


2008

The Infusion of Theater Arts in the Teaching of Language Arts: Its Impact on the Academic Achievement of Fifth Grade Students

Margaret P. Campbell
Seton Hall University

Follow this and additional works at: <https://scholarship.shu.edu/dissertations>

 Part of the [Art Education Commons](#), [Educational Methods Commons](#), and the [Elementary Education and Teaching Commons](#)

Recommended Citation

Campbell, Margaret P., "The Infusion of Theater Arts in the Teaching of Language Arts: Its Impact on the Academic Achievement of Fifth Grade Students" (2008). *Seton Hall University Dissertations and Theses (ETDs)*. 1638.
<https://scholarship.shu.edu/dissertations/1638>

The Infusion of Theater Arts in the Teaching of Language Arts:
Its Impact on the Academic Achievement of Fifth Grade Students

By

Margaret P. Campbell

Dissertation Committee

Elaine Walker, Ph.D., Mentor

Martin Finkelstein, Ph.D.

Charles Achilles, Ed.D.

Nancy Lauter, Ed.D.

Submitted in Partial Fulfillment of the Requirements for Degree

Doctor of Education

College of Education and Human Services

Seton Hall University

2008

SETON HALL UNIVERSITY
COLLEGE OF EDUCATION AND HUMAN SERVICES
OFFICE OF GRADUATE STUDIES

APPROVAL FOR SUCCESSFUL DEFENSE

Doctoral Candidate, **Margaret Campbell**, has successfully defended and made the required modifications to the text of the doctoral dissertation for the **Ed.D.** during this **Spring Semester 2008**.

DISSERTATION COMMITTEE

(please sign and date beside your name)

Mentor:

Dr. Elaine Walker

Elaine M. Walker 3/13/08

Committee Member:

Dr. Martin Finkelstein

[Signature] 3/13/08

Committee Member:

Dr. Charles Achilles

Charles Achilles (SWW) 3/13/08

Committee Member:

Dr. Nancy Lauter

External Reader:

The mentor and any other committee members who wish to review revisions will sign and date this document only when revisions have been completed. Please return this form to the Office of Graduate Studies, where it will be placed in the candidate's file and submit a copy with your final dissertation to be bound as page number two.

Abstract

The Infusion of Theater Arts In The Teaching of Language Arts: Its Impact On The Academic Achievement of Fifth Grade Students

The researcher investigated the impact of an infused theater arts program consisting of drama, social studies, and language arts on the academic achievement of fifth grade students in 7 middle and elementary public schools in an urban school district. In addition, the researcher examined the influence of this infused theater arts model on the behaviors of students and teachers within the same setting.

The primary measures used were language arts scale scores obtained from the state's standardized tests, New Jersey Assessment of Skills and Knowledge (NJASK5), and students' first and fourth marking period grades. Students' and teachers' self-reported reflections were used to assess behaviors. Two-way analysis of variance (ANOVA) was used to examine the effects of gender, school, and socioeconomic status on students' academic achievement. Chi-square tests were used to analyze students' marking period grades, students' behaviors, and teachers' behaviors.

Data revealed that the infused theater arts program did have a significant impact on students' academic achievement. The data also showed that students who participated in the infused theater arts program for 1 year or more outperformed their peers who participated with the traditional curriculum for the same period of time. Significant differences were observed in students' mean scores across schools.

The influence of the infused theater arts program on students' and teachers' behaviors were significant for some measures assessed. When teachers' responses were analyzed, the influence appeared to vary across schools.

Acknowledgements

This dissertation has been the most challenging academic endeavor in my life. I had to be strong. Throughout the process, I became more confident that God was the source of my strength. For this I am grateful. Additionally, I would like to extend my appreciation and gratitude to several people whose help, guidance, and encouragement contributed to the successful completion of this project.

First, I would like to thank and acknowledge the members of my dissertation committee. To my mentor, Dr. Elaine Walker, thank you for providing access to your data base, and for allowing me to discover the meaning behind numbers. To Dr. Charles Achilles, thank you for sharing your wealth of knowledge, and expertise; the guidance you provided was invaluable. Dr. Martin Finkelstein, your calm manner and thought-provoking questions added to the success of this project. To Dr. Nancy Lauter, you have truly inspired me to work towards this achievement. Thank you.

In addition, I offer my gratitude and thanks to the following individuals. Dr. John Collins, as my advisor, you've always assisted in making those choices that were most beneficial to my success. Thank you for giving of your time to help me succeed. To my classmate, Lauren McFadden, your help and support were appreciated. To Carmine Tabone, Executive Director of the Educational Arts Team, and Nancy Healy, District Supervisor, Visual and Performing Arts, thank you for sharing your immense knowledge, and providing answers to my questions about the infused theater arts program.

To my friends and family, thank you for your love, support and encouragement throughout this process. To my sister, Leila Frank, I'm forever grateful to you for the contribution you've made to my life. To my children, Faunda and Nicol Campbell, thank you. I couldn't have succeeded without your help. Finally, I want to thank my husband, Walter I. Campbell, who stood by my side every step of the way to this phenomenal accomplishment.

Table of Contents

Chapter	Page
I. Introduction.....	1
NCLB: The Impact on Art Education.....	4
The Role of Art.....	5
Statement of the Problem.....	6
Purpose of the Study.....	8
Significance of the Study.....	9
Theoretical Framework.....	9
Emergent Constructs.....	12
Research Questions.....	14
Research Hypothesis.....	14
Limitations of the Study.....	15
Delimitations of the Study	15
Definition of Terms.....	16
Organization of the Study	17
II. Review of Research, Theory and Literature.....	18
The Brain: An Interconnected Whole.....	19
Principles of Brain-based Learning.....	22
Learning Styles and Multiple Intelligence Theories.....	25
Learning Style Theory.....	26

Multiple Intelligences Theory.....	28
Social and cognitive Developmental Theorists.....	30
Art and Cognition.....	37
Art Programs and Studies.....	39
Humanitas.....	39
Integrating Writing into the Arts.....	40
Learning to Read Through the Arts.....	41
What is Integrated Curriculum?.....	43
Rationale for Integration Curriculum.....	44
Studies of Arts Integration.....	45
III. Methodology.....	52
Research Design.....	52
Research Hypotheses	55
Participants.....	56
Instructional Setting.....	59
Instrumentation.....	62
Validity and Reliability Issues.....	65
Treatment.....	66
Data Analysis.....	67
IV. Results.....	70
Research Question 1.....	72
Research Question 2.....	84
Research Question 3.....	96
Research Question 4.....	107

V. Summary of Findings, Discussion, and Recommendations.....	113
Methods of Research.....	114
Research Questions.....	115
Summary of Findings.....	115
Research Hypothesis 1.....	115
Unhypothesized Findings.....	118
Research Hypothesis 2.....	121
Unhypothesized Findings.....	122
Research Hypothesis 3.....	127
Research Hypothesis 4.....	129
Discussion.....	131
Implications for Policy and Practice.....	133
Implications for Future Research.....	136
References.....	138
Appendix A-Treatment Teacher Survey-2007	145
Appendix B- Theatre/Arts Infusion Project: Teacher Assessment.....	154
Appendix C-Student Survey.....	157
Appendix D- Summary of Means and Standard Errors.....	162

List of Tables

Table	Page
1. Distribution of Population by Gender and Socioeconomic Status.....	54
2. Configuration of Fifth Grade Group	54
3. Description of Participants: Membership Status	57
4. Description of Participants: Membership Status and School	58
5 School Descriptive Statistics.....	61
6 Score Range : New Jersey Assessment of Skills and Knowledge.....	63
7 Data Sources and Analysis by Research Questions.....	69
8 Analysis of Variance for Language Arts Scale Scores Based on Membership Status and Gender.....	74
9 Analysis of Variance for Language Arts Scale Score Based on Membership Status and School.....	78
10 Analysis of Variance for Language Arts Scale Scores Based on Membership Status and Socioeconomic Status.....	82
11 Significance Levels for Marking Period Grades.....	85
12 First Marking Period Language Arts Grades Earned by Treatment and Control Groups Within Membership.....	87
13 Fourth Marking Language Arts Period Grades Earned by Treatment and Control Groups within Membership.....	89
14 Significant Levels for First and Fourth Marking Period Grades Outlined by Gender.....	90

15	First Marking Period Language Arts Grades Earned by Treatment and Control Groups Compared by Gender.....	91
16	Fourth Marking Period Language Arts Grades Earned by Treatment and Control Groups compared by Gender.....	92
17	Significance Levels for First and Fourth Marking Period Grades Outlined by Socioeconomic status.....	93
18	First Marking Period Language Arts Grades Earned by Treatment and Control Group Compared by Socioeconomic Status (HSES & LSES).....	94
19	Fourth Marking Period Language Arts Grades Earned by Treatment and Control Group Compared by Socioeconomic Status (HSES & LSES)	96
20	Progress of In-Class Behaviors outlined by Membership Status.....	98
21	Teacher Ratings of Students' Learning Behaviors	100
22	Percentage of Teachers Reporting Improvement in Pro-cognitive Behaviors for Infused Theater Arts Students	101
23	Students' Self-Report of Activities within the Classroom Treatment/Intervention Groups.....	103
24	Students' Ratings of Attributes by Membership Status	105
25	Ratings of Belief Measures within Treatment Status.....	108
26	Treatment Teacher Ratings of Belief Measures Across Schools.....	110

List of Figures

Figure	Page
1. Factors Influencing Student Achievement.....	13
2. Estimated Marginal Means of Language Arts 07 Scale Score: Gender.....	75
3. Estimated Marginal Means of Language Arts 07 Scale Score: School.....	79
4. Estimated Marginal Means of Language Arts 07 Scale Score: SES.....	83

CHAPTER I

INTRODUCTION

Since the introduction of the Elementary and Secondary Education act (ESEA) signed into law in 1965 the federal government has invested over 130 billion dollars toward the improvement of America's public schools (The White House, 2002). Investments have been directed toward multiple initiatives in an effort to improve students' performance at both the elementary and secondary levels. The quest for such improvement continues to be the focal point of most political endeavors.

Reforming public education has been the dominant theme permeating political agendas for decades. Ever since the publication of *A Nation at risk* (April 1, 1983) politicians have attempted to increase reform measures with the avowed aim of improving the nation's education status. In 1989, this report prompted then President George Bush to convene a governors' conference on education. The outcome of this was the Goals 2000 Act, signed into law by President Clinton March, 1994 which, embraced the theories of standards-based education reform. Five years later, President Clinton piloted a new version of the earlier effort, *America, 2000*. Clearly, policymakers' attempts to revamp the education system have not achieved the desired outcome.

