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# The effects of instruction utilizing the arts on the academic achievement of fourth-grade students

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*Louisiana Tech University*

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**THE EFFECTS OF INSTRUCTION UTILIZING THE ARTS ON THE ACADEMIC  
ACHIEVEMENT OF FOURTH GRADE STUDENTS**

**By**

**Elizabeth Fallin Manning, B.A., M.A.**

**A Dissertation Presented in Partial Fulfillment  
Of the Requirements for the Degree  
Doctor of Education in Curriculum and Instruction**

**COLLEGE OF EDUCATION  
LOUISIANA TECH UNIVERSITY**

**March 2003**

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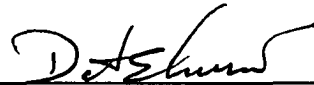
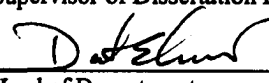
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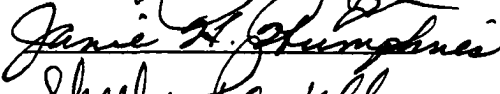
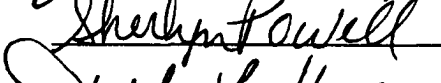
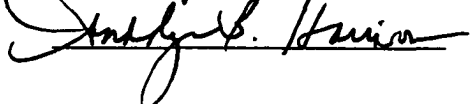
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\_\_\_\_\_  
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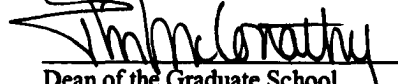
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## ABSTRACT

In this day of accountability, members of state government agencies are looking for ways to increase student achievement, especially in the area of high stakes testing. Louisiana's accountability program has yielded state curriculum standards which identify the content that should be taught by specific grade levels. Teachers are now charged with the responsibility of finding methods to teach these standards. With all of the attention to these academic standards, what is the role of the arts? The Louisiana Institute for Education in the Arts (LAIEA) suggests that the arts are the tools with which to teach these academic standards. This institute, based on the philosophy of Comprehensive Arts Education, provides teachers with a six-day training designed to immerse them in how to teach both through the arts and in the arts.

The purpose of this research was to examine the role of the arts used as entry points into the academic curriculum and the academic success of students in settings where the arts were infused into the curriculum. An ex-post facto research design was used to compare fourth grade Louisiana Educational Assessment Program for the Twenty-first Century (LEAP 21) scores from 74 schools. Thirty-seven of these schools had teachers who had been trained in the Louisiana Institute for Education in the Arts. The remaining 37 were matched schools based on the location of the school and the population of fourth grade students taking the LEAP 21. The students in the schools with LAIEA trained teachers scored significantly higher ( $p < .05$ ) than the comparison

**group in the mathematics, language arts, and science sections of the LEAP 21. No significant difference existed in the scores of the social studies section.**



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## DEDICATION

This dissertation is dedicated to my family as this degree would not have been possible without them. To Rodney, my husband and friend, thank you for your love, for stepping in for me when needed, for your daily encouragement, and for keeping me balanced throughout this process. To Matthew Paul and Mary-Margaret Elizabeth, my wonderful children, thank you for sharing me with the work I needed to complete and for always believing that you were my top priority. To Jimmy and Vici Fallin, my parents and Clarence and Edna Manning, my father-in-law and mother-in-law, thank you for your love, support, and your unwavering belief in me. To my sisters, Carey and Laura and my brother-in-law Jeff, and to my brothers-in-law, Wendell and Michael, and my sister-in-law, Ashley, thank you for your support and prayers. To my grandparents, Peggy Jones and the late H. R. Jones, thank you for everything you did to make this degree possible and for your continual interest in every project I undertook. To Kim and Clint Graham, our dear friends, who lent support in so many ways from helping with our children to sharing a good laugh, which in many cases was the best remedy for a stressful project. To all of you, thank you for allowing me the opportunity to achieve my dream.

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## CHAPTER 1

### Introduction

In this day and age of state and national accountability, administrators seem to be searching for the most effective curricular intervention to obtain the quickest improvement in academic success for their students. Ironically, the arts, disciplines that theorists as well as teachers in the trenches claim to improve higher order thinking skills, are the very programs typically cut from the school district's budget when money is limited (Berube, 1999). If the arts are responsible for assisting with the creation of strong thinkers, why are the school leaders hesitant to fund programs featuring the arts? Day (1998) and Perrin (1994) suggested that the arts were stereotypically considered frills and that these programs only were offered to the talented. Day (1998) further stated that parents tended to oppose a change to include arts programs because they themselves were not instructed in the arts. Therefore, they did not deem these programs to be necessary.

Conversely, a public awareness campaign survey (Davidson & Michener, 2001) revealed that 73% of the Americans surveyed felt that the arts were very important to children's development. These results were based on 1,008 telephone interviews with individuals over the age of 18. The respondents represented all geographic areas of the United States. The Americans surveyed stated that the arts should be for all students, not just the economically privileged. They also noted that the arts provided for a well-rounded education of children and they promoted skills such as creativity, self-

expression, and individualism. However, 71% of the respondents reported that they were satisfied with the amount of the arts instruction their children receive in schools. If this majority is satisfied with the current amount of arts instruction, further funding would be difficult to acquire since the general public is represented through the members of the school board, and the board members typically reflect the thinking of their constituents. Berube (1999) noted that when money for arts programs was requested from school boards, they tended to deny the requests. He continued by stating that administrators failed to see the importance of the arts.

Theorists and teachers were quick to defend the necessity of arts programs to education. Hamblen (1997) stated that the arts were a means by which students became involved, active learners rather than passive, bored students. Another benefit from the arts was that because of the active involvement of the learner, the arts enabled students to construct their own meaning (Catterall, 1998). Burton, Horowitz, and Abeles (2000) stated that the arts promoted the following outcomes in students: (a) creative thinking, (b) fluency in thought, (c) originality, (d) focused perception, (e) imagination, (f) risk taking, (g) task persistence, and (h) ownership in learning. Hamblen (1997) added that the arts provided, in addition to creative behaviors, critical thinking and self-awareness. The arts also were considered as a means of communication and expression (Cousin & Martens, 1998; Eisner, 1992; Grallert, 1991; Hatfield, 1998).

Research by the National Endowment of the Arts (1991) recognized five themes regarding the arts and academics. The themes are stated as follows:

1. The arts can foster the development of students who are actively engaged in learning;

2. The arts contribute to the development of a creative, committed and exciting school culture of teachers, students and parents;
3. The arts can help generate a dynamic, coordinated and cohesive curriculum;
4. The arts can build bridges to the larger community, the broader culture to other institutions; and
5. The arts can humanize the learning environment. (p. 25)

The arts helped to develop listening and thinking skills such as problem solving and decision making (Grallert, 1991). The arts provided students with the ability to become (a) active and self-motivated learners, (b) collaborative workers, and (c) risk takers (Perrin, 1994). Studies in the arts promoted creative behaviors, critical thinking, and self awareness (Hamblen, 1997). The arts also promoted imagination and task persistence, originality and fluency (Burton, Horowitz, & Abeles, 2000).

Officials in the Louisiana Department of Education (1997) noted the importance of the arts as an integral part of Louisiana students' education. In the preface to the *Louisiana Arts Content Standards*, Louisiana State Department officials contended that the arts (visual arts, dance, dramatics, and music) had a significant role to play in the education of the students in this state. Officials further noted that the arts provided opportunities for students to feel successful as they encouraged a variety of learning opportunities that meet a wide range of intelligences and learning styles. Curriculum developers for the *Louisiana Arts Content Standards* continued to attribute education in the arts to outcomes such as increased problem solving abilities and communication skills in students. In addition, students of the arts were encouraged to develop strong self-

discipline skills. All of these skills enhanced by the arts are desired in America's workplace.

Yet, a report concerning arts education in America's schools (U. S. Department of Education, 1995) suggested that 15% of the elementary education students in America received no visual arts instruction. Of those students who did receive visual arts instruction, 43% received art instruction from a certified visual arts teacher at an average of 77 minutes per week. Specialists teamed with classroom teachers executed visual arts instruction in 29% of the cases. This partnership was used to teach art an average of 91 minutes per week. Twenty-eight percent of the students were taught visual arts by their classroom teachers only. These students received an average of 49 minutes of visual arts instruction per week.

Music fared better than visual arts in that only 3% of the elementary schools in America surveyed did not offer music programs to their students. Of those who offered music programs, 92% of them were taught, at least in part, by specialists. Ninety-seven percent of those elementary schools surveyed stated that their students received music instruction an average of 75 minutes per week (U.S. Department of Education, 1995).

The same U. S. Department of Education report (1995) showed that drama and theater as well as dance seemed to be less represented in elementary schools. Fifty-seven percent of schools surveyed reported that no dance programs were offered at their schools. Twenty percent of schools did not offer dramatic arts instruction. The remainder of the schools surveyed had some degree of dramatic arts. While only 8% of the dramatic arts were taught by drama specialists, 16% of the schools reported that dramatic arts were

taught during the language arts curriculum. Fifty-six percent of classroom teachers integrated the dramatic arts into their curriculum in other subject areas to assist in the instruction of those subjects.

### Purpose of the Study

The purpose of this study was to examine the role of the arts in student success within academic disciplines. The researcher examined the role of the arts as entry points into the academic curriculum.

Eisner (1998) stated that the arts should not be included in the curriculum simply as a means to improve academic achievement. He noted, "When such contributions [to other academic fields] become priorities, the arts become handmaidens to ends that are not distinctively artistic and in the process undermine the value of the art's unique contributions to the education of the young (p. 15)." Eisner purported that three hierarchical tiers exist in the outcomes of arts education. The first tier is comprised of those outcomes that are directly related to the subject matter that the particular art program is designed to teach. In other words, the students who participated in pull-out arts programs with certified teachers would be expected to meet certain criteria or standards within the arts programs themselves. The second tier is concerned with arts-related outcomes. These outcomes pertain to the perception and comprehension of aesthetic features in the general environment. This second tier would be most closely aligned with the integrated arts programs included in the classroom instruction. The final tier is considered the ancillary outcomes of arts education. These outcomes are those that Eisner views as skills within the arts that may be transferred to non-arts tasks. Eisner's

concern was that schools looking to the arts to boost academic achievement often mistake the third tier for the most important aspect of the arts.

Eisner (1998) did acknowledge contributions that the art classes may make to the education of the whole child. First, students may learn to transform their feelings and ideas into an art form that may be shared with others to convey a message. Second, students may become aware of aesthetic qualities in art as well as in life. Students may come to appreciate beauty not only in museums, but in the world in which they live. Finally, the connection between content and form of an art piece parallels the art and culture in which it was created. Therefore, students are able to gain perspectives of historical time periods through the arts.

Catterall (1998) recognized the theoretical foundation that representation is how people learn and how they express their understandings. The arts give people a way to express themselves through a visual, auditory, or kinesthetic form of representation. He responded to Eisner's criticism of the arts as being used only by schools to promote academic success. Catterall stated that Eisner did not comment on studies that indicate that students enrolled in some types of arts programs promoted some degree of academic success in other subject areas.

Catterall (1998) proposed two ways of using the arts to promote academic success. The first way was learning in the arts. The skills gained from learning in the arts are those skills gained from taking music or arts classes. Learning through the arts referred to the types of learning that takes place when the arts are integrated into the other subject areas to enhance instruction. Catterall (1998) suggested that students who learn in the arts as well as those who learn through the arts will experience an increase in

academic success. He argued that the skills that Eisner (1998) purported would be enhanced in the arts such as imagination, recognition of multiple perspectives, and exploration would indeed be transferred to the increase of academic success to some extent.

### Justification for the Study

Through this study the researcher attempted to recognize the effects of the arts on academic achievement. By defining the role art plays, the researcher attempted to suggest how the arts should be integrated into the classroom curriculum. Throughout history, the arts have held varying roles within the schools. While other disciplines such as science, social studies, language arts, and mathematics have continually played a role in the academic development of students, the arts have gained and lost popularity throughout the history of education.

Berube (1999) reviewed the historical issues involving the arts. At the birth of progressive education, John Dewey proposed that learners should experience activities that would promote (a) intellect, (b) moral sense, (c) social awareness, and (d) aesthetic sense. This theory gained popularity and was embraced by private schools serving affluent families as well as progressive educators who began arts programs in schools. Some districts were more willing than others to offer these programs. However, with the launching of Sputnik came the crashing of the arts programs. Americans became consumed with mathematics and science education and saw the arts simply as frills. That belief still exists today.

School officials realize the importance of educating students to become active, self-motivated learners, collaborative workers and risk takers (Aprill, 2001). Students

also should have the conviction to stand up for what they believe (Perrin, 1994). If this is indeed what is important to the education of the future work force, then the arts are needed in education since they develop these necessary skills. Artists learn by doing. Traditional schools enable students to be passive learners who watch while their instructors demonstrate a concept (Perrin, 1994; Hamblen, 1997).

Passivity leads to boredom and a sense of uselessness. If students are inundated daily with passive learning experiences, these will become strong obstacles to their academic success (Greene, 1991). Surace (1992) reports that the arts may actually solve some of these academic problems as they offer activities that are motivating to the students, that cause students to think in creative ways, and that may merge language and social skills (Surace, 1992).

Catterall (1998) suggested that students not only learn in the arts, but through the arts. Students who are exposed to discrete arts programs develop skills that enable them to become literate in that particular art form. In addition, those skills may transfer into the academic setting. Students who learn through the arts are afforded the opportunity to learn subject matter with the arts as an entry point. Teachers may use music, visual arts, or drama to introduce or strengthen an academic concept. This type of instruction is integrated into the general curriculum.

Within the instruction through the arts, Collins and Chandler (1993) reported that a difference exists between art infusion and art immersion. When educators learn the possibility of arts improving academic achievement, some want to infuse their classrooms with art. In other words, these teachers want to add quick, simplistic activities that they believe to be art into their daily routines. These activities may be simple craft projects or



songs that are taught to meet the needs of art infusion. Collins and Chandler further stated that this type of instruction trivializes the arts and gives the perception that they are second rate, additions that can be quickly eliminated with no real damage to the remainder of the curriculum.

Instead Collins and Chandler (1993) proposed arts immersion. In arts immersion, students experience arts as they are interwoven into their daily studies. Art is not considered a product, but a holistic experience where the arts are seamlessly integrated into the rest of the curriculum. The arts are used to give students a meaningful way to express their knowledge. The arts also provide students with multiple perspectives into a concept. They are used to enhance inquiry-based learning, and they can be applied broadly across disciplines.

Study in the arts promoted (a) creative behaviors, (b) critical thinking, (c) self-awareness, (d) social relations, and (e) increased test scores in academic discipline areas (Hamblen, 1997). In addition to these outcomes, Burton, Horowitz, and Abeles (2000) found that the skills learned in the arts transfer to other subject areas and lead to (a) creative thinking, (b) fluency, (c) originality, (d) focused perception, (e) imagination, (f) risk-taking, and (g) task persistence. The arts provided a dynamic interaction to instruction in that the arts could be used to enhance knowledge in other subject areas. These researchers stated that an interactive relationship should exist between the arts and academics.

