louisiana Department of Education. He edited fourteen curriculum guides that were the foundation for professional development for educators, teaching artists, and administrators. He directed more than sixty educators, teaching artists, supervisors, and faculty from seven universities in writing the project. He is an ex-officio board member of the Louisiana Music Educators Association and has served on the executive board for the Baton Rouge Symphony. Mr. Baker performed with the New Orleans and the Baton Rouge Symphony Choruses. He has sung with the First United Methodist Choirs in New Orleans and Baton Rouge. Mr. Baker has been the music director and conductor for six Baton Rouge Little Theater productions including *Beauty and the Beast*, *Cats*, *Chicago*, and *Rent*. He was the lead sound effects artist for *It's a Wonderful Life: A Radio Play* which aired on WRKF Public Radio.

Mr. Baker and his wife, Ann, currently live in Baton Rouge, Louisiana.