The No Child Left Behind Act (2002), signed by current President George Bush, has reauthorized a number of federal initiatives directed at improving student performance by increasing standards of accountability for states, school districts, and

schools. As outlined by the U.S. Department of Education (2001), NCLB is based on four guiding principles:

1. Stronger accountability and results,
2. More freedom for states and communities,
3. Encouraging proven education methods,
4. More choices for parents.

Under the sections of this law, schools are expected to meet adequate yearly progress (AYP), defined by a set of indicators set out by the various state department of education. All students are required to attain proficiency levels in language arts literacy, mathematics, and science by the year 2014. Each school's proficiency statistics in each area (language arts & mathematics) and student subgroup will be compared with statewide benchmarks (NJDOE 2002). Such comparisons will ultimately determine each school's success.

As a result of NCLB, urban schools are faced with multiple state and federal mandates. Funding for these schools is largely dependent on the students' ability to achieve AYP. Budget cuts and the need to improve students' standardized test scores are driving forces within these institutions. Such stringent measures propel educators to identify and implement strategic reform in an effort to improve students' performance.

School districts and schools whose students fail to make AYP toward statewide proficiency goals will, over time, face corrective action and restructuring. With the focus on accountability, stringent measures are meted out to schools and districts whose students do not measure up to the state's standards. Sanctions range from schools being placed on early warning lists, to offering students a choice of schools with accompanying

funds, and ultimately a complete restructuring of the school. Coupled with these sanctions, urban districts in New Jersey receiving Abbott funds under the *Abbott v. Burke* decision on parity funding (1997), must also comply with all *Abbott* dictates.

The performance of many of these institutions, specifically schools that do not meet the state's standards, have been seriously questioned, and the use of any funds allotted to those districts is under extensive scrutiny.

Although many reform programs have been instituted in urban schools to enhance student performance, many minority and low socioeconomic status (SES) students continue to perform below the level of their peers in suburban districts (New Jersey State Report Card, 2005). Many students in those districts continue to show disinterest in their work and act out with negative behaviors, which ultimately impact the teaching/learning process. Yet, these students need to experience success. Educators must therefore examine current curriculum in an effort to provide avenues to encourage these youngsters to succeed academically and socially. The curriculum is one crucial aspect that should be addressed.

Some pedagogical practices emphasize the importance of an integrated approach to curriculum in creating the optimum learning environment for students (Caine & Caine 1994; Drake & Burns, 2004; Jensen, 2000). This holistic concept has as its basic premise the total involvement of the learner. Proponents of this integrated approach contend that the individual's personality consists of many elements such as the intellect, emotions, the body impulse, intuition, and imagination, which must all be activated if learning is to take place. In multiple intelligence (MI) theory, Gardner (1993) offered that individuals have different learning competencies and encouraged the use of varying learning pathways to

capitalize on students' diverse abilities. The implication for educators here is that the optimization of student learning is largely dependent on the diversity provided in their learning environment (Jensen, 2005)

Because elements of the arts are structured to target the total learner, use of the arts in instruction can prove to be an effective modality through which optimum learning takes place (Catterall, Chapleau, & Iwanaga, 1999; Ingram & Riedel, 2003; Upitis & Smithrim, 2003). The social and personal benefits for individual students should not be marginalized. Developing a curriculum that infuses the arts into core subjects, such as language arts and social studies would propel students towards active participation. This could then be transformed into maximized learning and eventually improved overall academic performance.

NCLB: The impact on art education

With the passing of the Goals 2000: Educate America Act (PL.103-227), the arts were written into federal law as a core academic subject in K-12 public schools. Currently the arts maintain their status under PL 107-110, NCLB (2001). However, the government's effort to reshape public education through NCLB has influenced art education both positively and negatively. Under NCLB funds were earmarked to be used for art education; however, it is only in some schools that students gain the benefits of such funds.

The proliferation of mandated tests in the public school system has certainly influenced the instructional time allotted in the curriculum for non-tested subjects such as art. Although art has been identified as a core academic subject, the focus of the

assessments that determine a student's proficiency level is directed toward language arts, math, and science. While art assessments are projected, the scores for these assessments will not be counted as a measure for AYP.

The place of art in the curriculum under NCLB is uncertain. As schools become more entangled with test prep activities, art programs are reduced to a more enrichment activity. In early 2004, a Council on Basic Education survey indicated that 25% of principals had cut arts education and 33% anticipated future reductions. In schools with high minority populations, 36% reported decreases, and 42% anticipated decreases in art programs; only 10% reported increases or anticipated these (Chapman, 2004).

The Role of Art

As a discipline, art engages multisensory modalities, and the sensory system is the primary resource through which the environment is experienced. "The arts can serve as models of what educational aspiration and practice might be at its very best" (Eisner, 2002a, p. xii). Yet in many present day schools, the arts are placed at the rim rather than at the core of education. Eisner (2002a) argued that the arts teach students to act and to judge in the absence of rules, to rely on feel, to attend to nuance, to choose and assess the consequences of one's choices, and to revise and make other choices.

"The arts have an important role to play in refining our sensory system, and cultivating our imaginative abilities"(Eisner, 2002a, p. 4). Art requires the ability to deal with multiple processes simultaneously. Because the art (drama, music, and dance) as a discipline engages multisensory modalities, learning through the arts assumes a parallel to the principles of brain-based learning previously mentioned. Caine and Caine (1994)

and Jensen (2000) ascribed to the notion of the brain thriving on multipath, multimodal experiences, and the brain functioning as a multiprocessor that performs many functions simultaneously. The thrust of this argument pivots around the concept that all learning is non-linear and complex.

According to Eisner (2002a) the experiences provided in art are pivotal to growth, because these experiences become a medium for education. "Education," Eisner asserted, "is the processes of learning to create ourselves, and it is what the arts both as a process and as the fruits of that process promote"(p. 3).

Statement of the Problem

Schools are required to show adequate yearly progress (AYP). The principal measure of AYP is students' performances on standardized tests; however, students in urban districts continue to underachieve on these tests. Failure to meet the accountability requirements results in stringent measures which include a loss of funds. It is therefore vital that new reform initiatives be implemented in urban schools in an effort to raise students' academic standing.

As the importance of accountability saturates the American society, educators throughout the nation are investigating alternate reform initiatives. This quest for successful education practices is a vital component in the effort to stimulate students' cognitive ability. The role of such practices in preparing students to meet stringent state standards that determine student success, as well as the success of their schools, is paramount. This success is primarily based on students' achievement on individual states' standardized test. In New Jersey, language arts literacy is a targeted area in which

students are assessed. Current statistics show that in the state of New Jersey, 24.3% of economically disadvantaged students are partially proficient in language arts compared to 6% of the non-economically disadvantaged students. Within the framework of the New Jersey Core Curriculum Content Standards (NJCCCS), the principles underlying language learning are:

1. Language use is an active process of constructing meaning.
2. Language develops in a social context.
3. Language ability increases in complexity if language is used in increasingly complex ways.
4. Learners achieve language arts literacy not by adding skills one-by-one to their repertoire, but by using and exploring language in its many dimensions.

(New Jersey Language Arts Literacy Curriculum Framework, New Jersey Department of Education, 2004).

The implications of these multifaceted concepts undergirding the curriculum must be made explicit if students are to experience success in language arts. The current curriculum limits the scope to which the teaching of language arts is extended to encompass each of the elements outlined within the scope of the framework. An interdisciplinary approach to the curriculum can provide a wider spectrum that offers the multi-dimensions to which the framework refers (Drake & Burns, 2004; Vars, 2001; Vars & Beane, 2001).

Although integration within the curriculum is promoted, efforts to integrate subjects are mainly focused on core areas such as math, science and language arts. However, academic literature concerning the arts provides valuable insights into the benefits of the

arts (Eisner, 2002b; Efland, 2002). Studies (Burton, Horowitz, & Abeles 1999; Catterall et al., 1999; Corbett, Wilson & Morse, 2006; Ingram & Riedel 2003; Rabkin & Redmond, 2006; Wolf, 1999) also support the belief that integration of the arts in the curriculum can enhance student academic gains. If the arts are capable of promoting such gains, an arts integrated curriculum can be the catalyst needed to stimulate students' cognitive behaviors.

The extent to which an integrated language arts, social studies, and theater arts integrated curriculum influences specific areas of learning has not been established. This becomes pertinent as educators strive to implement alternate pedagogical practices with the intent of improving student performance. It would be valuable to investigate how the infusion of theater arts in the language arts and social studies curriculum affects the cognitive abilities of fifth grade students in urban elementary schools. The problem in many urban public schools today is the underachievement of students at the state's standardized tests.

Purpose of the Study

The purpose for this study is to examine whether student performance in language arts--as measured by standardized test scores, and students' marking period grade--have significantly improved through the use of an infused theater arts curriculum. This study will also seek to identify the influence of this program on students' and teachers' behaviors. Research has established that integrating the fine arts in the school curriculum enhances academic performance (Burton, et al., 1999; Catterall, et al., 1999; Wolf 1999). Thus, as the quest for successful educational practices intensifies, the findings of this

study may provide a model that other school leaders could implement in an effort to improve students' academic status.

Significance of the Study

The significance of this research is intrinsically linked to two major areas of public education, specifically in the state of New Jersey: accountability and finance. In this period of high-stakes testing and budget cuts, educators are earnestly seeking creative ways of improving student achievement, as well as ways of managing the continually decreasing funds appropriated by the state and federal governments for their schools.

Based on the findings, supported by learning theories, educators can implement the arts infused curriculum to improve students' academic performance. The infused program will also allow school leaders to address curriculum areas (the arts and social studies) that are less emphasized because these are not components of the state tests. Simultaneously, the burden on school budgets to employ separate faculty to teach separate subjects will be reduced since all teachers will be able to implement the program with minimum training. Creech and Bhavnagri (2002) suggested that teachers do not need experience or background in drama to effectively use it as teaching tool.

Theoretical Framework

Modern theoretical concepts about cognition and learning have spurred new research into the way students acquire knowledge. Over time, social and cognitive theorists have offered varying views about the way learning occurs.