A study published by Harvard University entitled “Reviewing the Education and the Arts Project (REAP)” (Winner & Hetland, 2000) examined articles that claimed to illustrate a relationship between arts and academic achievement. The study suggested

mixed findings. The researchers examined 11,467 articles, conference papers, reports, theses, books, and unpublished papers and data. Of these, 188 reports were pulled for research purposes. These reports investigated the relationship between one or more art forms to one or more academic areas.

The researchers conducted a set of 10 meta-analyses on the reports selected. These analyses were used with studies that addressed similar claims to academic success. The purpose of these analyses was to ascertain the causal comparison of the arts to enhanced academic performance. The researchers concluded that three areas showed clear links to academic outcomes. First, a causal relationship was found to exist between listening to music and spatial-temporal reasoning. However, this relationship was found to be temporary. Next, a relationship was found between learning to play music and spatial reasoning. The researchers noted that while this was a strong connection, educators should consider how spatial skills are fostered throughout the curriculum. If students' spatial skills were indeed enhanced, then how could teachers take advantage of these increased spatial skills within the curriculum? Finally, a causal link was found between classroom drama and verbal skills. This link not only involved a connection to the texts enacted by the students, but to new reading material as well. Therefore, the researchers found that the verbal skills fostered by dramatic reenactments transferred to new material. As a result, a variety of suggestions for further research evolved.

Hetland and Winner (2001) suggested that, based on the findings of the REAP; researchers should investigate the role of the arts as successful entry points into academic disciplines. They stated that what was needed was a comparison of students who have been taught the same subject matter with and without the entry points of the arts.

## Theoretical Framework

Howard Gardner (1999b) proposed that educators are not meeting the needs of their students. He noted that school systems are quick to judge students' performance in schools largely on standardized test scores. These tests typically assess only two of his proposed multiple intelligences. If students are strong in linguistic and logical-mathematical intelligences, they tend to test well and are deemed intelligent. Because standardized tests drive the curriculum, educators are motivated to teach to these two intelligences as well. Students who are strong in these traditional intelligences fair well in schools, while those who demonstrate competencies in the other intelligence areas are frustrated and are deemed slow learners or less than intelligent.

In addition to linguistic intelligence, a strength in reading and writing and logical-mathematical intelligences, a strength in mathematical reasoning, Gardner (1999b) purported the following six additional intelligences: (a) interpersonal intelligence, the ability to communicate and work effectively in group situations; (b) intrapersonal intelligence, the ability to reflect upon and respond to the actions of oneself; (c) musical intelligence, the ability to recognize rhythmic patterns; (d) bodily-kinesthetic intelligence, the ability to use one's gross and fine motor skills effectively; (e) naturalist intelligence, the ability to classify flora and fauna; and (f) spatial intelligence, the ability to visualize relationships. These six intelligences are embedded in the arts. If the instruction in schools were built around enhancing all of these intelligences instead of the first two mentioned, Gardner suggested that more students would find success in academics.

The intelligences identified by Gardner should not be used to stereotype or to track students. Instead, they could be used as entry points to hook students into learning. While Gardner's intention was not to teach to the child's strength, but to enhance the learning of the whole child, Gardner suggested finding the intellectual strength of each student so that the appropriate aesthetic entry point can be used to foster the introduction of a concept. Gardner trusted that if students were taught in ways that would strengthen all intelligences, they would have more success in academics. Because these intelligences are derived from the arts, teaching through the intelligences parallels teaching through the arts.

Eisner (1998) agreed that the arts were important components of schools. However, he was not convinced that those skills taught in arts classes that are desired by academicians were transferred into other subject areas. He discouraged philosophers from touting this theory because he was concerned that educators will see arts only as a means of academic achievement. Eisner purported that arts will lose their identity or become second rate or trivial to the education of children. He suggested that the arts should be seen as an end in themselves rather than a means to an academic end. While he did not wholly deny that any transfer exists between the arts and academics, he noted that in a hierarchy of importance, this relationship would be the lowest.

Catterall (1998) responded to the research findings of Eisner by agreeing that arts should be important in their own right. However, he, like Gardner, noted the benefit of the arts in the classroom environment as representations to academic concepts. He classified this type of learning as learning through the arts. He also stated that learning can be enhanced in the arts. This type of learning paralleled with Eisner's first tier.

However, he criticized Eisner for his lack of willingness to embrace the transfer of the skills learned in the arts to academic achievement. While he admitted more studies were needed to substantiate this relationship, he asserted that educators and theorists should be open to this possibility as this could indeed be the link to academic success for students.

The purpose of this study was to examine the role that learning in the arts and through the arts (visual, dramatic, musical, and dance) had on the academic achievement of fourth grade students in Louisiana. Louisiana Educational Assessment Program for the Twenty-first Century (LEAP 21) scores were examined from students who attend schools whose faculty members have been trained by the Louisiana Institute for Education in the Arts (LAIEA).

The LAIEA was established in 1997 as a satellite institute from the Southeast Center for Education in the Arts at the University of Tennessee at Chattanooga. It was designed to provide regional training in a comprehensive arts education to principals, classroom teachers, art specialists, and artists. A six-day intensive training is offered one time each summer in New Orleans. During this institute, participants are trained in how to integrate the arts, including dramatic arts, musical arts, visual arts, and dance into the academic disciplines of the classroom. The LAIEA is now supported by the John F. Kennedy Center for the Performing Arts and the Louisiana Board of Elementary and Secondary Education (K. Hunicke, personal communication, March 4, 2002).

### **Research Questions and Hypotheses**

The following is a list of research questions used to focus this study:

1. Do Louisiana fourth grade public school students who attend schools where teachers have been trained by the Louisiana Institute for Education in the Arts

(LAIEA) score significantly higher on the language arts section of the Louisiana Educational Assessment Program for the Twenty-first Century (LEAP 21) than students in matched pair non-participating schools?

2. Do Louisiana fourth grade public school students who attend schools where teachers have been trained by the Louisiana Institute for Education in the Arts (LAIEA) score significantly higher on the mathematics section of the Louisiana Educational Assessment Program for the Twenty-first Century (LEAP 21) than students in matched pair non-participating schools?
3. Do Louisiana fourth grade public school students who attend schools where teachers have been trained by the Louisiana Institute for Education in the Arts (LAIEA) score significantly higher on the science section of the Louisiana Educational Assessment Program for the Twenty-first Century (LEAP 21) than students in matched pair non-participating schools?
4. Do Louisiana fourth grade public school students who attend schools where teachers have been trained by the Louisiana Institute for Education in the Arts (LAIEA) score significantly higher on the social studies section of the Louisiana Educational Assessment Program for the Twenty-first Century (LEAP 21) than students in matched pair non-participating schools?

The following is a list of the research hypotheses for this study:

H<sub>1</sub>. A significant difference exists between the mean index scores of the language arts section of the Louisiana Educational Assessment for the Twenty-first Century (LEAP 21) for students who were enrolled in schools where teachers were trained by the Louisiana

Institute for Education in the Arts (LAIEA) and the mean index scores in matched pair non-participating schools.

H<sub>2</sub>. A significant difference exists between the mean index scores of the mathematics section of the Louisiana Educational Assessment for the Twenty-first Century (LEAP 21) for students who were enrolled in schools where teachers were trained by the Louisiana Institute for Education in the Arts (LAIEA) and the mean index scores in matched pair non-participating schools.

H<sub>3</sub>. A significant difference exists between the mean index scores of the science section of the Louisiana Educational Assessment for the Twenty-first Century (LEAP 21) for students who were enrolled in schools where teachers were trained by the Louisiana Institute for Education in the Arts (LAIEA) and the mean index scores in matched pair non-participating schools.

H<sub>4</sub>. A significant difference exists between the mean index scores of the social studies section of the Louisiana Educational Assessment for the Twenty-first Century (LEAP 21) for students who were enrolled in schools where teachers were trained by the Louisiana Institute for Education in the Arts (LAIEA) and the mean index scores in matched pair non-participating schools.

For statistical purposes, the following is a list of the null hypotheses:

H<sub>1</sub>. No significant difference exists between the mean index scores of the language arts section of the Louisiana Assessment for the Twenty-first Century (LEAP 21) for students who were enrolled in schools where teachers were trained by the Louisiana Institute for Education in the Arts (LAIEA) and the mean index scores in matched pair non-participating schools.

H<sub>2</sub>. No significant difference exists between the mean index scores of the mathematics section of the Louisiana Assessment for the Twenty-first Century (LEAP 21) for students who were enrolled in schools where teachers were trained by the Louisiana Institute for Education in the Arts (LAIEA) and the mean index scores in matched pair non-participating schools.

H<sub>3</sub>. No significant difference exists between the mean index scores of the science section of the Louisiana Assessment for the Twenty-first Century (LEAP 21) for students who were enrolled in schools where teachers were trained by the Louisiana Institute for Education in the Arts (LAIEA) and the mean index scores in matched pair non-participating schools.

H<sub>4</sub>. No significant difference exists between the mean index scores of the social studies section of the Louisiana Assessment for the Twenty-first Century (LEAP 21) for students who were enrolled in schools where teachers were trained by the Louisiana Institute for Education in the Arts (LAIEA) and the mean index scores in matched pair non-participating schools.

In order to ensure clarity a list of terms and definitions relating to the study were included. The following is a list of these terms and their definitions:

#### Definition of Terms

*Academic achievement*- defined by the researcher for this study as the mean student index score on each of the four sections of the LEAP 21.

*Aesthetics*- "...discovering and understanding the varieties of meanings and values of art" (Wilson, 1997, p. 91).



*Ancillary outcomes of art education-* "...those outcomes like the effects of arts education on student performance in reading, math, or other academic subjects. Ancillary outcomes of art education pertain to outcomes that transfer skills employed in the perception, creation, and comprehension of the arts to non-arts tasks" (Eisner, 1998; p. 13).

*Arts-* "...broadly defined as the visual arts, music, dance, drama, creative writing, film, television, and the emerging technological arts" (Darby & Catterall, 1994; p. 299).

*Arts-based outcomes-* "...outcomes that are directly related to the subject matter that and arts education curriculum was designed to teach including those outcomes pertainint to the performance within the art form" (Eisner, 1998; p. 12).

*Art criticism-* "...responding to and making judgments about the properties and qualities that exist in works of art" (Wilson, 1997, p. 91).

*Art history-* "...acquiring knowledge about the contributions artists and art make to culture and society" (Wilson, 1997, p. 91).

*Art production-* "...making art; learning to express ideas and feelings in visual form" (Wilson, 1997, p. 91).

*Arts-related outcomes-* "...outcomes that pertain to the perception and comprehension of aesthetic features in the general environment. (Eisner, 1998; p.12).

*Bodily-kinesthetic intelligence-* "...entails the potential of using one's whole body or parts of the body (like the hand or the mouth) to solve problems or fashion products" (Gardner, 1999b; p. 42).

*Discipline-based arts education-* "...a comprehensive approach to art education taught most effectively by integrating content from four basic disciplines- art making, art

history, art criticism, and aesthetics into a holistic learning experience” (Wilson, 1997; p. 10).

*Entry point-* “...the pedagogical decision made to best introduce a topic or concept. The theory of multiple intelligences yields an abundance of ways in which to broach a topic” (Gardner, 1999a; p. 187).

*Improvisation-* “...an unrehearsed moment ‘on stage’”(Heller, 1995; p. 47).

*Intelligence-* “...a biopsychological potential to process information that can be activated in a cultural setting to solve problems or create products that are of value in a culture”(Gardner, 1999b; pp. 33-34).

*Interpersonal intelligence-* “...denotes a person’s capacity to understand the intentions, motivations, and desires of other people and, consequently, to work effectively with others” (Gardner, 1999b; p. 43).

*Intrapersonal intelligence-*“...the capacity to understand oneself, to have an effective working model of oneself-including one’s own desires, fears, and capacities-and to use such information effectively in regulating one’s own life” (Gardner, 1999b; p. 43).

*Interdisciplinary instruction-* “...instruction that connects art forms (for example art and music) and instruction that connects an art form to other subject areas (for example, art and social studies)” (Roucher & Lovano-Kerr, 1995; p. 21).

*Language arts section of LEAP 21-* the section of the LEAP 21 that encompasses the following skills: (a) reading and responding to fiction, non-fiction, poetry, and short passages; (b) writing from a prompt and proofreading; and (c) using information resources. The questions in the language arts section are presented in a multiple choice

format as well as short answer and extended constructed responses (Louisiana Department of Education, 1999).

*Learning in the arts-* "...skills gained from taking music or arts classes" (Catterall, 1988; p. 11).

*Learning through the arts-* "...using the arts to teach academic curriculum; for example, using historical paintings or dramatizing key historical moments to learn about the past" (Catterall, 1998; p. 11).

*Linguistic intelligence-* "...involves sensitivity to spoken and written language, the ability to learn languages, and the capacity to use language to accomplish certain goals" (Gardner, 1999b; p. 41).

*Logical-mathematical intelligence-* "...the capacity to analyze problems logically, carry out mathematical operations, and investigate issues scientifically" (Gardner, 1999b; p. 42).

*Louisiana Educational Assessment Program for the Twenty-First Century (LEAP 21)-* "a criterion-referenced testing program that aligns with the K-12 content standards for Mathematics, English/Language Arts, Science, and Social Studies. This test assesses student performance relative to specific benchmarks established in the state standards for curriculum development.. These tests assess a student's complex reasoning skills as well as knowledge and application of information" (Louisiana Department of Education, 1999).

*Mathematics section of the LEAP 21-* the section of the LEAP 21 that encompasses the following skills: (a) number and number relations; (b) algebra; (c) measurement; (d) geometry; (e) data analysis and probability; and (f) patterns, relations,

and functions. The questions in the mathematics section are presented in both a multiple choice and a constructed response format (Louisiana Department of Education, 1999).

*Louisiana Institute for Education in the Arts (LAIEA)*- "...a major provider in the state [of Louisiana] of comprehensive professional development programs in the arts and operates year-round through its summer institutes, LAIEA-on-Wheels, and ArtsBridge programs" (Eiswirth, J., 2000).

*Musical intelligence*- "...skill in the performance, composition, and appreciation of musical patterns" (Gardner, 1999b; p. 42).

*Naturalist intelligence*- "...demonstrated expertise in the recognition of the numerous species-the flora and fauna-of his or her environment" (Gardner, 1999b; p. 48).

*Pantomime*- "...acting without words. It is communicating with gesture or movement and facial expression instead of talking" (Heller, 1995; p. 29).

*Science section of the LEAP 21*- the section of the LEAP 21 that addresses the following concepts: (a) science as inquiry; (b) physical science; (c) life science; (d) earth and space science; and (e) science and the environment. The questions in the science section are presented in a multiple choice format in addition to short answer and constructed response formats (Louisiana Department of Education, 2000).

*Sign systems*- "...communication systems such as art, music, drama, mathematics, and language. We use them to construct and express meaning. These systems resemble language in that each comprises forms of representation and conventions" (Berghoff, 1998, p. 520).

*Social studies section of the LEAP 21*- the section of the LEAP 21 that addresses the following concepts: (a) geography; (b) civics; (c) economics; and (d) history. The

questions in social studies section are presented in a multiple choice as well as a constructed response format (Louisiana Department of Education, 2000).