Social learning theorists (Bandura, 1977; Vygotsky, 1978) position the learning process as a primary outcome of socialization. This school of thought affirms that learning is a direct result of interrelationships among behaviors, environmental factors, and personal characteristics. The acquisition of new knowledge is facilitated when the environment converges with personal characteristics and personal experiences. Social cognitive theorists further argue that learning is a function of the extent to which individuals are able to reflect upon, and internalize, their own successes or failures.

Cognitive developmental theorists from as early as Piaget in the 1920s focus on the mental process people use as they acquire new knowledge and skills. The focus is placed on the unobservable processing, storage, and retrieval of information. Emphasis is on personal meaning, generalizations, principles, advanced organizers, discovery learning, coding, and superordinate categories.

More recently, Gardner (1993) proposed the theory of multiple intelligences that outlined nine personality characteristic groupings that influence the way people learn. Each individual, Gardner contended, has a dominant intellectual competency that if capitalized upon allows the learner to maximize his/her potential. However, Gardner cautioned that these competencies “exist not as physically flexible entities, but only as potentially useful scientific constructs” (p. 70).

In keeping with the view of the learner’s uniqueness espoused in Gardner’s theory of multiple intelligences, Dunn and Dunn (1993) proffered a learning-style model. According to Dunn and Dunn (1999) learning style is the way that students begin to concentrate on, process, internalize, and remember new and difficult academic

information. The core of this model revolves around the concept that each student processes and absorbs information in a different way.

The advent of brain-based theories has also stimulated new interest in the complex ways the brain processes information. Viewed as a multiprocessor, a single preference or learning style is not in keeping with the brain's operations. Of importance to these theorists is the optimization of learning. Jensen (2000) referred to the "windows of opportunity," a peak period in which exposure to the appropriate stimuli can optimally increase the learner's natural appetite for learning. According to Jensen, the brain strives on multipath, multimodal experiences.

This concept of the brain as a multiprocessor has become a major thrust in many pedagogical practices. Caine and Caine (1994) emphasized the importance of educators understanding how multifaceted the brain is in order to more fully appreciate the complexities in education. Ormrod (2006) submitted that regardless of the perspective taken to understand learning it can reasonably be assumed that learning has a biological basis in the brain.

In numerous classrooms today students are passive recipients of bits and pieces of knowledge handed down by teachers. Often they are unable to connect and make sense of such knowledge in order for active learning to take place. However, in a study Eisner (2002b) found that kids learn best when they are active and have choices and when learning is relevant to their personal lives.

Generally, curriculum content is separated into subjects. The subject matter is taught in isolation, with no provision made for the uniqueness of the learners. The lack of real life problems and issues dealt with in the classroom minimizes learners' abilities

to fully capitalize on their own experiences, or make meaningful connections which are critical to the learning process. These traditional educational practices used in schools have, over the years, proved unsuccessful for urban students. Educators must align their thoughts with the realization that student abilities, interests, and experiences are as pivotal to curriculum planning as the structure of the discipline itself.

As educators seek new ways to encourage student learning, it is imperative that they develop instructional practices to encompass every aspect of the learner. This would require implementing the curriculum as an integrated whole in which instruction is delivered to meet students' academic needs, thus enabling them to make connections and relate these to their life experiences.

Emergent Constructs

Framed within the context of pertinent social and cognitive theories, brain-based principles, learning styles and multiple intelligence concepts, the emergent constructs define the framework within which the study was examined. Germane to this study is the pivotal role of the learning environment, which is strategically linked to the curriculum and teacher behaviors. According to Jensen (2000), "A challenging environment forces the brain to flex its thinking muscles" (p. 77). Based on this notion, when the environment provides a good balance of challenge, empowerment, and support to motivate students, and piques their interest, then student efficacy is nurtured, and an ideal learning situation is created. Figure 1 depicts elements of the emergent constructs which will frame this study.

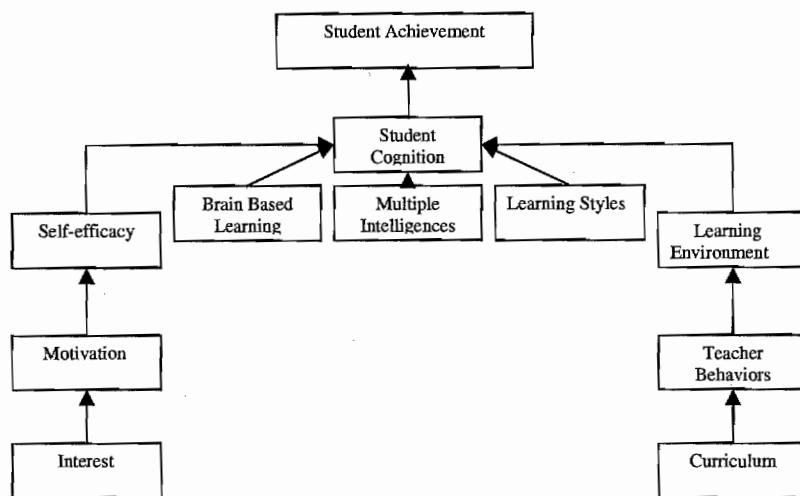


Figure 1. Factors influencing student achievement

Research Questions

Four major questions guide this investigation

1. What is the impact of the infused theater arts program on fifth grade students' academic achievement as measured by language arts performance on the New Jersey Assessment of Skills and Knowledge (NJASK5)?
2. What is the impact of the infused theater arts program on fifth grade students' academic achievement as measured by language arts marking period grades?
3. How has the infused theater arts program influenced students' learning and pro-cognitive behaviors?
4. How has the infused theater arts program influenced teachers' behaviors?

Research Hypotheses

1. Fifth grade students' academic achievement, as measured by language arts performance on the New Jersey Assessment of Skills and Knowledge, will be significantly impacted by the infused theater arts program.
2. The infused theater arts program will significantly impact fifth grade students' academic achievement as assessed by language arts marking period grades.
3. The infused theater arts program will significantly influence students' learning and pro-cognitive behaviors.
4. Teachers' behaviors will be significantly influenced by being involved in the infused theater arts program.

Differences will be tested for significance ($p \leq .05$)

Limitations of the Study

This study was subjected to the following limitations:

1. During the study, students were allowed to cross over between groups; this spill-over effect created fluctuations in the sample size and could have influenced the results obtained from the study.
2. Teachers' and students' responses were self-reported; this could have created a bias in the study.
3. Data used in this study were obtained from a secondary source; hence the researcher had no control over the available data.
4. High students' mobility rate, which is characteristic of urban schools, could have influenced the results of this study

Delimitations of the Study

This study was framed within the context of the following delimitations:

1. The study was delimited to 430 fifth grade students in pre-assigned classrooms in seven elementary and middle schools in one district.
2. Data used to analyze students' and teachers' behaviors were delimited to the responses provided in the data base.
3. Another delimitation of this study was the selection of students from the lowest performing schools.

Definition of Terms

Abbott Decision: a court mandate resulting from the Abbott vs. Burke court case (1997) which stated that additional funds be given to poor urban districts to equate their per pupil expenditure with that of wealthy suburban districts.

Control group: the matched groups of students in each program not participating in the infused theater arts program.

Integrated curriculum: a curriculum that makes connections across disciplines (Drake & Burns, 2004).

Infused theater arts program: a integrated curriculum model consisting of drama, social studies and language arts.

High Socioeconomic Status (HSES): a classification used to identify students in this study who qualify to pay for school lunches under federal government guidelines.

Low Socioeconomic Status (LSES): a classification used in this study to identify students who qualify to receive free or reduced rate lunches under the federal government guidelines.

Pro-cognitive behaviors: behaviors that support student learning

Traditional curriculum: a curriculum consisting of the core subjects, language arts, mathematics, science, social studies, with each discipline taught separately.

Treatment/ intervention group: groups of students participating in the infused theater arts program.

Organization of the Study

This study is presented in five chapters. Chapter I provides an overview of the study including background information, a statement of the problem, a theoretical framework, limitations and delimitations of the study, and definition of terms used in the study.

Chapter II includes a review of research theory and literature related to brain-based learning, social and cognitive developmental theories, arts and cognition, as well as integrated curriculum.

Chapter III describes methodology used in this study. The participants, instrumentation, and statistical analyses are also described in this chapter.

Chapter IV presents the results of the study. In Chapter V the researcher summarizes and discusses the results of the findings, with some implications for policy and future research.

CHAPTER II

REVIEW OF RESEARCH, THEORY AND LITERATURE

Cognitive and social learning theorists have over time offered several views about learning. Social learning theorists view the learning process primarily as social and contend that learning occurs through socialization, while cognitive learning theorists focus on the mental process people use as they acquire new skills and knowledge. More recently, theorists have emphasized the importance of the brain's functions, one's learning styles, as well as defined dominant areas of intelligence in an effort to understand how individuals learn. The literature reviewed for this study had as its core elements, social and cognitive learning theories that are predisposed to support multidimensional learning. Additional literature reviewed included previous studies conducted on arts integrated curriculum, together with pertinent literature on factors impacting student learning. In this chapter, literature and theories reviewed pertained to:

1. Brain-based learning
2. Learning styles and multiple intelligences
3. Social and cognitive development
4. Art and cognition
5. Art programs and studies

Within this frame the researcher established the rationale for an infused theater arts curriculum.

The brain: An interconnected whole

The human thinking organ--the brain--possesses a virtually inexhaustible capacity to learn. This multifaceted organ has distinctive regions to process various mental functions independently, yet no individual region functions by itself; instead, there is an inherent symbiotic relation among these regions (Jensen, 2000). Here, the undergirding concept is the brain's ability to thrive on multipath, multimodal experiences. Jensen submitted that "the brain simultaneously operates on many levels, processing all at once a world of colors, movements, emotions, shapes, smells, sounds, tastes, feelings...it assembles patterns composes meaning, and sorts daily life experiences from an extraordinary number of clues" (p. 12).

Caine and Caine (1994) proposed an analogous relationship between the brain and a city. The writers proffered those physical structures of a city function as institutions such factories, banks, schools, utility companies, and shopping centers that are all interconnected by streets, rails, and wires. The vital element of this configuration however, are the people who make the city and organization work; they transmit information from one area to another. Some people work in clusters, while others work alone, but at any specified time, people are working as an n interconnected whole at simultaneous tasks within the city. Like a city, the parts of the brain are interconnected; several functions are taking place at the same time in parallel unison. The brain is therefore perceived as a parallel processor with interconnected, interdependent parts in the same way the institutions in a city are interrelated. There are numerous interconnections within the brain. Sylwester (1994) outlined how modern studies of brain

structure show incredible complexity of approximately 100 billion neurons, each connected to thousands of other neurons and forming more connections than there are atoms in the entire world. Because of its unique, parallel, and interrelated processing ability the brain is described as holographic, global, or interconnected.

The largest most highly developed portion of the brain (80%) is the cerebrum. This part of the brain is responsible for higher order thinking and decision-making functions. This region consists of four primary areas called lobes. The occipital lobe is responsible for vision; the frontal lobe is responsible for judgment, creativity, problem-solving and planning; the parietal lobe is responsible for processing higher sensory and language functions; and the temporal lobe has as its primary responsibility the regulation of hearing, memory, meaning, and language. However, the overlap of functions and interconnectedness of these sectors are pivotal to the brain's overall functions.

Within the brain, learning begins on a microscopic cellular level, a basic functional unit of the nervous system: the neuron. Neurons are responsible for informational processing. Neurons continuously convert chemical signals to electric signals. A single cubic meter of brain tissue has over one million neurons, some of which can be lost over time. Neuronal growth, however, can be stimulated by physical exercise, complex thinking activities, and intense mental stimulation. Therefore the importance of these cells to learning should not be minimized (Jensen, 2000).

One critical finding was that experiences cause the physical structure of the brain to change. Caine and Caine (1994) referred to this phenomenon as brain plasticity. Scientists determined that environmental stimuli can cause the brain to grow physiologically, and throughout its lifespan, the brain has the capacity to grow and

change with use. The more challenging the stimuli received by the brain, the greater the likelihood that a new pathway will be created, and the more meaningful the information is perceived by the brain, the greater is the potential for long-term memory retention. The implication for educators here should be a question of the quality and quantity of stimuli presented to the students via the school environment, curriculum, and related activities.

Brain research supports psychologists' theories that there are critical periods in cognitive development that are continuously being shaped by experiences, and that enriched environments contribute to more highly developed brains (Caine & Caine, 1994). Variety is critical to the optimal functioning of the brain. Alternating periods of rest and activity supported by differing modalities such as creativity and novel stimulation contribute positively to the brain's functions. Jensen (2000) cited Scheibel who offered "unfamiliar activities are the brain's best friend" (p. 154). Such characteristics suggest that teaching and learning cannot be effective if perceived as a narrow, bland, and boring activity.

The construction of the brain predisposes this organ to process much more demanding intellectual activity than that in which it is usually engaged. Educators must become aware of the complex operations of this intellectual organ if the optimum benefits are to be derived by learners. The dominant element in this interconnectedness may be an understanding of the fact that learning is a product of everything that we are (Caine & Caine, 1994).

Pivotal to learning is the element of building success, confidence, and practical intelligence. Educators must keep students stretching, so that their range of situations in

which they function effectively and continually increases. Discovering and applying the content and context in which this form of learning flourishes are vital for educators across the nation. According to Respress and Lutfi (2006, p. 24) the creative power of the brain is released when human beings are in environments that are positive, nurturing, and stimulating. But many schools are at the other extreme: dull, boring, and rigid learning milieus in which students are the passive recipients of information. Implied here is the need for change.

An integrated theater arts curriculum with its varied activities requiring higher order thinking skills, individual and group efforts, as well as controlled freedom within the learning environment would definitely create the type of atmosphere necessary to stimulate the brain's creative power. "Optimizing the use of the human brain means using the brain's infinite capacity to make connections – and understanding what conditions maximize this process" (Caine & Caine, 1994, p. 5).

Principles of Brain-based Learning

The emergence of brain-based learning during the 1980s has evoked a broad multidisciplinary body of research that fueled a new way of thinking about learning. Jensen (2000) described brain-based learning as learning in accordance with the way the brain is naturally designed to learn. Brain-based learning considers what is natural to the brain and the way in which the brain is impacted by circumstances and experiences.

Unknowingly, traditional educators have in many ways inhibited the brain's ability to learn by employing strategies that are ultra-linear, structured, and predictable (Jensen, 2000). Over the years, the results have been the cultivation of many frustrated

learners who perpetuate the cycle of underachievement particularly in urban schools.

The challenge for educators is to discover and understand the environment that allows for the optimal functioning of the brain.

The following principles summarized by Caine and Caine

(1994, *pp.* 87-95) have relevant implications for the learning process.

1. Information processing is carried out by the brain in a parallel mode. Therefore one's thoughts, emotions, and imaginations are simultaneously processed with other forms of information processing. Consequently, for learning to be effective, activities must be structured to address all aspects of the brain's operation.
2. The search for meaning is innate to the brain, and there is inherent automaticity in the need to act on one's environment. While the learning environment necessitates formality and stability, it should also in unison provide avenues to satisfy the learners' craving for novelty, discovery, and challenge. Lifelike experiences that provide learners with a variety of choices could foster that type of environment.
3. The brain formulates patterns in its quest to discern meaning. Nurturing effective learning necessitates that the learner be able to create meaningful and personally relevant patterns to the brain. Ideally, information should be perceived in a way that allows the brain to formulate patterns, since it is designed to generate such patterns and has the ability to resist meaningless information imposed on it. Concise information helps the learner derive meaning; when a curriculum is integrated patterns become easier to discern.

4. Emotions play a vital role in patterning. Learning is influenced by emotions and mindsets based on expectancy, personal biases, and prejudices, self-esteem, and need for social interaction. Separation of the cognitive and affective domains is impossible; these act as complementary factions the learning process. Therefore, the need for a sound emotional climate in the classroom.
5. The right and left hemispheres of the brain process and organize information differently. The tendency is for one sector to reduce the information into parts for processing, while the other works with the information as a whole. However, these sections are inextricably linked, and the processes occur simultaneously. Learning becomes difficult when either parts or wholes are omitted, because within the brain's schema, each sector derives from and gives meaning to the other.
6. The brain learns from having a direct focus as well as from information that is on the periphery. Implied in the concept are the benefits that can be derived from the use of visuals such as charts, illustrations, set designs, art, and music when used to enrich the learning environment.
7. The brain continuously learns on both a conscious and unconscious level. Without the learner's awareness the brain, at the unconscious level interacts with signals that are peripherally perceived. Eventually this information emerges into the learner's consciousness and a connection is made through that experience. This suggests that students' experiences at both the conscious and unconscious levels are pivotal building blocks upon which learning can be built.

8. The brain has at least two types of memory systems. The spatial system allows for instant memory of experiences and is specifically motivated by novelty. It is this system that drives the search for meaning. Education that focuses on rote learning suppresses the activity of the spatial memory system. The counterpart to the spatial memory system is the seat of rote learning, which does not support the transfer of learning, and to a great extent, stifles the development of understanding. Actually, it inhibits the development of the brain.
9. Each individual has a unique brain. Although each person's brain has the same set of systems, these are integrated differently in each individual. Because learning changes the structure of an individual's brain, increased learning ultimately enhances the brain's uniqueness. Learning experiences should therefore be multimodal to accommodate the diverse spectrum of learners, as well as provide substantial variety to attract and sustain individual interests and talents.

The thrust of these brain-based concepts is centered around the learning process as an integrated whole with the learner's life experiences and a stimulating environment as critical catalysts in the entire process

Learning Styles and Multiple Intelligence Theories

In recent decades, theorists (Dunn & Dunn, 1993; Gardner, 1993; Kolb, 1983; Myers-Briggs, 1977) have proposed learning styles and multiple intelligence theories in an attempt to explain human differences and to design educational models around these differences. Founded on psychoanalytic principles, learning style theories are focused on

the different ways people think and feel as they solve problems, create new products, and interact. In contrast, multiple intelligence theories, with principles of cognitive science, are centered around the way cultures and disciplines shape human potential. However, there exists a degree of commonality between these theoretical frames that is germane to this integrated arts study. Both theories combine psychological insights, as well as an examination of the arts and culture.

Learning Style Theory

Learning style theory originated with Carl Jung (1923) who noted major differences in the way people perceived (sensation vs. intuition), made decisions (logical thinking vs. imaginative feelings), and how active or reflective the group was during interaction (extraversion vs. introversion). According to Dunn and Dunn (1993), learning style is the way that students begin to concentrate on, process, internalize, and remember new and difficult academic information. Learning style theories have at the core the differences in individuals based on heredity, upbringing, and environment, which create differences in individuals' preferences for learning environments and learning modalities. Although the uniqueness of individuals is emphasized in these theories, learning style theorists also propose that learning styles are not fixed. Most learning styles are flexible and can be adapted to various contexts at different levels as the learner matures.

Several learning style theories have evolved, each with a different view of this construct. In this infused theater arts study emphasis, is placed on the models most commonly applied to the education setting. The Myers-Briggs Type Indicator (1977) which was an application of Jung's original work, focused on how personality affects the

way people interact, and the effects of those interactions on the way individuals respond to each other in their environment. The Dunn and Dunn model (1993, 1999) focused on identifying relevant stimuli that may influence learning and manipulating the learning environment to promote learning. Kolb's experimental learning theory (1983) employed a four-stage cycle of learning in which the immediate or concrete experiences provide a basis for observations and reflections that ultimately lead to experimentation and learning.

Although learning-style theorists interpret the personality in various ways, most models commonly exhibit the following traits:

1. Information processing: distinguishing between the way individuals sense, think, solve problems, and remember information;
2. Personality patterns: focusing on attention, emotion, and values;
3. Perceptual modalities: defining biologically based reactions to individuals' physical environment and representing the way those individuals adopt the data.

Within the scope of learning style theories, learners are generally classified as:

(a) concrete and abstract perceivers, and (b) active and reflective processors. Concrete perceivers absorb information by doing, acting, sensing, and feeling; while abstract perceivers do so by analyzing, observing, and thinking. Active processors create meaning from new information by immediately using it; reflective processors make sense of an experience by reflecting and thinking about it. Traditional schooling tends to favor abstract perceivers and reflective processors. Pertinent to this arts infused study is the ability of the arts to affect those concrete perceivers with the need to act, sense, and feel to make learning meaningful.

Proponents of learning styles argue that students earn statistically higher test scores when they are taught and tested with resources and strategies responsive to their learning styles. Dunn and Dunn (1999) posited that many people can learn things that are easy for them without using their learning styles, but all people can learn new and difficult information better when they capitalize on their styles. Inherent in learning style theories is the belief that the extent of the individual's learning is largely dependent on whether the educational experience is geared towards the learner.