*Spatial intelligence-* "...features the potential to recognize and manipulate the patterns of wide space as well as the patterns of more confined areas" (Gardner, 1999b; p. 42).

*Transfer-* "...the impact of learning in one context on performance in other significantly different contexts" (Roucher & Lovano-Kerr, 1995, p. 23).

The following chapter presents a review of literature regarding the topic of the arts and the role of the arts in schools today. The researcher will contrast learning in the arts with learning through the arts as well as identify ancillary academic outcomes of art instruction. In addition, the researcher will discuss the use of artistic entry points into the academic disciplines.

## CHAPTER 2

### Review of Literature

The purpose of this review was to examine the correlation between the arts and academic achievement. The question of the correlation between exposure to the arts and student achievement within the academic disciplines such as mathematics, language arts, science, and social studies has mixed reviews (Winner & Hetland, 2000). Writings related to this topic were typically theoretical in nature. Prominent theorists and practitioners such as Howard Gardner, James Catterall, and Eliot Eisner argued that arts were integral to the education of the “whole child” (Catterall, 1998; Eisner, 1998; Gardner, 1999a). These noted theorists recognized the lifelong benefits the arts have to offer the students.

### Development of the Arts in Schools

In order to appreciate the role of the arts in the modern curriculum, one must note the role that art has played in the history of education. Darby and Catterall (1994) cited the chronological events that led to modern thinking on the arts in education. They began their perspective with Horace Mann in the late 1800s. Mann demanded that visual arts and music be taught in the common schools in Massachusetts. Next, John Dewey posited the correlation between instruction in the arts and cognition.

Bresler (1995) noted that the roots of integration of the arts into the curriculum can be traced back as far as Dewey with his views on progressive education. Bresler further noted that during the 1930s and the 1940s behaviorism was introduced and gained popularity within school systems. Bresler continued by stating that Vygotsky challenged this belief and insisted that students constructed cognitive knowledge through the active process of learning, and that the arts were integral to that process.

### *The Arts in Schools Today*

J. Davis (1999) discussed eight ways that the arts are included in today's school settings. The first, arts-based, involved the arts as a core subject in the school. The skills taught through the arts are transferred to skills in other academic areas. The second, arts injected or infused, included those arts activities that are integrated into the general curriculum in order to enhance a particular study. Arts included was the third type of integration. This involved art instruction being offered alongside other subjects with or without integration into these subjects. Arts expansion was the fourth approach. Through this approach the arts were taken outside the school setting. The students explored arts at museums, performances, or concerts. The fifth, arts professional, was designed to train students who are seriously preparing for careers in arts.

The arts extra approach, the sixth, referred to the use of the arts in an ancillary role. Students who participated in extra-curricular arts activities such as school plays or piano lessons were involved in the arts extra approach. The aesthetic education model referred to the type of instruction where the arts were viewed as ways of knowing and where students were encouraged to construct their knowledge. These first seven roles may exist alone or in combination with one another. Davis cited that the eighth role, arts

cultura, was based on the premise that the arts connect the cultures of the world. This model also implied that students can be empowered to create their own meaning of content through the arts. This model encouraged risk-taking, critical thinking, and diligence.

J. Davis (1999) further noted that the arts helped to emphasize what was learned in schools. They should be used as a means of making meaning of all that is learned in schools. The arts may be used as a response to what has been learned. They helped to synthesize what had been taught in schools. In order for interdisciplinary instruction with the arts to be successful, discipline experts must share in the interest of the arts as a means of communication and of the traditions in the arts.

M. Davis (1999) noted that because art is typically taught as a separate subject providing the classroom teacher with a planning time, little collaboration exists between the art teacher and the classroom teacher. Because art and classroom teachers are not afforded the time to collaborate, arts-integrated instruction is difficult to plan and implement. Without this type of integration, students view school as a place where they learn isolated, unrelated facts.

### *Arts Programs in Other Countries*

Schools in Europe and Asia have infused the arts (especially music) into their educational organizations (Kelstrom, 1998). Japanese students receive instruction in choral and instrumental music from elementary through secondary years. The Netherlands has had a mandatory art and music curriculum in their schools since 1968. Hungarian students are involved with a sequential music program for vocal and instrumental training twice a week for the first eight years of schooling. Students in



secondary schools may elect to participate in a music program daily. These students receive training on a different musical instrument each year. According to Kelstrom, these three countries have been ranked at the top of a list of seventeen countries for scientific achievement for secondary students. Universities in England have departments of art education and drama and theater in their colleges of education. Pre-service teachers must take classes in these departments as part of their curriculum for graduation. Teachers in England use this medium to teach history and to advance both interpersonal and intrapersonal communication (Catterall, 1998).

While in the United States the arts are typically connected with those who are particularly gifted in aesthetics, the inverse is true in foreign countries such as China and Germany (Perrin, 1994). These countries offer arts programs to all children. The assumption is that students can become proficient in the arts just as they can become proficient in other disciplines. Perrin (1994) also noted that because the arts are not widely offered to American students, many of this country's potential artists remain unidentified.

### Roles of Art in Education

Learning through the arts such as the use of drama to re-enact historical events and the use of paintings to introduce and analyze life in historical periods allow students to learn beyond the rote recall of information (Catterall, 1998). In order to teach for true understanding, teachers should consider activities that allow students to appreciate and apply (both in and out of the classroom) newly acquired information. The curriculum should be designed to enable students to apply what has been taught. Through this application, higher order thinking skills, risk taking, and creativity were enhanced. Art

and writing around historical themes, for example, were useful activities that enabled students to apply the historical content they had acquired in a constructive and meaningful way (Brophy, 1992).

Some educators viewed the integration of the arts into the curriculum as simple activities that may be used as extras or time fillers. This misrepresentation or simplistic view of the arts tended to trivialize their importance. Students should be immersed in the arts throughout their day (Collins & Chandler, 1993). The projects should be an extension of their understanding of the curriculum content, not merely a color sheet for early finishers.

While the arts should be recognized as subjects that can stand alone and be important in their own rights, parents and educators should also embrace the concept that the arts can enhance true understanding of a content area (Oddleifson, 1994). Aprill (2001) noted that the arts may be used as entry points for content area instruction. He described the arts as a symbol system for other subject areas. He also suggested that art teachers and content teachers be given time to plan together to ensure that the integration of the arts into the classroom is successful.

### *Discrete Arts Programs*

Eisner (1998) proposed a three-tiered system of outcomes concerning art education. First, the Arts-based Outcomes of Art Education were used to assess the art curriculum taught in the art program. Second, Arts-related Outcomes of Art Education consisted of those aesthetic features that students transfer outside of the school day within their own environment. Third, Ancillary Outcomes of Art Education were those outcomes that affect the general curriculum. The goals of discrete art programs should

lie within the first two tiers. To proclaim that Ancillary Outcomes should be the most important goal of arts education would lower the worth of the arts programs in schools. Arts should not be a means to a cognitive end but rather an end in themselves (Eisner, 1998; Oddleifson, 1994). Aprill (2001) concurred with Eisner stating that arts should be taught for their own merit. While he advocated the use of the arts as an entry point to other subject areas, he realized the danger of inflated claims on its contribution to academic achievement. Aprill acknowledged that if arts programs are adopted simply for the gains of academic success, they would be disposed of just as quickly if the signs of increased test scores are not visible.

In Eisner's opinion, the arts should make a difference both in students' school environments as well as in their environments beyond school. He proposed the following four outcomes that arts programs should meet:

Students should acquire a feel for what it means to transform their ideas, images, and feelings into an art form.

Arts education should refine the student's awareness of the aesthetic qualities in art and life.

Arts education should enable students to understand that there is a connection between the content and the form that the arts display and the culture and time in which the work was created.

Finally, I wish to identify a particularly important set of outcomes for arts education. This one pertains to dispositions that are difficult to assess, let alone measure, but they are dispositions that *appear* to be cultivated through

programs that engage students in the process of artistic creation. I speak of dispositional outcomes such as the following:

- A willingness to imagine possibilities that are not now, but which might become.
- A desire to explore ambiguity, to be willing to forestall premature closure in pursuing resolutions.
- The ability to recognize and accept the multiple perspectives and resolutions that work in the arts celebrate. (Eisner, 1998, pp. 14-15)

The art disciplines provide necessary skills all children should acquire differing means of communication within cultures and time periods (Hatfield, 1998). The knowledge gained from arts programs include the analysis of differing means of communication within cultures and time periods. Hatfield suggested that art programs in schools should have a clear, substantial focus that would include the inculcation of higher order thinking skills and complex problem solving. Resources must also be used to encourage professional development and to align of the curriculum to meet these high standards for the arts. In order to provide the quality art programs necessary for these needs to be met, qualified art teachers should be hired (Day, 1998).

### *The Arts Integrated Into the Classroom Setting*

Bresler (1995) proposed four styles of arts integration in classrooms. First, she defined the subservient approach. Educators who endorse this approach used the arts as a spice or an extra for their curriculum. This style of integration offered little or no outside support from art experts. This approach was likened to a craft-like approach

where a quick art activity was used as a filler for a particular content area. The co-equal cognitive integration approach also involved the arts being integrated with other aspects of the curriculum. However, with this approach, students were required to use higher order thinking skills and aesthetic qualities to gain further understanding of a particular academic concept. An example of the co-equal cognitive integration approach would include studying composers and music that paralleled historical events. The third approach was the affective approach. Through this approach students were immersed in art while the art complimented the classroom curriculum. Background music, reactions to music and art pieces, and the arts as self-expression were three examples of this type of integration. The fourth approach was social integration. This approach and the subservient approach were the two most common approaches used in schools. The social integration was performance-based. This approach complemented the curriculum only insofar as it is used as a vehicle to increase participation in parental involvement activities. School plays and performances were examples of this particular integration style.

Catterall (1998) suggested that educators should consider the involvement of the arts in schools as two-fold. First, learning through the arts would involve activities such as the dramatization of stories or historical events and the use of paintings to investigate different aspects of time periods. In contrast, learning in the arts would include specific skills acquired through art classes such as music, visual arts, or drama. Clinard and Foster (1998) provided evidence of these two aspects of art education as they describe the involvement of Montana's Framework for Aesthetic Literacy. These standards included the goal that students will learn to perceive and analyze information while

working toward connecting arts to cultures and to other content areas. The arts also were viewed as instrumental in enhancing students' communication while increasing their ability to interact and to reflect.

### *The Arts and Mathematics*

In a project titled "Escher's World," named after M. C. Escher, a Dutch printmaker and master visual mathematician, math and visual-spatial activities were integrated while mathematics and the visual arts kept their respective identities (Cossentino & Shaffer, 1999). During this project high school students explored symmetry and composition from both a mathematical and an aesthetic perspective. Upon completion of this project, students were able to describe works of art in a meaningful way. In addition, students' spatial skills were enhanced.

In addition to the relationship between spatial and logical mathematical intelligences, there was also a strong relationship between spatial and musical intelligences. Lois Hetland (2000) explored the Mozart Effect to determine the specific connections between these two intelligences. She stated that the Mozart Effect resulted in students' ability to visually rotate a picture or symbol of an object. This research supported that this effect was not limited exclusively to Mozart but to other composers as well. However, not all music enhanced this effect. The particular properties of music that enhanced the spatial skills of participants in this study are still being explored.

### *The Arts and Language Arts Instruction*

Smith and Herring (1996) described literature activities that provide multiple entry points for a variety of students. They argued that in order to make literature meaningful, students must be given aesthetic opportunities to respond to the text. Smith

and Herring further shared five activities designed to create an active learning environment. First, students used expressive writing to respond to the themes in the novel. Next, students engaged in creative movement to maneuver through the setting of the story. Third, the students were encouraged to use the visual arts to illustrate their feelings or knowledge for the book. Fourth, students used exploratory music to respond to a segment of the text. Through this activity students selected a portion of the text to share. Once they had made their selections, the students chose music that would reflect the mood of the passage. Finally, they played the music or provided sound effects in the background while the passage was read orally. The fifth activity involved the use of informal drama. This was a type of improvisation theater in which pairs of students re-create dialogue from the text. While Smith and Herring did not provide quantitative data to defend their project, they did provide comments from students after the activities. Each of the students' responses indicated that their comprehension of the text was increased and that their motivation for reading was enhanced.

Mini-performances were dramatic recreations of literature using drama, music, and movement (Morado, Koeing, Wilson, 1999). These mini-performances were primarily used with at-risk kindergarten, first, and second grade students. Because these performances were geared toward spatial, bodily-kinesthetic, and musical intelligences, many students who have not had much success with the written word could find an entry point in one of these intelligences, thus increasing the students' desire to read more. The results of the mini-performances were positive. Students who had not had success in the linguistic area of school suddenly felt successful, as they had recreated a story through dramatics. In some cases students who had participated in these mini-

performances built stronger working relationships with their instructors, which led to a more productive school experience.

Edwards and Craig (1990) stated that drama was an effective learning tool as students became actively engaged in the project. This research team investigated the success of an after-school drama program in which the teacher employed not only dramatics but visual artwork techniques as well. The after-school teacher, Sean, who was a more traditional classroom teacher, began his instruction in this drama program in a more teacher-directed fashion. What he soon began to realize, however, was that the students needed to be more empowered in their dramatic activities. Once he encouraged students to visualize through their illustrations, their stories and scripts became more elaborate. As Sean allowed the students to use more of their authentic ideas as opposed to commercially constructed dramatic activities, he noticed that students became more engaged and focused on their learning.

Drama also can be used to enhance intrapersonal intelligence. McMaster (1998) described drama as a way to develop metacognitive strategies. While students are dramatizing a particular narrative, they are continually analyzing and evaluating their work to decide whether they are convincing enough in their role. Teachers could assist in this strategy by providing questions that help the students reflect on their performances and to plan to improve future performances. Students employed the use of visualizing as they planned for dramatic reenactments of a particular part of the text. Because visualization was an effective strategy to store information for retrieval, this process inevitably aided in comprehension.



Elliot Eisner (1992) stated that while detachment and distance allow people to think objectively and not become emotionally involved with decisions in their day-to-day occupations, these two characteristics contribute little to the education of students. Much of the curriculum taught in our schools tended to lend itself to these characteristics. Students are not asked to get emotionally involved. They are left distant and remote from the isolated facts they are asked to recall. Instead, Eisner suggested that the more intelligences the students were required to use, the deeper their understanding of the content presented.

### *Dramatic Arts Integrated Into Academic Disciplines*

Art itself has been studied in relation to discipline-based subjects such as language, history, science, civics, and math (Day, 1998; Hamblen, 1997). Drama, because its requirement of active student involvement, encouraged risk-taking while allowing students the opportunity to transform themselves into characters representative of the material they had read (DuPont, 1992; Hamblen, 1997). This enabled students to claim ownership to the newly processed information in addition to becoming a tool for application for the new knowledge. Drama encouraged the use of skill of writing, speaking, and performing as well (Martin, 1998). The art of drama lies within the process as opposed to the product. It is through the process that the students become actively involved. Drama should not be outgrown. This form of art should be embraced by people of all ages (Warren, 1993).

Readers Theater is a dramatic technique used to facilitate reading instruction. Through the reenactment of the story, the students not only become familiar with the plot, setting, characters and other story elements, but the fluency of the story as well.