Learning style theories can potentially assist teachers and students in understanding concepts that can enhance the teaching and learning process. Therefore providing an array of experiences through an infused theater arts program would create an atmosphere in which varied learning styles are addressed

Multiple Intelligences Theory (MI)

Gardner's multiple intelligences theory (1993) challenged the classic view of intelligence as an inherent human trait that can be measured by a test. Specifically, the MI theory challenged the notion of IQ tests, which were designed to determine students' level of success at school. Instead, Gardner presented a pluralistic view of the mind by identifying different aspects of cognition, while proposing that people have many different mental strengths and contrasting cognitive styles. Gardner proposed that there are at least eight different ways people have of perceiving and understanding the world.

Ingrained in Gardner's theory of MI (2004) is the notion of the existence of several relatively autonomous human intellectual competencies, or human intelligences, which can be fashioned and combined in a multiplicity of ways. Such intelligences,

Gardner contended, can work in harmony, yet, under the most favorable conditions the particular nature of each intelligence would become dominant. According to Gardner, intelligence is the ability to solve problems or fashion products that are valued in one or more cultural settings. This theorist submitted that intelligences do not exist as physically verifiable entities, but as potentially useful scientific constructs. These intelligences vary in strength and amalgam in each individual and are integrally linked to one's brain functions and culture.

Gardner (2004) submitted that each person has a unique cognitive profile, and individuals respond in different ways to different kinds of content such as language, music, or other people. In proposing this theory, Gardner posited that education should have at its core an understanding of how minds differ and proposed the formation of individual-centered schools geared toward the optimal development of each student's cognitive profile. This is an effort to provide opportunities that allow students to exercise their intellectual area of expertise. Within the context of the multiple intelligence theory, students are allowed to show understanding in a variety of ways; hence, the risk of catering to one profile of intelligence is marginalized.

Gardner's eight intelligences include: (a) linguistic intelligence: the ability to use language to express oneself; (b) logical-mathematical intelligence: the ability to understand the underlying principles of causal systems; (c) spatial intelligence: the ability to represent the spatial world internally; (d) bodily kinesthetic intelligence: the ability to use the whole body to solve problems and be productive; (e) musical intelligence: the capacity to think in music, to be able to hear patterns, recognizes, remember and manipulate them; (f) interpersonal intelligence: one's ability to

understand other people; (g) intrapersonal intelligence: having an understanding of oneself; (h) naturalistic intelligence: this designates the human ability to discriminate among living things as well as sensitivity to other features of the natural world.

More recently, Gardner (2006) proposed a ninth intelligence: existential, which points to one's ability to contemplate phenomena or questions beyond sensory data.

While there exist limitations in Gardner's multiple intelligence theory, and the learning style theories of Dunn & Dunn, Kolb, and Myers-Briggs, the nature of the two concepts suggest that utilizing the strategies with students engaged in the infused theater arts program can further enhance the optimization of learning. Silver, Strong, and Perini (1997), in integrating the concepts of multiple intelligences and learning styles offered that these two concepts are complementary in that each respond to the weakness of the other.

Social and Cognitive Developmental Theorists

Piaget

According to Ormrod (2006), the concept of cognitive structures is central to Piaget's theory. These structures are patterns of physical or mental action underlying specific acts of intelligence, and correspond with specific stages of child development. Piaget refers to these as schemas. Piaget's theory pivoted around the following ideas:

1. Children are active and motivated learners: Children are naturally curious about the world, and actively seek out information to help them understand and make sense of it.

2. Children construct knowledge from their experiences: Children's knowledge is not limited to a collection of isolated pieces of information; instead, children blend their experiences into an integrated view of how the world operates.
3. Children learn through two complementary processes of assimilation and accommodation: Children interpret each new event within the context of their existing knowledge (assimilation) and, at the same time may modify their knowledge as a result of the new event (accommodation).
4. Interaction with one's physical and social environments is essential for cognitive development: Active experimentation with the physical world is essential for cognitive growth, and interaction with other people fosters a realization that one's own views of the world are not necessarily completely accurate or logical.
5. The process of equilibration promotes progression toward increasingly complex thought. During this process, children seek a balance between equilibrium and disequilibrium. When children can comfortably explain new events with existing schemas, they are in a state of equilibrium, but when they encounter events that cannot be adequately explained within the existing schemas, a state of disequilibrium occurs. Equilibration and children's intrinsic desire to achieve equilibrium promote the development of more complex levels of thought and knowledge.
6. Cognitive development is stage-like in nature: Children cannot think, and reason as adults do until their brains have developed sufficiently to allow such

thinking. Based on this concept, Piaget proposed four distinct stages of cognitive development. These stages of cognitive development included:

(1) the sensorimotor stage, (2) the preoperational stage, (3) the concrete operations stage, and (4) the formal operations stage.

During the sensorimotor stage, which lasts from about birth to 2 years old, sensory and motor skills are predominant; schemes are based on behaviors and perceptions. The child uses the senses and motor abilities to understand the world, and has the ability to represent and think about external objects and events in one's mind.

At the preoperational stage, which lasts from about 2 years until 6 or 7 years, intuition dominates. Children can think about objects beyond their immediate view, but do not reason logically and are unable to view situations from another's perspective.

During Piaget's third stage of cognitive development, concrete operations, (6 or 7 years until 11 or 12 years) the child's thought process becomes more organized and logical. There also exists evidence of deductive reasoning, and a show of mastery of basic concepts of objects, number, time, space, and causality.

The final stage of Piaget's developmental levels, formal operations (11 or 12 years through adulthood) logical reasoning processes are applied to abstract ideas as well as concrete objects (Ormrod, 2006)

While critics argue that Piaget's views of development were restrictive, the constructs of this theory continue to provide a basic model for cognitive developmental theories, and are useful.

Vygotsky

Vygotsky, a contemporary of Piaget, refuted Piaget's theory that development was largely an individualized process with an end point as goal. Instead, Vygotsky proffered that social interaction profoundly influenced cognitive development, and that such development was a process to be analyzed rather than a product to be obtained. Vygotsky stated that adults fostered children's cognitive development in an intentional and somewhat systematic manner (as cited in Ormrod 2006).

Vygotsky's theory has at its core the notion of the Zone of Proximal Development (ZPD). The ZPD is the distance between the actual development level as determined by independent problem solving, and the level of potential development as determined through problem solving under adult guidance, or in collaboration with more capable peers (Vygotsky, 1978). This zone bridges the gap between what is known and what can be known; at this point that learners need assistance for learning to continue.

Vygotsky's theory was guided by the following principles:

(as cited in Ormrod, 2006, *pp.*34-37).

1. Through both informal and formal channels, adults convey to children the way in which their culture interprets and responds to the world. The theorist proposed that as adults interact with children, they share the meanings they attach to objects, events, and human experiences, and to the extent that such cultural traits are passed down, children of different cultural backgrounds will acquire differences in knowledge, skills and ways of thinking.
2. Complex mental processes begin as social activities. As children discuss objects and events with adults and other knowledgeable individuals they gradually

incorporate into their own thinking the ways in which people around them talk about and interpret the world, and they begin to use the words, concepts, symbols and strategies that are typical to their culture.

3. Children can perform more challenging tasks when assisted by more advanced and competent individuals. Vygotsky distinguished between the child's actual developmental level and the child's level of potential development, and suggested that a true assessment of the child's capabilities should be based on independent performance as well as performance, when assistance is rendered.
4. Challenging tasks promote maximum cognitive growth. Vygotsky proposed that there is little benefit to be gained if a child performs a task that can be accomplished independently. Instead, it is suggested that cognitive development is promoted if children are allowed to attempt tasks they can accomplish only in collaboration with a more competent individual.
5. Play allows children to stretch themselves cognitively. When children play, their behaviors must conform to certain standards or expectations, by adhering to such restrictions on their behaviors, children learn critical skills for successful participation in the adult world.

Vygotsky (1978) framed the learning process within a child's culture. Culture directs what the child thinks and ultimately conditions the thought process. Based on the Vygotsyan theory, children learn from their culture with the help of adults and their peers. When presented with problem solving experiences shared with individuals in their lives, the child is afforded the opportunity to develop cognitively. Therefore, the child's cognitive abilities cannot be understood in isolation; rather, cognitive development

should be positioned within the construct of social settings: the home, the school, family, and the total environment.

Bandura

Like Vygostky, Bandura situates learning within a social context. Bandura's social cognitive theory has at the core the concept of observational learning. Bandura (1977) contended that most human behavior is learned observationally through modeling. Pivotal to the process of observational learning are the following principles: (a) attention: the learner must pay attention to the model; (b) retention: the observer must be able to remember the observed behavior; (c) motor reproduction: the observer must be able to replicate the action; (d) motivation: learners must want to demonstrate what they have learned.

In addition, Bandura (1977), suggested that the optimization of observational learning is achieved when the following criteria are met: (a) the modeled behavior is first organized and rehearsed symbolically, then overtly enacted; (b) the observed behavior results in outcomes valued by the observer; and (c) the model is admired, and the behavior has a functional value. However, Bandura cautioned that people have self-control over the behaviors they adopt; an attribute that is exercised through cognitive or thought processes. This process is integrally tied to an individual's perceived self-efficacy. Self-efficacy beliefs determine how people feel, think, motivate themselves, and behave. It is therefore one's level of self-efficacy that conditions successes or failures in their endeavors.

Self-efficacy is defined as one's perceived capabilities for learning or performing actions at designated levels (Bandura, 1994). Grounded in the theoretical framework of social cognitive theory, self-efficacy affects one's behaviors and the environments with which one interacts. Ormrod (2006) cited (Bandura, Schunk, Zimmerman, Bandura, & Martinez-Pons) who concur that students' sense of self-efficacy affects their choice of activities, their goals, and their efforts and persistence in classroom activities. Jensen (2000), supported this view when he offered that what a person believes about him or herself impacts learning in a powerful way.

Based on the self-efficacy theory, self-efficacy can be enhanced when people are motivated to achieve, when they are exposed to positive academic and social models, and when they are taught strategies that they can use to overcome challenges. (Schunk & Meece, 2005). Within the context of schooling, self-efficacy is influenced by how instruction is structured, the ease or difficulty of learning, teacher feedback and attention, competition, and grading practices. Because students must believe that they are capable of accomplishing school tasks, it is important to develop a sense of self-efficacy. Therefore, in addition to exposing students to a variety of models, teachers should be primarily concerned with providing a positive psychological and physical climate in which student efficacy is nurtured, and learning is optimized. Bandura, like Vygotsky emphasized the pivotal role of adults within the environment and their influence on the child's development.