Students who were instructed using this technique scored significantly higher on tests of reading fluency than those that did not (Martinez, Roser, & Strecker, 1998).

Heller (1995) further stated that dramatic activities provide students with authentic opportunities for students to apply what they have learned and to integrate this knowledge with other subject areas within their curriculum. Students learned best by a multi-sensory approach to learning. Dramatizing afforded students opportunities to see, hear, and create learning opportunities. Dramatic activities also enhanced students' critical thinking skills. As Heller states, "Drama activities help transform school from a place where we tell students what to think to a place where we help them experience thinking (Heller, 1995; p. 13)."

Heller suggested that in order to create and execute dramatic performances, students must learn a concept in more detail. The teacher was charged with the direction of dramatic performances. In order for these performances to indeed enhance instruction the teacher should be familiar with the steps of the dramatic process. First, the teacher reinforced to students the importance of their learning and showing what they know as they transfer content into drama. This required the students to conduct extensive research.

The teachers should be responsible for setting time and space limits while allowing the students to initiate their dramatic work within those limits. Once the students have completed their performance, the class should be debriefed. This debriefing was necessary to ensure that all students had learned from the dramatization.

### *Music to Enhance Classroom Instruction*

Page (1995) suggested that music was necessary to strengthen memory and to increase attention spans. Because the sense of hearing is one of the first senses developed in children, babies actually begin to hear sounds (primarily high notes) in the womb. Although low sounds such as the mother's heartbeat and low notes are not heard, they are felt by the baby and provide a steady rhythm. Page further stated that the act of listening is of the utmost importance in the school setting. Students who employed active listening gain more knowledge than those students who did not employ such strategies. Students who have been exposed to learning through music are more attentive listeners, thus more successful students.

Page (1995) recognized the rhythms prevalent through the disciplines. Rhythm existed in reading, math, problem solving, and intrinsically within students as they monitor their own comprehension and attention span. Music aided in the flow of these rhythms. Teachers who recognize the existence and the importance of rhythms in their students' everyday classroom lives can plan their instruction accordingly to take advantage of these cycles. By using the concept of entertainment, which is the ability of one rhythm to imitate another rhythm, teachers can use music to smooth transitions in the classroom. Additionally, Page cited the examples of using music to create a classroom of learners who are unified in a rhythm and who are learning at a faster pace.

### *Visual Arts and Classroom Instruction*

Gee (2000) stated that because the arts are considered communication systems, students are able to construct new knowledge and use the arts to express it. Just as our spoken and written language is made up of parts of speech, the language of the visual

arts consists of a vocabulary known as the elements. These included line, texture shape, space, and color. Another component to the language of the visual arts is the principle of design. The principles of design include the following: (a) balance, (b) rhythm, (c) repetition, (d) pattern, (e) contrast, (f) theme, (g) variation, and (h) unity. Gee continues by noting that students should be exposed to this new language and encouraged to explore and experiment with these elements and principles of design in activities throughout the curriculum. The arts enhance instruction by allowing students to ask questions, explore for answers, and generate new questions.

### Arts to Construct Meaning

Students depended on the arts to construct meaning of the world around them (Berghoff, 1998). From early childhood experiences students have dramatized, drawn, danced, or sung about new material presented to them. While the arts are valued in the early childhood classroom, they are not as treasured in schools beyond that point. Schools may have arts programs in place for these upper grades, but the students were not taught that the skills learned through these programs can be transferred into the classroom as a tool to assist them to construct meaning of unfamiliar material.

The schools of Reggio Emilia in northeastern Italy are based on the constructivist philosophy that students must be given the opportunity to construct their own learning. Begun after World War II by a journalist named Loris Malaguzzi, the Reggio Emilia schools employ the arts as a means for the students to communicate their knowledge while they explore their world (Bresler, 1995; Gardner, 1999a).

James Catterall (1998) suggested that students construct meaning for themselves by creating representations. He stated that the traditional representations in schools are

verbal or visual. For example, students may write a report and draw a diagram to accompany it. Students should be given the freedom to choose their routes to their destination of meaning (Cossentino and Shaffer, 1999). Berghoff (1998) discussed the use of additional representations to be used by students in the classroom. These were called multiple sign systems. These systems are rooted in the arts. They are modes of communication other than the traditional spoken or written word. These sign systems included visual arts, music drama, language, and mathematics. Students may be able to construct meaning of new information if they are given the freedom to communicate the material through an alternative sign system that makes sense to them. In order for students to use these signs effectively, they must be used in the classroom as well as reinforced in the arts-disciplined based instruction. Knowledge can be gained in more than one way (Godfrey, 1992; Aprill, 2001).

Chilcoat (1991) described how the dramatic sign system can be infused into the history classroom. He wrote that students were given a selected historical time period to thoroughly research. The students were then asked to create a panorama to illustrate the time period. The audience was given a questionnaire to complete as the presentation was made. The students were required to dramatize events from their panorama. Chilcoat further noted that students were motivated to learn more about history because it became meaningful to them through this project. Students tended to remember the information from these projects more than they did information from tests. In an article by Clinard and Foster (1998) one student observed that when he studied for a test, he memorized material and forgot it as soon as the test was over. Yet, when he constructed a project the knowledge remained with him.

Warren (1993) stated that during the dramatic experience, children are constantly called on to solve problems and to create new plans. Through the dramatic communication system, students' ideas were valued as much as teachers' ideas. Students and teachers were regarded as equals. Edmiston (1993) cited that reflection was another important educational asset embedded within the dramatic arts. Reflection allowed the students to examine and to evaluate what they have produced. Students are then given time to alter their scripts or drama to meet their needs. Meaning is enhanced through reflection.

Literature comes to life through the arts. When students use the visual arts, dramatic reenactments, and group discussion, the text became meaningful to them (Hoyt, 1992). The teacher's role was to assist the students in finding the communication system that best meets their needs while introducing them to alternative forms of communication systems. In order to make sense of the written word, students should be encouraged to actively interact with it (Grainger, 1998). Teachers should move from the role of dispensers of knowledge into the role of facilitators of learning. The students were not merely receivers of the given information; they should be encouraged to construct meaning for themselves. The arts provide students with the tools for this construction of knowledge (Handerhan, 1993). The arts encouraged students to apply their arts-related intelligences to perceive and organize new information into concepts that are used to construct meaning (Oddleifson, 1994).

In the constructivist classroom the arts took on the role of both discovery and expression (Eisner, 1992). Most people regard the arts in expressive forms. However, the arts as tools for discovery should not be underestimated. Through the arts students

are able to journey through the aesthetic world to discover new information. This form of learning allows students the opportunity to expand their imaginations and creativity while gaining new information.

Because the world is complex, students should be encouraged to view it from multiple perspectives (Martin, 1998). The arts assisted students with new ways to view the world around them. The arts enabled students to comprehend that there are many ways of problem solving. If one perspective did not meet the needs, students realize that they can approach the problem from another direction (Greene, 1991).

#### *Communication Systems Within Academic Disciplines*

Berghoff (1998) suggested that students should be able to communicate through the use of the multiple symbol systems within the language arts context. This involved the use of dramatics, music, and visual arts within reading and writing. Students were able to use the drawing of pictures for prompts for writing. This transference from one communication system to another is called transmediation (Hoyt, 1992). Hence, those students who were weak in one communication system were able to express themselves through another. This connection was empowering and served to strengthen the weaker systems. While drama and visual arts were once saved for the high achievers, the issue of transmediation illustrates the need to integrate all communication systems within the classroom.

Hanna (1992) stated that humans communicate in different ways. These multiple ways of communication are found in the arts. If the arts are not provided for students in our schools, we may surely be denying them their preferred mode of communication, hence yielding or stunting their academic potential. The schools should be concerned

with integrating “head, heart, and hand” (Oddleifson, 1994, p. 448). The arts have the power to integrate these three. Through this integration true understanding and meaningful curriculum will prevail. The *Louisiana Arts Content Standards* (Louisiana Department of Education, 1997) acknowledged that the arts assist students as communication systems that integrate skills of content area subjects and make these subjects come to life for the students.

Some educators viewed the integration of arts into the curriculum as simple activities that can be used as extras or time fillers. This misrepresentation or simplistic view of the arts tended to trivialize their importance. Students should be immersed in the arts throughout their day (Collins & Chandler, 1993). The projects should be an extension of their understanding of the curriculum content, not merely a color sheet for early finishers.

While arts should be recognized as subjects that can stand alone and be important in their own rights, parents and educators should also embrace the concept that the arts can enhance true understanding of a content area (Oddleifson, 1994). Aprill (2001) noted that the arts may be used as entry points for content area instruction. He described the arts as a symbol system for other subject areas. He also suggested that art specialists and content area teachers should be given time to plan together to ensure that the integration of the arts into the classroom is successful.

### *Multiple Intelligences and the Arts*

Howard Gardner (1999b) stated that humans are unique in their intelligence. While he argued that no intelligence exists alone (except in those people with severe learning disabilities), he acknowledged that people possess strengths in combinations of



multiple intelligences. Schools typically cater to the logical-mathematical and linguistic intelligences ignoring the other six potential intelligences possessed by students. The additional six intelligences are identified by Gardner as bodily kinesthetic, musical, spatial, interpersonal, intrapersonal, and naturalistic. These intelligences are rooted in the arts.

Based on these intelligences, he suggested the use of multiple entry points with which to engage students. These entry points are designed to be just that, a way to engage students in making connections across the curriculum. By involving students in learning catered to their specific intelligence strengths, they will become more active participants in the learning process. The aesthetic entry point, the narrative entry point, and the hands-on entry point are housed within the arts (Gardner, 1999a).

Recognizing that students have different strengths and providing activities to accommodate those strengths while bridging to the weaker areas is at the heart of diversified instruction. Middle school students commented on their experiences with diversified instruction based on Gardner's Theory of Multiple Intelligences. Students described success stories in math and reading as a result of visual-spatial activities that accompanied the lessons (Strahan, Summey, & Bowles, 1996). The students noted that their math journals guided them to a true understanding of the math concepts presented through lecture and the math textbook. The students were responsible for illustrating and for putting math concepts into their own words in their journals. Through these notes students were able to commit to memory those skills necessary to be more successful in math. Similar examples were cited in reading. Students actually interacted with the text as they illustrated and wrote response notes to the passages read. The

reading projects involved several spatial activities such as creating shoeboxes that housed particular items symbolic to the story. These visual activities enhanced the students' reading

comprehension. The results of the post-test indicated that these students gained almost two Grade Equivalents in reading and three Grade Equivalents in math (Strahan, et.al, 1996).

#### Academic Behaviors Related to the Arts

##### *Higher Order Thinking Skills and Risk Taking*

Hanna (1992) noted that society has placed a great emphasis on schools to increase students' skills in problem solving and higher-order and creative thinking. Artistic thought engages students in the above skills (Hanna, 1992; Collins & Chandler, 1993). Through their research Burton, Horowitz, and Abeles (2000) stated that creative thinking, originality, and imagination were all enhanced through quality arts programs.

Luftig (2000) studied results of students who had participated in the SPECTRA+ arts program. At the time of the study, this program was fully developed and running at two elementary schools in two school districts in southwestern Ohio. The schools worked collaboratively with an arts center and a local university. The components of a SPECTRA+ school are as follows: (a) arts instruction, (b) arts integration, (c) artists-in-residence, (d) professional development, and (e) evaluation.

The students who participated in SPECTRA+ engaged in activities such as creating, observing, and critiquing art. Students in the program also learned about art in historical and cultural contexts. Students were also exposed to academic disciplines taught through the arts as the arts were integrated into the instruction of subjects such as

science, math, and reading. Luftig noted that students who participated in the SPECTRA+ arts program scored significantly higher than the control group in areas of total creativity and originality.

Eisner (1992) noted that students spend much of their time in traditional classrooms searching for the one correct answer. Because the basic curriculum generally dictates only one correct, surface level answer, students are not challenged to think critically or to take risks. The arts provide just the opposite experience for students. Cossentino and Shaffer (1999) stated that through the arts students were encouraged to think in a multitude of intelligences. In fact, creative, imaginative thinking and multiple perspectives were celebrated, thus increasing students' ability to take risks. When one approach did not work, students tried a different solution. This process continued until they were satisfied with the result. Hamblen (1997) noted that in the arts students are rewarded for their efforts of making meaning in different ways. They were able to visualize that there was more than one correct answer, and that everyone's way of thinking should be valued.

The authors of the *Louisiana Arts Content Standards* (Louisiana Department of Education, 1997) noted that the arts enabled students to use their imaginations to find alternative solutions to problems. The authors further stated that employers demand workers who are able to diagnose problems and to provide creative solutions to the problems. They contended that the arts are an integral part of the learning environment of schools. The authors also stated that the arts make the rest of the curriculum come alive for students.

Zeleman, Daniels, and Hyde (1998) stated that teachers should model the creative process to the students. They contended that if teachers expect students to be risk-takers and problem solvers then they must be willing to do the same. The authors noted that asking teachers to be fellow artists is no different than expecting teachers to model true scientific inquiry or life-long learning strategies such as active reading and writing. They maintained that teachers should not be expected to be world-class artists, but that they model to students how to communicate their learning through an artistic expression.

### *The Arts and Student Engagement*

Greene (1991) stated that “boredom and a sense of futility are among the worst obstacles to learning” (p. 37). In order to minimize mundane experiences in schools, students should be immersed in engaging affective and cognitive experiences (Hoyt, 1992). The arts offer students the opportunity for active and immediate involvement of both their intellectual as well as their physical components (Garcia, 1996; Hanna, 1992). Dean and Gross (1992) stated examples of a program called Promoting Success, an arts-based enrichment project geared toward repeating third graders. These particular students scored below average in both reading and math on standardized tests; thus, they were obviously not successful with the traditional educational programs. Promoting Success enabled students to participate in active arts projects based on literature selections. Students were able to create puppets, murals, and plays as well as songs and dances to exemplify a given literature selection. The results indicated that students not only showed marked improvement in the subject matter of reading, but

they also showed considerable improvements in the areas of creative thinking, self-discipline, and positive attitude toward school.

Alister Martin-Smith (1995) likened the role of a child in a classroom dramatic arts enactment to an energized electron. When an electron is energized and then returns to its original orbit, it sends off energy in the form of light. When a student has had the opportunity to participate in a dramatic performance, they too are energized and the result is the increased comprehension of the subject matter as well as an increased self-concept. This type of experience allows students to participate in what Miriam Martinez (1993) referred to as a student-directed activity enabling students to become independent, self-motivated learners. Because students were motivated by bringing literature to life through dramatic experiences, they were motivated to read more literature selections (McMaster, 1998). Not only were these cognitive skills fostered, but working collaboratively was also nurtured through the dramatic arts (Morado, Koenig, & Wilson, 1999; McMaster, 1998).

The use of drama and drawing as pre-writing strategies increased the quality of the students' writings. Moore and Caldwell (1993) stated that the use of these art forms allowed students to attempt new ideas, evaluate them, and revise them until they felt that their ideas were ready for the formal process of writing. Handerhan (1993) suggested that learning through the arts promotes critical thinking, problem solving, and engaged learning.

### The Arts and School Reform

Frechtling (2000) reported that the goals of educational reform should begin with a strong academic focus through an integrated curriculum organized by themes.