Both Vygotsky and Bandura framed cognitive development within a social context. However, ingrained in the theories of Piaget, Vygotsky, and Bandura is the concept that cognitive development is fostered as the learner interacts with the

environment. The type of environment and the adults within the environment are positioned as vital components to the viability of the learning process. While the preceding section focused on learning theories, the following section focuses on art and cognition.

Art and Cognition

In keeping with the focus of this study--arts integration--it is essential to look at the role of the arts in an integrated scheme, and to explore what cognitive abilities the arts, as a discipline, can nurture within the context of an infused curriculum.

All forms of art can stimulate the brain and arouse intellectual curiosity. They ignite creativity and provide students with opportunities to critically interpret the world around them (Appel, 2006). Art helps language development (Eisner, 2002a). The development of similes and metaphors and the formation of new words to convey the distinctive sense of the qualities perceived in artistic compositions enhance linguistic development. Skillfully planned and orchestrated exercises in art can help to define the kind of thinking students will learn to do, and this, in turn, influences the kind of cognitive skills students acquire.

The arts aim to promote the child's ability to develop the mind through creative experiences. Such experiences require students to employ higher order thinking. Work in the arts contributes to the development of these subtle and complex forms of thinking. This, therefore, demands that the curriculum in place be structured to provide the relevant opportunities for such thinking to take place.

In a study of over 2000 students in Grades 4-8, researchers from Teachers College, Columbia University, found that there was a significant relationship between rich in-school arts programs and creative cognitive and personal competencies needed for academic success. Other studies (Burton, et al., 1999; Catterall, et al., 1999; Ingram & Riedel, 2003; Upitis & Smithrim, (20003) offered similar claims. However, Eisner (2002b) cautioned about justifying the use of the arts through their contribution to boosting academic performance in core subjects.

In making a cognitive argument for the arts Efland (2002) presented an integrated view of cognition. He summarized as follows: (a) the mind is a computational function using symbols; (b) cognition is a constructive process used to enable individuals to secure meaning; (c) learning includes the acquisition of social reality. Efland disputed the view of most school curricula that situates the arts in the affective domain, while the sciences and other core subjects are placed in the cognitive domain. Rather, Efland proposed that the defining factor should be the types of cognitive operations and knowledge-seeking strategies that various disciplines have to offer. Undergirding this concept is the position that different disciplines utilize differing cognitive abilities for their mastery; therefore, the richer the array of subjects experienced by students, the more cognitive potentials the learners are likely to develop. An integrated curriculum would avoid the dualism of subjects placed in the affective/cognitive domains, as well as provide the environment for subjects to blend together affording students the opportunity to develop varying cognitive abilities.

Gardner (2004) offered that much of human representation and communication takes place via symbols. In the MI theory, Gardner suggested that each of the identified

intelligences operates with a unique symbol system that integrally involves the arts. Here it is implied that the wider the range of intelligences or symbol systems represented the wider the range of artistic qualities exercised. Since each of the arts offers unique ways of representing ideas, the integration of arts with other disciplines can be justified in terms of the cognitive abilities they nurture. Over time, successful programs in the arts have been implemented. In the subsequent sections some of these programs will be addressed.

Art Programs and Studies

Throughout the years art and humanities programs and studies have been implemented in an effort to help improve student social and academic performance. In this section literature on successful arts programs and integrated studies is reviewed.

Humanitas

This is an interdisciplinary thematic, team-based approach to teaching based on the principle that virtually all students can learn from the conceptual approach. The program was first developed as a prototype for the Cleveland High School Humanities Magnet in Los Angeles. Since 1986, Humanitas has been extended to 29 of the 49 schools in the district. Over 180 teachers and 3500 students are involved in the program. The heart of this program is teacher collaboration; teachers work together to develop

interdisciplinary themes and curricular materials. The core of integrated subjects includes English, social studies, and art; however, combinations of courses in philosophy, math, science, studio art, or dance were also offered (Aschbacher, 1991).

The goal of Humanitas was to use an issue-centered approach to help students improve analytical and critical judgment skills. This program operated within the parameters of the regular program; students took a daily core of several Humanitas classes together for block periods then spent the remainder of their days in regular classes. An assessment of the program showed statistically significant effects on students' writing and content knowledge within the first year and indication of continued improvement throughout the other years. Other student gains were also reflected in improved student attendance and reduced dropout rates.

Major challenges encountered in this program included release time for teachers to participate in planning and training sessions, as well as the cost of copying materials. In spite of the challenges, the success of the Humanitas program is credited to the program's ability to create a community of scholars within the larger, impersonal, school context. (Aschbacher, 1991)

Integrating Writing into the Arts

Arts as basic curriculum (ABC) is a grant-funded program with the express goal of integrating writing into the arts. The program was a part of the South Dakota arts Council (SDAC) Arts in Education Programming. The ABC encompassed five discipline -- visual arts, music, drama, dance, and creative writing--extending over the

K-12 range of the arts education curriculum. Originally, the program was piloted at six sites over a five-year period. Two participating districts were the Deubrook Area School District and the Sioux Valley School District (Jager, 2000).

The ABC curriculum team leaders and district teachers developed curriculum for this program collaboratively. Five integrated units were developed based on various themes; each with a focus on the arts as well as an emphasis on creative writing. Activities included, but were not limited to journal reflections, designing brochures, power point presentations, reader's theater, and the development of graphic organizers.

An assessment of the ABC program revealed that students who were given the opportunity to be responsible, engaged learners tended to see and understand how their learning in all areas were related. Further, the students were able to reinforce concepts they learned and build on prior knowledge. Students standardized test scores at Sioux Valley school district have shown constant improvement, and the scores of students in the Deubrook District have continued to show marked improvement due to the infused writing program (Jager, 2000).

*Learning to read through the arts (LTRTTA) Educational Resources
Information Center, ERIC (1994).*

The underlying principle of this program was to encourage students to combine the affective and cognitive domains and use this as a base to promote learning. The program was the brainchild of O'Brien who conceptualized that activities, which involved the senses, were intrinsically meaningful to children, and that children were

more apt to find success doing such activities. A direct offshoot of the Guggenheim museum in New York, and its partnership with O'Brien, the program initially targeted 60 inner city students during a summer session (Zamdmer, 1994).

LTRTTA has extended to over 28 states across the United States. Pivotal to the success of this program was a mechanism in place to reliably measure the effect of LTRTTA experience on children through standardized reading tests. The program's capacity to demonstrate significant results, augmented by a self-critical experimental attitude, together with a generous allocation of time provided for staff development also added to the success of this program.

The findings also showed that participating children who were reading from 2 to 5 years below grade level exceeded or equaled the expectation for children who were regarded as successful. In 1974, LTRTTA, was designated as one of the 12 exemplary programs endorsed as effective by the United States Office of Education.

Based on this model other successful programs were also developed. In 1973, the Cloisters learning to read through the arts program evolved. The Cloisters program utilized the collection at the Cloister Museum to facilitate its program. In 1975 another successful endeavor, Reading improvement through the arts (RITA) evolved as a secondary school initiative with a focus on improving visual perception skills in art classes (Zamdmer, 1994).

The Office of Educational Evaluation (New York, 1992) reported that the rate of growth based on reading scores of participating students was significantly beyond statistical expectations and even exceeded the growth normally expected in a full year's program. The success of these programs spurred educators throughout the United States

as well as Australia, Canada, and South Africa to request similar curricula to be implemented in those education systems. The following section examines aspects of the integrated curriculum.

What Is Integrated Curriculum?

Integrated curriculum is about making connections (Drake & Burns, 2004). In academic literature the most common terms associated with making connections within and across disciplines include: integrated, interdisciplinary, and multidisciplinary (Drake & Burns, 2004; Lake, 2001).

The underlying concept of this connection is the fusion of knowledge from different disciplines to create a learning situation in which concepts and skills presented to the learner become both meaningful and relevant based on a connection that extends beyond curriculum boundaries.

Drake and Burns (1994) offered three dimensions to integrated curriculum.

1. Multidisciplinary, integration which focuses directly on the disciplines with a theme as the core;
2. The interdisciplinary approach in which the curriculum is organized around common learning across disciplines;
3. The transdisciplinary approach in which the curriculum is organized around student questions and concerns.

Germane to this study is the multidisciplinary approach in which three subjects are taught based on a theme with an integrated culminating activity. Such integration offers a movement away from the teaching of isolated facts and figures toward a greater

connectedness between concepts, resulting in more meaningful and concrete understanding.

Rationale for Integration of Curriculum

Cromwell (1989) studied how the brain processes information. Cromwell noted that the brain organizes new knowledge based on previous experiences, and the brain has the ability to process many things simultaneously. Cromwell also noted that the holistic experiences are recalled quickly and easily.

Caine and Caine (1991, 1994) connected neuropsychology and educational methodologies and offered that the search for meanings and patterns is a basic process in the human brain. Proponents of brain-based learning concur that learning is best accomplished when information is presented in meaningful, connected patterns, since this is in keeping with how the brain learns best. Applied in the classroom, brain research supports integrated, interdisciplinary, multidisciplinary learning, as well as teaching strategies that are responsive to students' learning styles.

Lake (2000) cited Jacobs who offered that that the increase in state mandates related to a wide variety of issues, fragmented teaching schedules, the growing body of knowledge associated with individual disciplines, concerns about curriculum relevancy, and a lack of connections among disciplines underscores the urgency to implement different strategies in an effort to alleviate the education burden experienced in classrooms. Integration allows teachers to maintain accountability while designing learning experiences that are relevant to student interest (Drake & Burns, 2004).

In a meta-analysis of 30 integrated curriculum studies, Hartzler (2000) concluded that students in integrated programs consistently outperformed students in traditional classes on national standardized tests, statewide testing programs, and program-developed assessment. Furthermore, findings of this study showed that integrated curricular programs were successful in all four of the major academic areas, language arts, math, social studies, and science at all grade levels. Most beneficial were the programs utilizing thematic instruction and those emphasizing process skills especially with students of below average achievement levels.

Drake and Burns (2004) postulated that integration allows teachers to make deliberate decisions about how to best cover standards more efficiently across the disciplines, and when done well, potentially provides meaningful learning through relevant curriculum, enhancement of student engagement and academic achievement. In the subsequent section, some prior studies on arts integration are discussed.

Studies of Arts Integration

Arts integration is associated with academic gains in cross-content areas, and these gains are reflected in standardized test scores. Such integration appears to have more powerful effects on the achievement of struggling students (Rabkin & Redmond, 2006).

In a study of 23 arts integrated schools in Chicago, Illinois most serving low-income students, standardized test scores rose as much as 2 times faster than scores of youth in more traditional schools. The findings showed that low-performing students garnered the most success from these programs. Other gains experienced included social

and emotional changes in students' behaviors, increased teacher collaboration, and greater parental involvement

In another four year study conducted across 19 Minneapolis Public Schools involving students in Grades 3, 4, and 5, similar findings were revealed. The goal of this study was to assess the relationship between arts-integrated instruction and the achievement of students involved in the Arts for Academic Achievement Program (AAA). Using gain scores--the difference in the student's test scores from one year to the next--as an indicator of student learning, researchers determined that there was a significant relationship between arts-integrated instruction and student achievement in reading and mathematics (Ingram & Riedel, 2003). Further, the analysis showed a more powerful relationship between arts integration and student achievement for disadvantaged learners. The findings suggested that the intensity of the arts program made a difference in student learning and that the relationship between arts integration and achievement varied across subjects by program year. However, the relationship was not spread across grades for every student.

The Mississippi Arts Commission's whole school reform initiative (WSI) also conducted a study of over 10,000 students which revealed that students in participating WSI schools performed on par for both the state average for all Mississippi schools and a comparison group of schools. Schools were similarly matched both demographically and geographically, and the findings revealed that students within the WSI schools were more proficient in their literacy skills than either schools across the state or in the matched comparison groups. Further, 75 % of the higher implementation WSI schools met the state standards for growth in student literacy proficiency, whereas less than half of the

lower implementation WSI sites did (Corbett, et al., 2006). Other gains reported included increased knowledge retention when content was reinforced with the arts. Socially, students appeared to be collaborating and communicating with each other better, displayed higher levels of self-esteem, and showed more respect for others.

Arts integration can be viewed as an instructional strategy to bring the arts into the core of the school day and to connect it across the curriculum (Rabkin & Redmond, 2006). The social and academic benefits of arts integration, as supported by these studies, have vital implications for curriculum planners. In fact, in examining the centrality of the curriculum, Eisner (2002a) suggested that “when policymakers and educational theorists define a curriculum for a school or a classroom, they also define the forms of thinking that are likely to be promoted in the school”(p. 148). Arts integration with its distinctive contribution toward the development of thinking and communication skills may be viewed as a way to make education more meaningful, and thus, alleviate concerns over student achievement levels.

While the benefits of arts integration on student performance have been supported by these studies, critics caution that such integration is not an end in itself, but a means for accomplishing basic educational goals (Brophy & Alleman, 1991). Winner and Hetland (2002) argued that the relationships established by published studies are mainly correlation and do not show a causal relationship between art and academic achievement. The researchers contended that other factors could have contributed to student achievement gains and challenged art advocates to be able to identify the unique contributions made through arts integration.

However, the literature reviewed to this point made no claims against the importance of the arts. In making an argument for the place of the arts, Efland(2002) countered that the question should not be whether the arts are cognitive but rather, "what cognitive abilities do the arts provide that other subjects can neither provide, or do as well as the arts?"(p.157). Moreover, the notion is that what is distinctive about the arts is itself of value (Eisner, 2002b).

The value of the arts and its impact on students' cognitive and social behaviors has been reported in other studies. Researchers in the Center of Arts Education Research, Teachers College, Columbia University studied over 2000 public school students in grades 4-8 (Fiske, 1999). The study was designed to determine what cognitive, social and personal skills were developed through arts learning, if these had a more general effect on learning, and what conditions in schools supported that learning. The exploratory phase of this study focused on broad spectrums of arts learning. Other phases examined the influence of art on areas such as students' creative thinking ability, general competencies, perception of self as a learner, and school climate. Data were collected through the use of standardized measures such as inventories, standardized tests, questionnaires, as well as perception and inventory scales.

The study found significant relationships between rich in-school arts programs, and creative, cognitive, and personal competencies needed for academic success. Findings revealed that learning in an arts-rich school was complex and multidimensional and was most successful when supported by a rich, continuous and sequenced curriculum. Data also showed that children in the low-arts schools were less able to extend their thinking. There was a negative correlation between schools with a paucity of

arts instruction and all cognitive and personal dimensions of the study. Researchers reported that an apparent narrowly conceived curriculum, in which the arts were either not offered, or were offered in limited and sporadic amounts, exerted a negative effect on the development of critical cognitive competencies and personal dispositions (Burton, et al., 1999). It was also apparent that cognitive competencies were prevalent in schools where students have studied the arts, and this was evident in other subject disciplines. The researchers concluded that neither arts learning, nor learning other subjects is sufficient unto itself, but suggested that the relationship between the arts and other disciplines should be interactive rather than unidirectional.

A longitudinal study conducted by Catterall, et al., (1999) through the Graduate School of Education and Information Studies, University of California, Los Angeles followed more than 25,000 students in American secondary schools over a period of 10 years. The researchers explored interactions between the arts and human development and achievement. An analysis of the study revealed substantial and significant differences in achievement, attitudes, and behaviors between youths highly involved in the arts and those with little or no arts engagement. This achievement difference was also observed among economically disadvantaged youths

The findings revealed three major points:

1. Positive academic development for children engaged in the arts between 8th and 10th grades as well as between 10th and 12th grades.
2. Students who reported high levels of involvement in instrumental music over middle and high school years showed significantly higher levels of mathematics proficiency by Grade 12.

3. Sustained student involvement in theater arts resulted in gains in reading proficiency, gains in self-concept and motivation, as well as a high level of empathy and tolerance for others (Fiske, 1999).

Of importance to this study was the acknowledgement that the art forms differed in the skills and human interaction involved; hence, they impacted cognitive and motor processes differently.

The focus of one qualitative study, conducted by Wolf (1999), was an inquiry into why the art forms lend themselves to higher levels of students' academic performance, and under what specific circumstances the effects were realized. This multiyear study centered around, "Creating Original Opera" (COO), and chronicling what was termed "gregarious moments." The intent was to discover what happened in those gregarious moments as well as investigate why gregariousness improved what students were able to do.

The study involved classroom and specialist teachers in four classes; data were collected through classroom observations, teacher transcripts, and student ethnographies. An analysis of the data revealed that students in three of the four classrooms in the opera setting participated in more substantive ways in group interactions than students did in alternate settings. Other findings also suggested that there was a pattern in which collaborative interaction increased over time thus increasing student expertise in active participation and coherent work (Fiske, 1999).

The literature reviewed presented evidence in support of an arts integrated curriculum. It is apparent that a curriculum in which teachers integrate the arts with other subjects creates an environment that encourages student engagement in varied activities

simultaneously, as well as provides challenges and stimulation for learning to take place. In view of the brain's functions as a multiprocessor, a parallel can be drawn between this type of curriculum and the principles of brain-based learning previously mentioned. Children from enriched environments will have more highly developed brains, and that in itself increases the ability to learn (Caine & Caine, 1994). Teachers' creativity in instructional practices promotes enriched environments that provide the atmosphere for learning to take place.

Chapter II has presented a review of the research and literature relevant to this study. Chapter III presents the design of the study, methods, procedures, and data analysis techniques used in the study.

CHAPTER III

METHODOLOGY

This chapter describes the research methodology used in the present study. A brief statement of the purpose for this study is outlined, followed by the research design, and the research hypotheses. Thereafter, some details about the participants, the instructional setting, the instruments used to collect pertinent data, a description of the treatment/ intervention, and the procedures used to analyze the data are presented. The purpose of this study was to explore the impact of an infused theater arts program--consisting of drama, social studies, and language arts--on the academic achievement of fifth grade students in seven public elementary and middle schools in an urban school district. The researcher also explored the influence of the infused theater arts program on students' behaviors and teachers' behaviors within the same settings.

Research Design

In keeping with guiding principles outlined by Campbell and Stanley (1963), a randomized experimental design was used in the present study. Twenty-eight fourth and fifth grade classrooms were randomly assigned to the treatment, and twenty-eight to the control. This randomization was done by the researchers. However, there was some threat to the randomization process. This was primarily due to the fact that fifth grade students were allowed to crossover between groups. At the same time, the data analysis process employed allowed the researcher to control for such threats by analyzing and comparing outcomes for each group within the fifth grade sample coded membership. Within the

membership group, three fifth grade groups were given various levels of intensity of the treatment.

Statistical power was set for the student population at $.80$; $p \leq .05$; $d = .25$. The initial sample size was 1,149 students; approximately 50% comprised the control group, and 50% comprised the treatment/intervention group (See Table 1). Analysis of baseline data showed no significant differences between students in the treatment classrooms, and those in the control classrooms.

For the 3 years duration of this project, schools were asked to keep the students in original group assignments. This did not occur in all schools; hence; school effect was considered in this study. Five of the seven schools had minor spillovers; in two schools the crossover between treatment and control groups was relatively high. At the fifth grade level, this allowed the primary researchers to create subgroups for the purpose of comparing the effectiveness of the infused theater arts program.

The fifth grade group was configured using a factorial design (See Table 2). This factorial design allowed the researcher to measure the intensity of exposure to the arts integrated program and also to study whether or not participation in the arts at an earlier grade level was sustained. Crossover in groups primarily occurred in the third and fourth groups shown in Table 2.

Table 1
Distribution of Population by Gender and Socioeconomic Status

Variable	Treatment status		Total
	Treat	Cont	
Males	273	303	576
Females	282	291	573
Total	555	594	1,149
Free/reduced lunch	426	472	898
Paid Lunch	129	122	251
Total	555	594	1,149

Note. *Treat = treatment group* *Cont. = control group*

Table 2

Configuration of Fifth Grade Group

Sub-groups of subjects	Description of time in program	n	%
Intervention fifth graders who were intervention fourth graders	Students who were in the treatment/intervention for the two years	117	27.2
Control fifth graders who were control fourth graders	Students who were in controlled groups for two years	92	21.4
Control fifth graders who were intervention fourth graders	Students who participated in the intervention for one year; at the fourth grade level	103	24.0
Treatment fifth graders who were control as fourth graders	Students who are in the first year of the intervention. These students were in the control group at the fourth grade	118	27.4
Total	-----	430	100

Research Hypotheses

The review of research and related literature has shown that the integration of curriculum and instruction, specifically with aspects of the arts, within the traditional curriculum has improved students' academic achievement, and students' behaviors (see for example Burton et al., 1999; Catterall et al., 1999; Ingram & Riedel, 2003).