She stated that the classrooms of today and of the future should also be student-centered where inquiry-based instruction is the norm. She further related that school and community partnerships should be built and maintained in order to provide the greatest academic benefit for the students. The arts, she contended, provided the vehicle to meet the needs of school's reform efforts.

Goodlad (2000) stated that educational renewal is needed as opposed to educational reform. He suggested that reform efforts are more aligned to a linear model of educational change. This model is characteristic of inputs and outputs with little regard to the means to get the output, or the middle step. Rather, Goodlad maintained that the ecological model of educational reform was more conducive to the climate of our schools. Within the ecological model the school is an ecosystem composed of classroom ecosystems. The school becomes a place that is open to new ideas and where teachers and administrators feel open to suggest new strategies or to dispose of or modify those that are not working. He sees the arts as a vital part of school renewal efforts.

Zeleman, Daniels, and Hyde (1998) stated that the arts should be added into the curriculum, but not solely as a separate and discrete subject. They maintained that the school day is static. Realizing this, they recommended that the arts should be woven into the studies already existing. Because the arts naturally integrate into all other disciplines through the use of visual arts, drama, music, and dance, students are able to actively participate in their learning. These researchers also stated that schools with exemplary arts programs had a balance of arts discipline and arts integration.

Hanna (1994) related education in the arts to a more productive workforce in the future. She maintained that school reform programs are typically the result of policy makers who feel that the schools must produce students who will be willing and able to strengthen our economy. Therefore, these policy makers saw little educational relevance in arts-based instruction and were typically unwilling to fund art programs. The money for arts must be justified to some academic end.

Hetland and Winner (2001) suggested that the arts should be a part of a balanced education. While enhanced academic performance is an added benefit, the arts should not be dependent upon that for its place in schools. They also suggested that schools where the arts play a prominent role were typically more project-based, inquiry-oriented, and more demanding of higher standards from their students. They contended that the arts enhanced student achievement because the students were more motivated to learn and they viewed the disciplines as more interesting and student-centered.

Through his work as an evaluator for the Getty Institute's Regional Institutional Grants, Wilson cited ten findings critical to educational reform. They are as follows:

1. Change initiatives succeed when change is systematic- specifically, when school district leaders steer the initiative, change communities share ownership, and multiple reform efforts reinforce and enhance one another.
2. Professional development as well as curriculum and instructional planning must be pursued simultaneously.
3. Change occurs because of a continuous process of evaluation and with sufficient time for evaluation to guide refinement of professional development programs, instructional development, and implementation.

4. Ongoing communication and collaboration within and among change communities lead to further improvements.
5. Effective programs emerge from collaboration between teachers and experts in particular subject areas.
6. The teaching of school subjects is enriched when museums and other community institutions provide content for instruction and settings for immersion in their respective worlds.
7. Skills- even those of the highest order relating to critical thinking and creative invention- are not ends in themselves. They are the means for understanding human purpose and creating new visions of it.
8. The most important learning takes place when several school subjects are taught simultaneously within the context of the large themes that illuminate conceptions of human purpose and well-being.
9. The content, organization of instruction, and inquiry processes associated with DBAE [discipline-based arts education] provide exemplary models for instruction and assessment in other school subjects.
10. Ongoing assistance in the form of professional development institutes and workshops, expert consultants, opportunities for professional renewal, and other programs tailored to school and district needs are essential. (Wilson, 1997, pp. 12-13)

*Transforming Education Through the Arts Challenge*

Hutchens and Pankratz (2000) discussed an educational reform or renewal effort known as Transforming Education Through the Arts Challenge (TETAC). This



initiative began as a result of the alliances formed through the Getty Institute from 1988 through 1995. The overarching goal of TETAC was to create school environments that provided a strong comprehensive art education, formerly known as discipline-based arts education (DBAE). The mission of TETAC was to create a school environment that promoted positive and comprehensive development in the arts for all students as well as integrated the arts with reform efforts of the entire school. Schools that embraced this effort were required to be willing to comply with scheduling demands. Teachers and art specialists were required to produce and execute long-range plans and therefore must have had time to meet and to collaborate. Teachers also had to be willing to collaborate with teachers of other subject areas and plan activities providing inquiry-based learning experiences for their students.

#### *Discipline-Based Arts Education*

Wilson (1997) stated that Discipline Based Arts Education (DBAE) consists of four parts. They are (a) art production, (b) art criticism, (c) art history, and (d) aesthetics. He further explained that the arts played a significant role in the education of the students within a school employing DBAE. In classrooms employing DBAE, arts specialists work with teachers in the planning and implementation of classroom instruction. The arts specialist works as a team member with other instructors within the school. The arts are seen as important in their own right as well as an integral part of the overall academic instruction. Because art is at the center of all instruction, it is taught regularly and is made meaningful within the classroom. The *Louisiana Arts Content Standards* (Louisiana State Department of Education, 1997) were written to represent the Discipline-Based Arts Education standards.

Wilson explained that the role of The Getty Education Institute for the Arts to the DBAE classrooms was that students in elementary through high school were afforded the opportunity to an education where the arts were at the center of their learning environment. The Getty Institute awarded six regional grants in 1988. These six grants were awarded to the following institutions: (a) the Florida Institute for Arts Education, (b) the Minnesota DBAE Consortium, (c) the Nebraska Consortium for DBAE, (d) The Ohio Partnership for the Visual Arts: Regional Institute for Educators, (e) the Southeast Institute of Education in the Visual Arts, and (f) the North Texas Institute for Educators on the Visual Arts (Wilson, 1997). Each of these sites serves multiple school districts in their surrounding area. New alliances have also been formed as satellites from these original institutes. The Louisiana Institute for Education in the Arts (LAIEA) was created from the Southeast Alliance.

Wilson further noted that schools that have participated in one of the above institutes now realize the importance of the arts and have moved them from the outskirts of instruction to the center or core of the curriculum. Art teachers of these schools are now working with classroom teachers to plan arts-based classroom lessons integrated with the curriculum instead of planning discrete and separate art activities.

Roucher and Lovano-Kerr (1995) concurred with Wilson in that they viewed the arts as the core of instruction. If the arts are used simply as a tool to promote understanding or to motivate students to learn about another subject area, the art discipline is compromised. They advocated the use of team planning with the art specialists and the teachers within each school. This would ensure that the art disciplines are retaining their integrity in the interdisciplinary unit of study.

Smith (1995) stated that while arts were an effective tool in the integration process with other subject areas, that integration was not a substitute for art education. He noted that art instruction should promote an understanding of and an appreciation for works of art. He suggested that elementary students should focus on the development of perceptual skills while middle school and high school students should encounter historical, appreciative, and critical studies of art.

Irwin and Reynolds (1995) noted that interdisciplinary work was dynamic with no boundaries while disciplinary work was static and had boundaries. They contended that room for both exists and this partnership is essential in education. Through the use of integration, teachers are able to teach the specific disciplines while combining them with other content being taught in order to make curricular connections. This type of integration is typically found in the elementary schools. The arts should be taught both as disciplines as well as part of interdisciplinary units. In order to provide students with effective art instruction, teachers should be grounded in the arts before teaching through the arts.

Thompson (1997) expressed concern that classroom teachers may not be fully qualified to teach the arts. She cited inadequate training in the arts has many teachers feeling unable to teach them effectively. The classroom teachers that are not grounded in the arts tended to use the arts to cement learning in other content areas. Conversely, art teachers tended to teach art for the sake of art itself. Communication between classroom teachers and art specialists is at times almost non-existent due to scheduling demands. Students went to art classes, which gave the classroom teacher a planning time. Unfortunately, that planning time is not shared with the art teacher. Thompson

suggests that the classroom teachers and the art teachers need a complementary relationship. They should see how the arts, while taught as disciplines, may be infused into the classroom as well and integrated into meaningful projects that would enhance other subject areas. She noted that the best example of art education at the elementary level would involve art being taught as both a discipline and as a means of communication of other subject matter in other disciplines.

### *Contribution to Academic Performance*

The arts are a means of expression that enhance (a) creativity, (b) imagination and (c) thought. Because the arts are strongly linked to enhanced listening, thinking, and problem solving skills, the connection between the arts and academic success is significant (Bucheli, Goldberg, & Phillips, 1991). The arts have been linked to improvement in several content areas in the classroom. Morrison (1994) cited that students enrolled in music performed better academically than did their peers who were not enrolled in music. Music helped to strengthen students both aesthetically and academically (Kelstrom, 1998). Dean and Gross (1992) described an arts-based program titled Learning Through the Expanded Arts (LEAP). This program was implemented in schools within New York City. The program showed success with over 90% of students developing a stronger understanding of content and strengthened their problem solving and creative thinking skills.

The arts have been used to enhance academic instruction. History and literature were enriched through the correlation of the arts. Through artists' renditions, students were able to gain perspective of various historical time periods (Martin, 1998). Hamblen (1997) cited examples of teachers' use of the arts to support and to enhance

academic achievement. Students explored paintings featuring geometric themes for concepts such as shape, measurement, and proportion. Visual arts were also used as illustrations or symbolism for students' writings.

Music was also found to enhance math achievement. Vaughn (2000) explored the relationship between music and spatial intelligence. From her studies she found two connections between music and mathematical achievement. First, her study showed that students who voluntarily chose to study music displayed a higher level of mathematical achievement than their peers who did not choose music electives. Second, students who were exposed to a music program (non-voluntarily) demonstrated a higher level of mathematical ability than those who did not participate in a music program. Music was also found to show a significant contribution to reading achievement (Butzlaff, 2000). Students who studied music had significantly higher scores on standardized reading tests.

Burger and Winner (2000) explored the effect of the visual arts on academic achievement. The transfer of arts to reading readiness (visual to visual) had a positive effect; however, there was no significant effect in the transfer of arts instruction to reading achievement (visual to linguistic). The positive effect of the transfer of arts to academic achievement involved the transfer of visual perception skills gained through the arts.

The dramatic and the visual arts have affected the reading and writing achievement of students at many grade levels. Blaine Moore and Helen Caldwell (1993) found that students who were allowed to dramatize or illustrate as prewriting strategy scored significantly higher on writing assignments as did the control group.

### *Transference of Arts to Academic Achievement*

Podlozny (2000) discovered that students who actively reenacted reading material not only increased their comprehension on that material, but increased comprehension of additional reading material not dramatized. However, she noted that students must be taught to transfer the skills from one subject to another. Students did not make the transfer naturally. Instead, they must be guided through the process by their instructor.

While transfer of skills learned in the arts to other academic areas was one aspect of enhancing academics through aesthetic education, it should not be considered as the sole reason or even the most important reason to incorporate arts into the curriculum. Burton, Horowitz, and Abeles (2000) found that concentrating only on transfer of skills may deny students with the dynamic two-way interaction that the arts will provide throughout the curriculum. These researchers found that students who were exposed to arts-based curriculum were strong in skills such as (a) elaborative thinking, (b) fluency, (c) originality, (d) focused perception, and (e) imagination. While this study did not find clear evidence of transfer, the findings suggested that many cognitive elements were found in students who were afforded an arts-based education. These higher order cognitive competencies were defined as constellations or ways of thinking.

Hetland (2000) revealed that transfer did exist between music and spatial intelligence. She discovered that students who listened to Mozart music before performing spatial-temporal tasks performed the tasks at a significantly higher rate than those students who listened to nothing before the tasks were performed. She also examined the relationships that relaxation, noise, and non-enhancing music had on the

spatial-temporal tasks. There was no significant difference in scores of students who were exposed to these criteria. She also compared students who listened to Mozart music to those who listened to non-Mozart music that were predicted to enhance achievement. She found no significant difference in this comparison. She stated that further studies should investigate and identify the specific aspects of Mozart's music as well as other music that enhances this effect. She discussed that although transfer did exist, this transfer was limited to those spatial tasks that require students to perform a mental rotation of a figure in the absence of a concrete model.

Reimer (1999) discussed the danger of the Mozart studies to music education. He warned educators that the gains are strictly in spatial-temporal reasoning. If schools were only interested in the results, the only way to enhance them was to listen to music performed by Mozart. He further cautioned that educators should not embrace this action. He suggested that this demeaned the music educator's curriculum. The national standards for music instruction are not met by simply having students listen to only Mozart's music. He maintained that the only reason schools are embracing this is for the quick improvement on sections of standardized tests. This, he suggested, was allowing the testing to drive the curriculum.

Aprill (2001) noted that art should be taught for arts' sake. He cautioned that art programs could be disposable if the academic results are not fulfilled. With the emphasis on high stakes testing, schools systems are searching for programs that will lead to higher test scores. If educators view the arts as only a means to that end, the arts programs will be dependant upon gains in students' academic success.

### Summary

The arts play a variety of roles in schools of today. Learning through the arts provides students the opportunity of constructing meaning of content related material through the use of the visual, dramatic and musical arts while learning in the arts gives students the exposure to specific skills gained through instruction in these art forms (Catterall, 1998). Both roles of the arts are desired in a school based on the principles of Discipline-Based Arts Education (Wilson, 1997). Varying levels of art integration are found in schools that embrace the arts as entry points to content material.

While researchers strive to find connections between the arts and academic achievement, theorists such as Eisner (1998) and Aprill (2001) discount the comparison. These theorists are concerned with the use of the arts as a means to an academic end. According to these theorists, the arts should be taught for their own merit, not simply to enhance academics. While they concur that some academic benefit exists in students exposed to the arts, they state that these benefits are simply ancillary effects of the arts, not the purpose for the art programs.

Researchers and theorists note positive connections between the arts and academic achievement. Berghoff (1998) suggested that the arts can be used as a communication system for students. This communication system may be used as a way for students to construct their learning by integrating the arts through the content area. Gardner (1999b) recognized eight intelligences housed in the brain. Because these intelligences are steeped in the arts, he, like Berghoff, notes the need for students to use the arts to communicate their knowledge.



Students who are provided experiences in the arts are more apt to employ higher order thinking skills and risk-taking behaviors (Eisner, 1992; Hanna, 1992; Collins & Chandler, 1993; Hamblen, 1993; Cossentino & Shaffer, 1999; Luftig, 2000; Burton, Horowitz, & Abeles, 2000). Students that are actively involved with their education become more independent learners. Because the arts offer the opportunity for active and meaningful involvement, student engagement is increased (Hoyt, 1992; Dean & Gross, 1992; Hanna, 1992; Garcia, 1996; Martinez, 1993; McMaster, 1998; Morado, Koenig, & Wilson, 1999). The arts are also credited with students' enhanced creativity, imagination, listening, thinking and problem-solving skills (Bucheli, Goldberg, & Phillips, 1991). In addition, Burton, Horowitz, and Abeles (2000) noted that the arts-based curriculum afforded students with skills such as elaborative thinking, fluency, originality, and focused perception.

In the following chapter, the research problem, research question, and hypotheses will be stated. The research hypotheses will be restated in the form of null hypotheses. In addition, the researcher will describe the research design, method of sampling, procedural details, validity and reliability of the LEAP 21, and the method of data analysis.

## **CHAPTER 3**

### **Methodology/Procedures**

**This chapter states the research problem, research questions, and the null hypotheses that were investigated. The chapter further describes the methodology used in conducting this study. Included in this chapter are discussions about the research design, sample, instrumentation, data collection, and analysis techniques. Procedures were followed for minimizing threats to internal validity.**

### **Restatement of the Problem**

**The purpose of this study was to investigate the role that visual arts, dramatic arts, music and dance had on the academic achievement of fourth grade students in Louisiana. The researcher examined the use of the arts as entry points into the content areas of (a) language arts, (b) mathematics, (c) science, and (d) social studies. Comparisons of LEAP 21 scores were made between students who attended schools where teachers were trained by the Louisiana Institute for Education in the Arts (LAIEA) and students who attended schools in the same or neighboring districts where teachers were not trained by LAIEA. Based on the review of literature, especially the work of Catterall (1998), Gardner (1999b), and Winner and Hetland (2000), the researcher chose to explore the use of infusion of the arts in the delivery of instruction of academic disciplines in classrooms.**

### Research Questions and Hypotheses

The following is a list of research questions used to focus this study:

1. Do Louisiana fourth grade public school students who attend schools where teachers have been trained by the Louisiana Institute for Education in the Arts (LAIEA) score significantly higher on the language arts section of the Louisiana Educational Assessment Program for the Twenty-first Century (LEAP 21) than students in matched pair non-participating schools?
2. Do Louisiana fourth grade public school students who attend schools where teachers have been trained by the Louisiana Institute for Education in the Arts (LAIEA) score significantly higher on the mathematics section of the Louisiana Educational Assessment Program for the Twenty-first Century (LEAP 21) than students in matched pair non-participating schools?
3. Do Louisiana fourth grade public school students who attend schools where teachers have been trained by the Louisiana Institute for Education in the Arts (LAIEA) score significantly higher on the science section of the Louisiana Educational Assessment Program for the Twenty-first Century (LEAP 21) than students in matched pair non-participating schools?
4. Do Louisiana fourth grade public school students who attend schools where teachers have been trained by the Louisiana Institute for Education in the Arts (LAIEA) score significantly higher on the social studies section of the Louisiana Educational Assessment Program for the Twenty-first Century (LEAP 21) than students in matched pair non-participating schools?

The following is a list of research hypotheses:

H<sub>1</sub>. A significant difference exists between the mean index scores of the language arts section of the Louisiana Educational Assessment for the Twenty-first Century (LEAP 21) for students who were enrolled in schools where teachers were trained by the Louisiana Institute for Education in the Arts (LAIEA) and the mean index scores in matched pair non-participating schools.

H<sub>2</sub>. A significant difference exists between the mean index scores of the mathematics section of the Louisiana Educational Assessment for the Twenty-first Century (LEAP 21) for students who were enrolled in schools where teachers were trained by the Louisiana Institute for Education in the Arts (LAIEA) and the mean index scores in matched pair non-participating schools.

H<sub>3</sub>. A significant difference exists between the mean index scores of the science section of the Louisiana Educational Assessment for the Twenty-first Century (LEAP 21) for students who were enrolled in schools where teachers were trained by the Louisiana Institute for Education in the Arts (LAIEA) and the mean index scores in matched pair non-participating schools.

H<sub>4</sub>. A significant difference exists between the mean index scores of the social studies section of the Louisiana Educational Assessment for the Twenty-first Century (LEAP 21) for students who were enrolled in schools where teachers were trained by the Louisiana Institute for Education in the Arts (LAIEA) and the mean index scores in matched pair non-participating schools.

For statistical purposes, the following is a list of the null hypotheses:

H<sub>1</sub>. No significant difference exists between the mean index scores of the language arts section of the Louisiana Assessment for the Twenty-first Century (LEAP 21) for students who were enrolled in schools where teachers were trained by the Louisiana Institute for Education in the Arts (LAIEA) and the mean index scores in matched pair non-participating schools.

H<sub>2</sub>. No significant difference exists between the mean index scores of the mathematics section of the Louisiana Assessment for the Twenty-first Century (LEAP 21) for students who were enrolled in schools where teachers were trained by the Louisiana Institute for Education in the Arts (LAIEA) and the mean index scores in matched pair non-participating schools.

H<sub>3</sub>. No significant difference exists between the mean index scores of the science section of the Louisiana Assessment for the Twenty-first Century (LEAP 21) for students who were enrolled in schools where teachers were trained by the Louisiana Institute for Education in the Arts (LAIEA) and the mean index scores in matched pair non-participating schools.

H<sub>4</sub>. No significant difference exists between the mean index scores of the social studies section of the Louisiana Assessment for the Twenty-first Century (LEAP 21) for students who were enrolled in schools where teachers were trained by the Louisiana Institute for Education in the Arts (LAIEA) and the mean index scores in matched pair non-participating schools.

## Research Design

An ex post facto research design was used to compare the LEAP 21 scores of those students exposed to instruction in schools where teachers have been trained by the LAIEA with the scores of students in schools where teachers have not been trained by the LAIEA. This framework was chosen as the ex post facto design used to compare whether an existing condition could have possibly affected differences between two groups (McMillian & Schumacher, 1997).

The independent variable was the teachers' participation in the training by LAIEA. The dependent variable was the fourth grade LEAP 21 index scores analyzed by the following sections: (a) language arts, (b) mathematics, (c) science, and (d) social studies for the school year 2001-2002. McMillian and Schumacher (1997) suggested several procedures to enhance the control of ex post facto research. First possible causes of the dependent variable should be exhausted. Next all the possible factors that may explain the relationship should be listed. In the third step, information gained in steps one and two should be carefully select a matched group that will be as homogeneous as possible where the dependent variable is concerned.

In order to ensure the control of this study, the total number of students per LAIEA trained school who took the fourth grade LEAP 21 was identified. This total number was used to locate a matched pair school within the same or a neighboring district that did not have faculty trained by the LAIEA. A neighboring district was used for three schools in one district due to the large number of participating schools in that district.

### Sample

Purposeful sampling was used for this research. The strategy of comprehensive sampling was used. This technique was selected to compare the average LEAP 21 index scores of fourth grade students in the state who had been taught in schools by teachers trained in the LAIEA to the average of those with the same total number of students in the same or neighboring districts by teachers not trained in the LAIEA. Fourth grade LEAP 21 scores from 74 elementary schools in ten districts were used. Thirty-seven of these schools housed trained LAIEA faculty while the remaining 37, used as the comparison group, did not have faculty trained by the LAIEA. The pairs were matched based on the total number of students who took the LEAP 21 in the same or neighboring districts.

### Instrumentation

The LAIEA was established in 1997 as a satellite institute from the Southeast Center for Education in the Arts at the University of Tennessee at Chattanooga. It was designed to provide regional training in a comprehensive arts education program to principals, classroom teachers, art specialists, and artists. A six-day intensive training is offered one time each summer in New Orleans. During this training, participants are instructed on how to integrate the arts into the academic disciplines of the classroom. The LAIEA is now supported by the John F. Kennedy Center for the Performing Arts and the Louisiana Board of Elementary and Secondary Education.

Upon consent from the superintendent of each district, the researcher disseminated letters to the principals of schools who have sent participants to the Louisiana Institute for Education in the Arts (LAIEA) requesting their participation.

Surveys to be distributed were included for trained teachers at the particular site. These surveys were coded to denote the identity of the school. The results of these surveys were used to determine the educational impact of the institute on each of the participants.

### Procedural Details

Step 1: A request was made to the Human Subject Committee at Louisiana Tech University for approval to conduct the study and permission was granted to conduct the study.

Step 2: Participating schools with LAIEA trained teachers were located in the *2001-2002 Louisiana State School Directory*.

Step 3: A letter was sent to superintendents requesting permission for the LAIEA-trained schools in their district to participate in a survey. Of the ten superintendents, five superintendents gave permission for teachers in their parishes to be surveyed. Three did not give permission, while the other two did not respond. Follow up letters were sent and phone calls were made to the superintendents who were non-responsive. Due to a lack of response, surveys were not sent to teachers in these districts. One superintendent was delayed in the response and due to time constraints, surveys were unable to be sent to the teachers in this district as school year was coming to a close.

Step 4: Upon consent of the superintendents, a cover letter, teacher participant consent forms, and surveys were sent to principals of the 29 schools in the districts where permission was granted and where teachers had been trained by LAIEA. The letter explained the purpose of the survey and asked principals to disseminate the survey to teachers who participated in the LAIEA training. A request was made that the surveys



be completed and sent back within a two-week period. The participants were provided self-addressed stamped envelopes along with the surveys. The survey was designed with six multiple-choice questions and one open-ended question in order to solicit data that would be helpful in ascertaining the educational impact of the institute on each participant.

**Step 6:** The researcher contacted and met with the Director of Student Standards and Assessment at the Louisiana Department of Education in Baton Rouge, Louisiana. A written request was made to obtain index scores for each section of the fourth grade LEAP 21 for each school in the ten parishes where teachers were trained by LAIEA.

**Step 7:** Data were received from the Director of Student Standards and Assessment and entered into the SPSS program. Each school that participated in the LAIEA training was coded. The *Total* column was used to locate the number of fourth grade students who took the LEAP 21 at the LAIEA-trained schools. The researcher then found a matched pair comparison group based on the total number of students taking the LEAP 21 from the list of schools within the same or neighboring districts that did not have LAIEA-trained faculty. Based on the language arts total, 3,667 fourth grade students were located from LAIEA-trained schools and matched with 3,667 fourth grade students from non LAIEA-trained schools in the same or neighboring districts.

**Step 8:** The mean of the index scores for each section of the LEAP 21 students in the 37 LAIEA-trained schools throughout the state and the mean index scores for each section of the LEAP 21 students in the 37 non LAIEA-trained schools throughout the state.

**Step 9:** The significance level was set at 0.05. The Analysis of Variance (ANOVA) was used to compare the differences in the mean index scores.

Step 10: The researcher coded the responses of the surveys returned from teachers of the thirteen schools who returned them.

### Validity and Reliability

According to Popham (1993) criterion-referenced tests are preferred over norm-referenced tests for the sake of measurement in students' academic performance. The reason for this is that criterion-referenced tests tend to give the researcher an absolute interpretation of the students' academic ability rather than a relative interpretation. In addition, teachers in Louisiana are charged with the instruction of state benchmarks. The LEAP 21 instrument is built from these benchmarks. Therefore, the use of a criterion-referenced test (LEAP 21) was chosen as a means to compare the fourth grade students. The researcher ascertained whether instruction through the arts assisted students in meeting or exceeding state benchmarks.

According to Popham (1993) reliability refers to the ability of an instrument to consistently measure what it sets out to measure. He states that two basic procedures exist to ensure reliability. The first is the stability procedure. This is also known as the test-retest method. Participants take a test and then retake the same test at a later date. The correlation coefficient is then calculated. A properly developed test should yield a reliability coefficient of 0.80 to 0.95.

The second procedure is the alternative form method. This procedure involves giving two forms of the test (one at a time) to the same group of people on the same day. A correlation coefficient is found. The reliability coefficient of tests with reasonable length is typically in the excess of 0.80.

The reliability of the LEAP 21 is based on the alternative form method (Louisiana Department of Education, 2000). Two forms of the LEAP 21 were administered to fourth and eighth grade students in March of 1999. These forms included both the Language Arts and the Mathematics sections. The Cronbach Alpha reliability coefficient on the fourth grade language arts section of the LEAP 21 is 0.81. The Chronbach Alpha reliability coefficient on the fourth grade mathematics section of the LEAP 21 is 0.94 (Louisiana Department of Education, 1999). For the purposes of field-testing, the Louisiana Department of Education administered ten forms of the science section of the LEAP 21 and eight forms of the social studies section of the LEAP 21. The Cronbach Alpha reliability coefficient for the fourth grade science section ranged from 0.81 to 0.90. The Chronbach Alpha reliability for the social studies section ranged from 0.89 to 0.92.

Content-related, criterion-related, and construct related are three common procedures for ascertaining validity. The content-related validity refers to justifying whether the test is consistent with the skills or content being presented. Through criterion-related validity, one attempts to correlate performance on some measure of testing to an independent factor. The concurrent form of criterion-related validity compares the results of the testing instrument to criterion-related data collected at an earlier time interval. The final approach to validity is the construct-related validity. This approach is especially useful for instruments assessing affective characteristics (Popham, 1993).

Because the LEAP 21 is a criterion-referenced test, it is designed to match the proportion or weight of given content units or standards (Louisiana Department of Education, 1999). In order to ensure the validity of this assessment, Louisiana

Department of Education staff along with teachers throughout the state (several of whom had worked on the original content standards) designed an assessment framework that would match the standards. From their design, an independent testing contractor developed the assessment instrument. The team of educators matched test items with content standards. Items existing without a matched standard were removed from the test.

The assessment committee also considered the weighting of test items. The items were categorized into six math strands that corresponded with the six categories of the math content standards. The number of multiple choice items per strand correlated with the number of content standards addressed in that particular strand. The math constructed response items were more comprehensive. While each item met a primary strand such as number and number relations, other strands were embedded such as algebra, measurement, geometry, data analysis, and patterning within each question.

In the two forms of the LEAP 21 no variation existed between the blueprint, or the weight of the given content units, and the field test items in the language arts or mathematics sections. The LEAP 21 was deemed valid as the forms' score points for each content unit were synonymous with the design of the weighted content units or standards. Review committees also verified the content validity of the science and social studies sections of the LEAP 21 (Louisiana Department of Education, 2000).

Criterion-related validity was secured throughout this study. This type of validity is desired since the researcher is attempting to correlate the fourth grade students' performance on the four sections of the LEAP 21 with the type of instruction received in the classroom. Instruction was based on the schools' participation in the LAIEA.

Teachers trained in this approach use the arts as entry points into other academic disciplines including language arts, mathematics, science, and social studies.

In order to guard against the reduction to internal validity, the researcher will consider eight variables identified by Campbell and Stanley that would interfere with the internal validity of the study (Popham, 1993). The history of a study can affect the outcome in that the longer a study continues; the more difficult it is to ascertain which variable could contribute to the outcome of the study. The researcher in this study is examining only the performance of groups of public school fourth graders over the course of one year.

Maturation is another factor that threatens internal validity. The growth in academic ability could be in part due to the maturation during the course of the school year. Because the LEAP 21 is given in fourth grade once during the course of the year, a posttest based on the students' pretest performance is not evaluated. Therefore, maturation will not be threat. The third threat addresses the threat of testing. This threat suggests that students tend to perform better on a posttest than they did on a pretest because they have become accustomed to the type of information likely to be asked. Again, this will not be an issue as the LEAP 21 is given once during the school year.

Instrumentation refers to the measuring instrument used for evaluation purposes. If the instrument is changed during the course of study, it could unjustly affect the outcome of the study. Because this study is not subject to a pretest and posttest student sample, this factor does not apply. The stability of the LEAP 21 relates to the reliability of this instrument. The reliability of the language arts section is 0.81 while the reliability of the of the science section ranges from 0.81 to 0.90, while the reliability of

the social studies section ranges from 0.89 to 0.92 (Louisiana Department of Education, 2000).

Selection of participants is of great importance to this study. Schools in the comparison groups were found within the same district or within a neighboring district. The comparison schools will be identified by the total number of students per non LAIEA-trained school who took the fourth grade LEAP 21. This number matched the total number of students per LAIEA-trained school who took the LEAP 21. The mortality of the group was not applicable because the academic status of the students was not a factor in the selection of the participants in the experimental or the comparison group. The statistical regression was also not an issue as the researcher will be examining the relationship of scores of students who attended schools whose faculty were trained in the LAIEA and the level of achievement on the LEAP 21. The use of pretests and posttests were not a factor in this study.

#### Data Analysis

Data from the study were analyzed for the following reasons: (a) to determine if a statistical difference exists between the average index scores on the language arts, mathematics, social studies, and science sections of the LEAP 21 of fourth grade public school students who attend schools where faculty have been trained by LAIEA and the average index scores of non-participating schools within the same or a neighboring district matched on the total number of students; and (b) to determine the section of the LEAP 21 that yielded the highest results.

An Analysis of Variance (ANOVA) was used to verify the statistical difference between the means of the two groups. In this case, the researcher employed the use of

an ANOVA to compare the mean index scores of students who attended LAIEA participating schools with the mean index scores for the comparison group.

## **CHAPTER 4**

### **Results of the Study**

The purpose of this study was to examine the relationship between the infusion of the arts into the classroom and the academic achievement of fourth grade students in the disciplines of mathematics, language arts, science, and social studies. Seventy-four schools from ten Louisiana school districts participated in this study. Two schools were in north Louisiana, four were from central Louisiana, while the remaining sixty-eight were from the southern part of Louisiana. Thirty-seven of these schools employed one or more faculty members who attended the Louisiana Institute for Education in the Arts (LAIEA) while the remaining thirty-seven were non-participating schools chosen as matched pairs for each of the participating schools. These schools were chosen based on the total number of students who took the LEAP 21 per school.

In addition to the analysis of LEAP 21 index scores in each of the four subject areas, a researcher-constructed survey was sent to the LAIEA participants. Upon consent from the Human Subject Committee, the researcher sought permission from the superintendents of each school district to survey teachers within the districts who had participated in LAIEA. The researcher obtained permission for teachers in twenty-nine LAIEA-trained schools. Teachers from thirteen of the twenty-nine schools responded. Through the survey the researcher attempted to identify the impact of the LAIEA training on the instruction of the students at their school.



### Survey Analysis

The 37 schools with LAIEA trained teachers in this study had a total of 276 participants. Table 1 shows the number of participants by grade level and specialty level. Of the 37 schools, permission was granted to survey teachers in 29 of them. Each LAIEA teacher was asked the following questions: (a) the year of LAIEA attendance, (b) the training session attended (visual arts, music, dance, or dramatic arts) and whether or not the session was assigned or self-selected, (c) the grade level taught, (d) the amount of time spent consulting with art specialists or other teachers concerning arts instruction in the classrooms, (e) the schedule of these meetings, (f) how the knowledge from the training was disseminated to the remainder of the faculty from each school, and (g) the effect of the LAIEA training on the delivery of instruction in each teacher's classroom. Data are summarized in the following tables.

Table 1

*Total Number of Teachers Trained in the 37 Schools in Study*

Grade Level/Specialty Area	Number Trained	Percentage
Kindergarten-4 <sup>th</sup> Grade	80	29%
5 <sup>th</sup> Grade – 8 <sup>th</sup> Grade	63	23%
Art Specialists	36	13%
Administrators	20	7%
Other Faculty	77	28%

Two hundred seventy-six teachers have been trained in 37 schools that have fourth grade in their configuration. Table 1 illustrates the teaching assignments or administrative roles of these participants. The 36 art specialists work with all grade levels at their schools. The 77 participants listed as "Other Faculty" include those

teachers who did not give their teaching assignment on the data base as well as librarians, foreign language teachers, physical education teachers, and paraprofessionals.

Table 2

*Survey Question 1*

Year of Attendance	Number of Participants	Percentage of Respondents
1997	6	15%
1998	11	28%
1999	5	13%
2000	10	25%
2001	8	20%

Table 2 illustrates the years of attendance of the survey participants in the Louisiana Institute for Education in the Arts. Twenty-seven percent of the respondents attended the 1998 LAEIA training, followed by 25% who attended the 2000 training. Twenty percent attended the 2001 training, 15% attended the 1997 training, and 13% attended the 1999 training. Some participants indicated that they had repeated visits to the institute.

Table 3

*Survey Question 2*

Training Session	Number of Participants	Percentage of Respondents
Visual Arts	25	53%
Music	7	15%
Dance	7	15%
Dramatic Arts	8	17%

Among the survey participants, the most popular training session at the institute was the visual arts at 53%, followed by the dramatic arts with 17%, and finally music and movement followed with 15% of the participants indicating that they attended these sessions.

Table 4

*Survey Question 3*

Teaching Assignment	Number of Participants	Percentage of Respondents
Kindergarten-3 <sup>rd</sup> Grade	26	74%
4 <sup>th</sup> -5 <sup>th</sup> Grade	4	11%
Music	2	6%
Librarian	1	3%
Principal	2	6%

The majority of respondents, 74%, taught pre-school through third grade, while 11% taught fourth through sixth grades. The remaining fifteen percent were made up of music and library teachers and principals.

Table 5

*Survey Question 4*

Consulting Frequency	Number of Responses	Percentage of Respondents
Weekly-Biweekly	10	27%
Monthly	14	38%
Bimonthly - Yearly	5	14%
Distribute Materials/ Model Lessons	3	8%
Occasionally-Rarely	5	14%

On the matter of the frequency of consultation with arts specialists at their schools, 38% reported that they consulted monthly, 27% weekly-biweekly, 14% bimonthly-yearly, 14% occasionally-rarely. The remaining 8% stated that they distributed arts materials and modeled arts-based lessons.

Table 6

*Survey Question 5*

Consulting Times With Arts Specialists	Number of Participants	Percentage of Respondents
During Planning Times	6	15%
Before or After School	9	22%
Specified Staff Development	11	27%
Summer Months	3	7%
As Needed	5	12%
No Specialists/Plan with LAIEA Teachers	3	7%
Never	4	10%

Twenty-seven percent of the survey participants indicated that they used specified staff development time to work with arts specialists, 22% planned with arts specialists before and after school hours. Fifteen percent of survey participants used their planning times to consult with the specialists, 12% met as needed, 7% met during the summer months, another 7% did not have arts specialists so they met with other LAIEA trained teachers, while 4% reported that they never met with specialists.

Table 7

*Survey Question 6*

Method of Dissemination	Number of Participants
Beginning of the Year Staff Development	9 (29 %)
Staff Development Throughout Year	13 (42%)
Grade Level Meetings	6 (19%)
Informally Throughout the Year	3 (10%)

When asked about the dissemination of LAIEA training to the rest of the faculty, 39% stated that they had specified staff development throughout the year, 29% noted that they trained their teachers during staff development at the beginning of the school year following their LAIEA training. Nineteen percent of survey participants stated that they trained teachers at their schools through grade level meetings, while 10% reported that they trained teachers on an informal basis throughout the year.

*Survey Question 7*

The discussion concerning this question yielded various responses. The researcher coded the responses into the following three categories: (a) learning in the arts, (b) learning non-arts content through the arts, and (c) ancillary effects on student learning. The researcher chose these categories using the study by Catterall (1998) as a model.

The researcher will discuss each of the findings in the following narrative within the categories.

### Effects on Learning in the Arts

Participants indicated through their narrative that they felt their teaching was improved in the art content area. Two participants discussed that they had a better

understanding of how to hold art discussions with their classes and that they were able to critique art as well as to teach others this process using the art terminology gleaned from their training. Participants noted that the art lessons taught were now more detailed, and that art lessons now involved learning about art pieces and what goes into creating art, rather than just drawing and painting. Hence, art has become more informative rather than simply a time for students to free draw. Participants in one school began a year round art gallery at the kindergarten level as a result of their training. The teachers at this school are making plans for a school-wide art gallery in the coming years.

Participants have also incorporated the arts into research projects. One participant discussed the use of a study of composers. Through this study the students experienced the research process as they learned about specified composers through music, movement, dance, and drawing. The participant also indicated the addition of a study of local composers including the participant and several area musicians. Six participants noted the addition of a unit on visual artists and masterwork art pieces. One participant noted that the school librarian has obtained a wealth of art prints and books. Another participant cited a concentration on art history and art criticism as well as art production. One participant stated that students can now view, interpret, and appreciate art. One participant noted a more positive attitude toward the arts in general.

#### Effects on Learning Through the Arts

Teachers also realized the impact that the arts had on the content curriculum as well. Nine participants indicated that visual and dramatic arts are used in all subject areas to enrich subject matter. One participant noted that drama was used to add depth

or movement. One participant stated that the arts were primarily infused in the language arts curriculum, while another noted that visual art was incorporated throughout the content areas in the classroom. One participant noted the use of art prints in all areas of the curriculum.

Two participants correlate music instruction to the curricular content of the classroom. One of the two who noted the infusion of music cited the usefulness of the units that were provided by LAIEA. These units have allowed more of an expansion of music into the subject areas. One participant noted the use of more dramatic storytelling and reading. Another participant suggested that the arts make new and old realms of society and culture available to students. One participant stated that it was easier to make connections and use those to enhance curriculum.

#### Ancillary Outcomes of the Arts

The participants cited several examples of how the arts promoted a more positive climate for learning. Two participants stated that the LAIEA training helped them to be a better leader in their classroom as it helped them to be better prepared and stronger in their own knowledge. Two participants noted that, as a result of their training, they used improved questioning strategies that raised the students' levels of thinking. Two teachers cited the incorporation of more observational activities that resulted in stronger discussions and more elaborate language.

The participants also noted a change in the way they planned instruction for their students. Two cited that they were more creative in their delivery of instruction. Two participants described their teaching since LAIEA as unique and fun. They also noted that their students were enthusiastic about learning through the arts and that they

too were pleased with the alternative way of teaching. One participant noted the effort now made to incorporate more activities that create an enjoyable atmosphere for the students. Participants discussed the use of more hands-on activities. One participant mentioned that through the art studies, oral and written language as well as thinking skills are incorporated, which enhance and enrich the learning process.

Faculty at one school who sent participants to LAIEA have written a school improvement plan based on the infusion of arts into the curriculum. Since faculty members' participation in LAIEA, one school was awarded with the state "Creative Ticket of Excellence Award" for teaching the arts. This award is given statewide to two schools a year.

#### Analysis of LEAP 21 Data

Prior to embarking on this research project, a request to the director of the Louisiana Institute for Education in the Arts (LAIEA) was made for a database of its participants from the years of 1997-2001. Upon receipt of this database, the LAIEA participating schools with fourth grade in their configurations were located. These schools served as the participating schools in the study. A written request was made to the Director of Student Standards and Assessment. The request was for LEAP 21 school level index scores in the areas of mathematics, language arts, science and social studies for the thirty-seven schools identified as participants in this study. In addition, a request was made for these scores from all of the schools within these districts with fourth grades in their configuration. The participating schools were then matched with a non-participating school in their district or in a neighboring district based on the total



number of students who took the language arts section of the LEAP 21 at each participating school.

Data in Table 8 show the total number of students in the fourth grade at 37 participating schools and the 37 matched pair schools for each section of the 2001-2002 fourth grade LEAP 21. These numbers represent the number of students who took the fourth grade LEAP 21.

**Table 8**

*Total Count of Students Taking the Fourth Grade LEAP 21 in Participating LAIEA Schools and Comparison Schools*

Section of LEAP 21	Number of Students in LAIEA Participating Schools	Number of Students in Comparison Schools
English/Language Arts	3,667	3,667
Mathematics	3,665	3,668
Social Studies	3,666	3,665
Science	3,666	3,667

### Testing of the Hypotheses

Data from this study were used to test the following null hypotheses.

1. No significant difference exists in the average score of the language arts section of the Louisiana Assessment for the Twenty-first Century (LEAP 21) for students who were enrolled in schools where teachers were trained by the Louisiana Institute for Education in the Art (LAIEA) and the mean index score in matched pair non-participating schools.

Table 9

*One-Way ANOVA of Fourth Grade LEAP 21 Scores for the Language Arts Section in LAIEA Participating Schools and Comparison Schools*

<b>Language Arts Index Scores</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>
Between Groups	1	2427.114	6.194*	0.015
Within Groups	72	391.820		

$p < .05$

The results of the one-way analysis of variance for the language arts section of the LEAP 21 are shown in Table 9. The mean for the language arts index score ( $M = 89.9$ ) for the LAIEA participating schools was significantly higher than the mean language arts index score ( $M = 78.5$ ) for the comparison group. The data in Table 9 show a significant difference in the means of the language arts section of the fourth grade LEAP 21 for the students in LAIEA participating schools and the students in the non-participating matched pair schools.

2. No significant difference exists in the mean index score of the mathematics section of the Louisiana Assessment for the Twenty-first Century (LEAP 21) for students who were enrolled in schools where teachers were trained by the Louisiana Institute for Education in the Arts (LAIEA) and the mean index score in matched pair non-participating schools.

Table 10

*One-Way ANOVA of Fourth Grade LEAP 21 Scores for the Mathematics Section in LAIEA Participating Schools and Comparison Schools*

<b>Mathematics Index Scores</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>
Between Groups	1	2644.835	4.962*	0.029
Within Groups	72	532.997		

\*p < .05

The results of the one-way analysis of variance for the mathematics section of the LEAP 21 are shown in Table 10. The mean mathematics index score ( $M = 80.6$ ) for the LAIEA participating schools was significantly higher than the mean mathematics index score ( $M = 68.7$ ) for the comparison group. The data in Table 10 show a significant difference in the means of the mathematics section of the fourth grade LEAP 21 for the students in LAIEA participating schools and the students in the non-participating matched pair schools.

3. No significant difference exists in the mean index score of the science section of the Louisiana Assessment for the Twenty-first Century (LEAP 21) for students who were enrolled in schools where teachers were trained by the Louisiana Institute for Education in the Arts (LAIEA) and the mean index score in matched pair non-participating schools.

Table 11

*One-Way ANOVA of Fourth Grade LEAP 21 Scores for the Science Section in LAIEA Participating Schools and Comparison Schools*

<b>Science Index Scores</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>
Between Groups	1	3543.870	5.904*	0.018
Within Groups	72	600.249		

\*p < .05

The results of the one-way analysis of variance for the science section of the LEAP 21 are shown in Table 11. The mean science index score ( $M = 86.5$ ) for the LAIEA participating schools was significantly higher than the mean mathematics index score ( $M = 72.7$ ) for the comparison group. The data in Table 11 show a significant difference exists in the means of the science section of the fourth grade LEAP 21 for the students in LAIEA participating schools and the students in the non-participating matched pair schools.

4. No significant difference exists in the mean index score of the social studies section of the Louisiana Assessment for the Twenty-first Century (LEAP 21) for students who were enrolled in schools where teachers were trained by the Louisiana Institute for Education in the Arts (LAIEA) and the mean index score in matched pair non-participating schools.

Table 12

*One-Way ANOVA of Fourth Grade LEAP 21 Scores for the Social Studies Section in LAIEA Participating Schools and Comparison Schools*

<b>Social Studies Index Scores</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>
Between Groups	1	2007.205	3.913	0.052
Within Groups	72	512.909		

$p < .05$

The results of the one-way analysis of variance for the social studies section of the LEAP 21 are shown in Table 12. The mean social studies index score ( $M = 86.5$ ) for the LAIEA participating schools was not significantly higher than the mean social studies index score ( $M = 73.7$ ) for the comparison group. This data in Table 12 show that no significant difference exists in the means of the social studies section of the fourth grade LEAP 21 for the students in LAIEA participating schools and the students in the non-participating matched pair schools.

## **CHAPTER 5**

### **Summary, Conclusions, Recommendations, and Implications for Education**

#### **Summary**

The purpose of this study was to examine the role that the arts play in academic achievement of fourth grade students in Louisiana. The study was an ex post facto design. Gardner's Multiple Intelligences Theory (Gardner, 1999b) was the theoretical framework used. In addition to his proposal of eight intelligences Gardner suggests that because these intelligences are embedded within the arts, students who are provided with aesthetic entry points into new curricular concepts will achieve more academic success than those students who are not afforded this type of instruction. He states that because these intelligences are derived from the arts, teaching through the intelligences parallels teaching through the arts.

The work of Catterall (1998) and Eisner (1998) in the arts was also used as a theoretical model. They suggest that instruction using the arts affords students three possibilities that may occur simultaneously. First, students learn in the arts when they are gaining skills from taking arts classes. Next, students learn through the arts when the arts are used to teach academic curriculum. Finally, students may experience ancillary outcomes of the arts, which are those skills that are transferred and have an effect on student performance on non-arts tasks.

The participants in this study included 74 schools that had fourth grade in their configurations. Thirty-seven of these schools had faculty who had been trained by the Louisiana Institute for Education in the Arts. The remaining 37 were matched pair schools within the same or neighboring districts. These comparison schools were selected based on the fourth grade population taking the language arts portion of the 2001-2002 LEAP 21.

Two main data sources existed in this study. The first data source discussed is the surveys. Upon consent of superintendents, teachers who were trained by LAIEA were sent researcher-designed surveys. In addition to key demographic data, the results of these surveys were used to determine the educational impact that this training had on each of the participants. Surveys were sent to 29 schools. Teachers from thirteen of these schools participated in this survey. In all, thirty-five teachers responded.

The final question on the survey concerned the effect on the delivery of instruction in each participant's classroom. The responses to this question fell into the same three categories suggested by Catterall (1998) and Eisner (1998). Participants reported effects in students' learning in the arts and through the arts. They also suggested ancillary effects of the arts-infused curriculum.

The second data source used for this study was the descriptive and inferential statistics used to analyze data presented in Chapter 4. Significance was set at the 0.05 level. School-level data from LAIEA trained schools and matched pair comparison schools were used. These data consisted of fourth grade mean index scores for the LEAP 21 in the areas of language arts, mathematics, science, and social studies. These data were analyzed using an analysis of variance (ANOVA). Findings of the study were

accepted at 0.05 level of significance; hence, the first three of the four null hypotheses were rejected, while the last null hypothesis was accepted.

### Conclusions

Findings from this study indicated that a significant difference does exist between fourth grade LEAP 21 student scores in the 37 LAIEA trained schools and the 37 matched pair schools in the areas of language arts, mathematics, and science based on population within the same districts. In the Reviewing Education and the Arts Project (REAP) Winner and Hetland (2001) analyzed 188 studies concerning the arts and academic achievement. They found three areas where reliable causal links were found. First, a medium-sized causal relationship was found between listening to music and spatial-temporal reasoning. Second, a large causal relationship was found between learning to play music and spatial reasoning. Finally, a medium causal link was found between classroom drama and verbal skills including oral understanding, recall of stories, reading achievement, oral language, and writing. This final finding most closely supports this study as the area with the highest level of significance was found in the language arts section of the LEAP 21. The relationship between classroom drama and verbal skills is of particular interest in this study as the goal of LAIEA is to train teachers to infuse the arts into the existing classroom curriculum.

The Louisiana Institute for Education in the Arts (LAIEA) is designed to be a part of a school renewal program. Participants are expected to disseminate the information from the institute to the faculty at their schools. Eighty-seven percent of the participants surveyed had formal training sessions with their faculties upon completing the LAIEA



training itself. This supports the Transforming Education Through the Arts Challenge (TETAC) discussed by Hutchens and Parkratz (2000). The goal of TETAC was to create school environment that promoted positive and comprehensive development in the arts for all students as well as integrated the arts with reform efforts of the entire school. Teachers of varying subject areas were expected to work together to plan activities providing inquiry-based learning experiences for their students.

Sixty-five percent of the survey participants described their continued professional development in the arts in that they consulted at least monthly with arts specialists at their schools. This supports the work by Wilson (1997) and Roucher and Lovano-Kerr (1995). Wilson (1997) noted that participants in these institutes realize the importance of the arts being moved to the core of their curriculum. Roucher and Lovano-Kerr (1995) advocated the use of team planning between classroom teachers and arts specialists to ensure that the art disciplines retained their integrity in the interdisciplinary unit of study.

The final question on the survey asked participants to indicate how the delivery of instruction in their classrooms had changed since their participation in LAIEA. The responses fell into the categories described by Catterall (1998) and Eisner (1998) of learning in the arts, learning through the arts, and ancillary outcomes of arts education. This supports the work of Wilson (1997) and Irwin and Reynolds (1995). Wilson contends that in schools that employ comprehensive arts education, the arts are seen as important in their own right as well as an integral part of the overall academic instruction. The work of Irwin and Reynolds (1995) is also supported in that they noted

that the arts should be taught both as disciplines as well as part of interdisciplinary units.

### **Recommendations**

The following recommendations for further research are offered based on the review of literature and the findings from the study:

1. As noted by Winner and Hetland (2001) further research should explore the similarities of characteristics in schools that grant the arts a serious role. Schools with strong arts programs and high academic achievement should be studied to see what other similarities they share. This finding could help further explain how schools with strong arts programs have high academic performance.
2. This research could be replicated using the eighth grade LEAP 21 scores in the areas of language arts, mathematics, science, and social studies.
3. This research could be replicated using a norm-reference instrument in other states that have a comprehensive based arts education institute based on the Getty Institute.
4. A longitudinal study of the academic achievement of fourth grade students taught in comprehensive arts education schools would be appropriate.

### **Implications for Education**

Based on the review of literature, results, and conclusions of this study, the following implications are suggested:

1. Students in schools where faculties had been trained in the LAIEA scored significantly higher on the LEAP 21 in all sections than their comparison group. In this day of accountability, consideration should be given to an arts infused

program where students are given opportunities for hands-on, project-based learning and where aesthetic entry points are considered when planning instruction.

2. Continuing professional development opportunities should be explored in the area of comprehensive arts education.
3. When writing school improvement plans, faculties should consider a component on comprehensive arts education.
4. Schools who employ both arts specialists and classroom content area teachers should consider partnerships between these two groups. This partnership would foster an interdisciplinary role for the arts while solidifying the role of discrete instruction in the arts.

**APPENDIX A**  
**SUPERINTENDENT LETTER**

Date

Superintendent <<First Name>> <<Last Name>>

<<School District>>

<<Address>>

<<City>>, <<State>> <<Zip Code>>

Dear Superintendent <<Last Name>>:

I am requesting permission to survey teachers of grade four in the following schools in your district:

(school names)

I am conducting this research in partial fulfillment of the requirements for the Louisiana Education Consortium doctoral program in which I am currently enrolled. The study will investigate the role of the arts in academic achievement in the disciplines of language arts, mathematics, science, and social studies.

The results of this study may be used by school systems and individual schools to improve the delivery of instruction of the state benchmarks in language arts, mathematics, science, and social studies. The results of this study will be reported as aggregate data so that anonymity will be guarded for all participating schools and school systems. Principals of participating schools may receive as summary of the research upon request.

Each principal will receive teacher survey packets to be distributed to each teacher who has attended the Louisiana Institute for Education in the Arts. Each teacher will return the survey to the principal or school designee who will then collect them and return them to me in a self-addressed stamped envelope. The survey will take approximately 10 to 15 minutes to complete.

Please indicate your willingness to participate in this study by completing the form at the bottom of this letter. Please fax the completed form back to me by Friday, May 3 as I am attempting to mail the surveys to the schools the following week in an effort to complete this project by the end of the school year.

Thank you for your time and consideration as well as your prompt response to this request.

Sincerely,

Libby Manning

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\_\_\_\_\_ Yes, the schools named above may participate in the survey.

\_\_\_\_\_ No, this system will not participate in the survey.

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Superintendent Signature

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Date

**APPENDIX B**  
**PRINCIPAL LETTER**

Date

<<First Name>> <<Last Name>>, Principal  
 <<School Name>>  
 <<Address>>  
 <<City>>, <<State>> <<Zip Code>>

Dear <<Title>> <<Last Name>>:

With the approval of Superintendent (last name), I am requesting your assistance in surveying teachers at your school. This survey investigates the use of the integration of the arts into the curriculum, as well as its impact on academic achievement.

The results of this research will be useful in school and district reform efforts. The results may have an effect on the future of the delivery of instruction of our state benchmarks. Principals in participating schools may receive a summary of the results of the study upon request to share with teachers and other stakeholders.

Enclosed are survey packets for teachers at your school. Please disseminate these packets to all faculty members who have attended the Louisiana Institute for Education in the Arts. (Their names are listed on the paper attached to the surveys.) Contained in each teacher packet is a letter of consent, a letter of explanation, and a survey. In order for me to receive these in a timely manner, I am asking for you or a member of your office staff to collect these surveys and return them to me in the enclosed stamped and addressed envelope. The survey will take approximately ten minutes to complete.

Your participation is critical to the success of this research. I truly value your responses. I have asked that the surveys and questionnaires be completed within five days of your receipt of them as I am under time constraints to complete this project. I realize that your time is of great value, and I sincerely appreciate your prompt attention and your earnest cooperation in this endeavor. If you have any questions, feel free to contact me.

Sincerely,

Libby Manning  
[lmanning@aep.latech.edu](mailto:lmanning@aep.latech.edu)  
 (318) 257-3469

**APPENDIX C**  
**HUMAN SUBJECTS CONSENT FORM**



## HUMAN SUBJECTS CONSENT FORM

**The following is a brief summary of the project in which you are asked to participate. Please read this information before signing the statement below.**

**TITLE OF PROJECT:** The Effects of Instruction Utilizing the Arts on Academic Achievement of Fourth Grade Students

**PURPOSE OF STUDY/PROJECT:** To determine the impact of an integrated arts program on the academic achievement of fourth grade students.

**PROCEDURE:** Teachers from selected schools will be asked to respond to survey questions regarding the level of arts integration in the curriculum.

**INSTRUMENTS AND MEASURES TO INSURE PROTECTION OF CONFIDENTIALITY/ANONYMITY:** The instrument used for this project is a survey containing a set of questions developed by the researcher concerning the level of arts integration in the curriculum. Data collected will remain confidential.

**RISKS/ALTERNATIVE TREATMENTS:** There are no risks associated with participation in this study. Participation is voluntary.

**BENEFITS/COMPENSATION:** None

I, \_\_\_\_\_, attest with my signature that I have read and understood the description of the study, "The Effects of Instruction Utilizing the Arts on Academic Achievement of Fourth Grade Students" and its purpose and methods. I understand that my participation in this research is strictly voluntary and my participation or refusal to participate in this study will not affect my relationship with Louisiana Tech University or my grades in any way. Further, I understand that I may withdraw at any time or refuse to answer any questions without penalty. Upon completion of this study, I understand that the results will be freely accessible to me upon request. I understand that the results of my survey will be anonymous and confidential, accessible only to the principal investigators, myself, or a legally appointed representative. I have not been requested to waive nor do I waive any of my rights related to participating in this study.

\_\_\_\_\_  
Signature of Participant or Guardian

\_\_\_\_\_  
Date

**CONTACT INFORMATION:** The researcher listed below may be reached to answer questions about the research, subjects' rights, or related matters.

Elizabeth F. Manning

**HOME:** 120 Turkey Creek Road Ruston, LA 71270

**PHONE:** (318) 251-3657

**E-MAIL:**

Members of the Human Use Committee of Louisiana Tech University may also be contacted if a problem cannot be discussed with the experimenters:

Dr. Terry McConathy (318) 257-2924

Dr. Mary M. Livingston (318) 257-2292

Mrs. Deby Hamm (318) 257-2924

**APPENDIX D**  
**TEACHER LETTER**

Date

Code #: \_\_\_\_\_

Dear Classroom Teacher:

With the approval of your superintendent and principal, I am gathering information for a research study titled "The Effects of Instruction Utilizing the Arts on Academic Achievement of Fourth Grade Students." The purpose of this study is to examine the role of the arts in relationship to instruction in language arts, mathematics, science, and social studies instruction.

By completing the attached survey, you are agreeing to participate in this study. Your participation is voluntary. Participant responses will be confidential, identified only by the code number found at the upper right-hand corner of the form. Please answer each item honestly and to the best of your ability and understanding. After completing the survey, please mail the survey in the self-addressed, stamped envelope provided.

As a full-time teacher, I am very much aware of your busy schedule, and I realize that your time is limited. The enclosed survey will take you approximately 10 to 15 minutes to complete. Your knowledge on this topic is of great value to me and to this study. Please try to complete this survey within 5 days of your receipt of it, as I am under time constraints to complete this project, and I would like you to be a part of this research. Again, thank you for your time and your participation in this endeavor.

Your prompt response is greatly appreciated. If you have any questions regarding this project, you may e-mail me at [lmanning@aep.latech.edu](mailto:lmanning@aep.latech.edu).

Sincerely,

Libby Manning  
Kindergarten Teacher  
A.E. Phillips Laboratory School  
Ruston, LA 71272

**APPENDIX E**  
**SURVEY**

**Louisiana Alliance for Education in the Arts  
Participant Survey**

For questions 1-6 please circle the letter that best reflects your answers to the following questions. Please write your answer for question 7 in the space provided or on the back if room does not permit.

1. I attended the LAIEA training in the following year:  
 a. 1997                      b. 1998                      c. 1999                      d. 2000                      e. 2001
2. What session of the training did you attend?  
 a. visual arts              b. music                      c. dance                      d. dramatic arts
3. What is your grade level?  
 a. 1<sup>st</sup>    b. 2<sup>nd</sup>    c. 3<sup>rd</sup>    d. 4<sup>th</sup>    e. 5<sup>th</sup>    f. 6<sup>th</sup>    g. other: please specify \_\_\_\_\_
4. How often do you consult with the arts specialists or other teachers at your school concerning arts related instruction in your classroom?  
 a. weekly    b. twice a month    c. monthly                      d. other: please specify \_\_\_\_\_
5. When do you plan with the arts specialists? (Please circle all that apply.)  
 a. during planning times    b. after school              | c. specified staff development  
 d. during the summer months              e. other: please specify \_\_\_\_\_
6. How did you disseminate the knowledge/training that you received at the Louisiana Institute for Education in the Arts to the other faculty at your school?  
 a. At a staff development session at the beginning of the year upon your completion of the training  
 b. At specified staff development times throughout the year  
 c. Other: please specify \_\_\_\_\_
7. How has the delivery of instruction in your classroom changed since you have been through the training with LAIEA?

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