This study supplements the existing body of knowledge on integrated curriculum. The investigation focused on the impact of an infused theater arts program -- consisting of drama, social studies and language arts -- on students' academic achievement. Students' academic achievement was measured by students' performance in language arts literacy on the state's standardized test, and students marking period grades. Further, the researcher explored the influence of the infused theater arts program on students' and teachers' behaviors. The following set of hypotheses was used as benchmarks for assessing the impact/influence of the infused theater arts program.

1. Fifth grade students' academic achievement--as measured by language arts performance on the New Jersey Assessment of Skills and Knowledge--will be significantly impacted by the infused theater arts program.
2. The infused theater arts program will significantly impact fifth grade students' academic achievement, as assessed by language arts marking period grades.
3. The infused theater arts program will significantly influence students' learning and pro-cognitive behaviors.

4. Teachers' behaviors will be significantly influenced by being involved in the infused theater arts program.

Participants

Key variables utilized in this study were coded. Within the student sample, males were coded 0, and females were coded 1. Teachers were categorized as treatment-group or control-group teachers. Treatment-group teachers were coded 0, and control-group teachers coded 1.

The sample of participants involved in the present study was selected from a population of fifth grade students enrolled in seven public elementary and middle schools (PS) in an urban district. Students were taken from 28 fifth grade classrooms in elementary and middle schools. There were 14 treatment classrooms and 14 control classrooms. The student sample, labeled membership, consisted of four groups of fifth grade students totaling 430. The sample included students from both the control and intervention/ treatment groups. Within this study, the fifth-grade group (membership) was sub-divided into the following categories: (see Tables 3 & 4)

1. Intervention fifth graders who were intervention fourth graders: total 117.
2. Control fifth graders who were control fourth graders: total 92.
3. Control fifth graders who were in the intervention as fourth graders: total 103.
4. Treatment fifth graders who were control as fourth graders: total 118.

The first subgroup, intervention fifth graders who were intervention fourth graders, had 2 years of the treatment. The second subgroup, control fifth graders who were control fourth graders, was not exposed to any treatment. The third subgroup, control fifth graders who were in the intervention in the fourth grade, had one year of the

treatment in the fourth grade. The final sub-group treatment fifth graders who were control as fourth graders, started the intervention in the fifth grade.

Table 3

Description of Participants: Membership Status in Group

Students	Intervention fifth graders who were intervention fourth graders		Control fifth graders who were control fourth graders		Control fifth graders who were in the intervention as fourth graders		Treatment fifth graders who were control as fourth graders		
Gender	M 53	F 64	M 50	F 42	M 45	F 58	M 63	F 55	
Total	117		92		103		118		430

Note. *M = males in study; F = females in study.*

Total sample = 211 M (49%) 219 F (51%)

Table 4

Description of Participants: Membership Status and School

School	Intervention fifth graders who were intervention fourth graders	Control fifth graders who were control fourth graders	Control fifth graders who were in the intervention as fourth graders	Treatment fifth graders who were control as fourth graders
PS#11	19	10	17	17
PS#12	8	20	3	7
PS#20	16	18	20	17
PS#23	44	17	19	12
PS#27	4	19	40	26
PS#34	8	0	1	25
PS#8	18	8	3	14
Total	117	92	103	118

The classroom teachers who participated in the study were fourth and fifth grade teachers selected from the same seven schools. Teachers were randomly placed into treatment or control groups by the researchers. There were a total of 59 teachers: 28 treatment teachers and 31 control teachers. The teacher sample consisted of 51 females

and 8 males. Approximately 70% of all teachers had a teaching certificate, diploma, or license. In addition, some teachers in each school had master's degrees. In PS# 23: 38% of the teachers had a masters degree; in PS# 27: 35% had a masters degree; in PS#20: 42.% had a masters degree; In PS# 12: 35% had a masters degree; In PS#11: 43% had a masters degree; In PS# 8: 35% had a masters degree; in PS# 34: 33% had a masters degree.

Instructional Setting

The seven participating schools were affiliated with one of New Jersey's 30 Abbott Districts. This school district serves a multiethnic, multiracial population of about 30,076 students, and many of these students receive bilingual, and ESL instruction. With a median household income of \$37,862, the socio-economic status (SES) of families qualifies a large percentage of students to receive free or reduced lunch under federal guidelines determined by the Child Nutrition and WIC Reauthorization Act PL108-265(2004).

Participants were selected from seven elementary and middle schools and 28 classrooms within an urban school district. For each of the targeted schools, NJASK scores were among the lowest in the district. This characteristic was a defining factor in the selection of the seven schools for this grant-funded study. The seven schools selected were located in a densely populated urban area, with about 70% of the student population living below the poverty level (Census 2000). Among the seven targeted schools for this project poverty rates ranged from 70.5% to 80.4%.

The attendance in these seven schools ranged from 443 to 1502; the average daily attendance rate is 94.5%; the average mobility rate is 16.8%; average class size for fourth graders is 19.3, and for fifth graders 22.2. As of 2006 school year, only two of the seven schools PS#20 and PS#27 met the state of New Jersey criteria for adequate yearly progress (AYP). The other five schools were all classified as schools in need of improvement based on the mandates of the NCLB legislation.

The seven participating schools were referred to throughout the study as PS#11, PS#12, PS#20, PS#23, PS#27, PS#34, and PS#8. Students in these schools follow a core curriculum, which is aligned with the New Jersey Core Curriculum Content Standards (NJCCCS). This curriculum consisted of instruction in subjects of language arts, mathematics, science, social studies, health/physical education, and bilingual/ESL instruction. Only 4 of the 29 elementary and middle schools in this district have drama teachers. The other 25 schools have occasional visits from visiting artists.

At the time of the study, PS#11 was a K-8 school with a total enrollment of 785 students and an average daily attendance rate of 95.5%. The average class size in the fifth grade is 22.0 and 18.0 in the fourth grade. One of the other K-8 schools, PS#12, had a total enrollment of 443 students and an average daily attendance rate of 93.4%. With an average mobility rate of 19.0, the school's average class size in the fifth grade was 22.0 and in the fourth grade 22.5.

The only K-5 school in this study was PS#20 with a total enrollment of 608 students, and an average daily attendance rate of 94.0%. PS#20 is one of the two schools in this study that met the state's AYP requirements for the school year 2006-07. The average class size for the fifth grade in this school was 19.9 and in the fourth grade 19.3.

PS#23 is one of three schools in this study with the total enrollment exceeding a thousand students (1,502). With such a large student population, the average daily attendance rate is 93.9%, with a mobility rate of 18.3%. The average class size for the fourth and fifth grades is 18.8 and 22.6 respectively. This K-8 school, PS#27 also distinguishes itself as having met the state's requirements for AYP. The total school population is 1,142, with a daily attendance rate of 20.2. PS#34 is a K-8 school with a total population of 707 students, and a daily attendance rate of 93.6%. The average mobility rate is 19.5%, the average class size for the fourth grade is 15.5, and for the fifth grade 27.7. PS#8 is the third school in this study with a student population exceeding 1000. The total enrollment is 1,058, and the annual attendance rate is 95%. The mobility rate is 21.2, and the average class for the fifth grade is 22.8, and the fourth grade is 22.8(see Table 5)

Table 5

School Descriptive Statistics

Descriptive	PS#11	PS#12	PS#20 ^a	PS#23	PS#27 ^a	PS#34	PS#8
Information	K-8	K-8	K-5	K-8	K-8	K-8	K-8
Total enroll	785	443	608	1,502	1,142	707	1,058
Mobility rate	20.3%	19.1%	18.1%	18.3%	20.2%	19.5%	21.2%
Daily att. rate	95.5%	93.4%	94.0%	93.9%	96.1%	93.6%	95.0%
Av. class size	18.0	22.5	19.3	18.8	21.0	15.5	20.3
grade 4							
Average class	22.0	22.0	19.5	22.6	20.4	26.6	22.8
size grade 5							

Note. ^a achieved AYP status; Av = average; enroll = enrollment; att. = attendance

Instrumentation

In an attempt to ascertain the degree to which the infused theater arts program had an impact on students' academic achievement, data were collected from several sources including New Jersey Assessment of Skills and Knowledge (NJASK5), researcher-designed teacher and student questionnaire, and students, first and fourth marking period grades. The following outline provides detailed information about each of these data sets.

1. With the enactment of The No Child Left Behind legislation (2002), each state is required to administer annual standards-based assessments to all students from grades 3-8. These tests assess students, critical thinking skills in language arts literacy, mathematics, and science. The New Jersey Assessment of Skills and Knowledge (NJASK) is the standards-based assessment administered to all third, fourth, fifth, sixth, and seventh grade students within the state of New Jersey. The NJASK tests are administered to students at individual schools under strict state guidelines during the spring of each year. The underlying goal of this test to provide an indication of students' progress toward the achievement of the skills and knowledge outlined within the New Jersey Core Curriculum Content Standard (NJCCCS).

Since the focus this study was to assess students' performance in language arts literacy, it is important to describe the components that are assessed and the distribution of student scores on the New Jersey Assessment of Skills and Knowledge.

The NJASK language arts literacy tests skills in four content areas:

1. Writing

2. Reading
3. Working with texts(interpreting text)
4. Analyzing/critiquing text

Students are required to respond to performance-based tasks in writing, as well as multiple-choice and open-ended items for reading. Language arts scores are reported as scale scores with a range of 100 to 300. These scores determine students' levels of proficiency, which are categorized as advanced proficiency, proficiency, or partial proficiency. The scale score of 200 is the cut point between partially proficient and proficient students. The scale score of 250 is the cut point between proficient and advanced proficient students. The score range is outlined in table 6.

Table 6

Score Range: New Jersey Assessment of Skills and Knowledge

Proficiency levels	Score Range
Advanced proficient	250-300
Proficient	245- 200
Partially proficient	199-100

2. Marking period grades for language arts literacy were awarded to students based on teachers' assessment of students' mastery of skills and knowledge delineated within the schools' curriculum. The schools' curriculum is aligned with the New Jersey Core Curriculum Content Standards (NJCCCS) in language arts literacy. Grades were assigned for four marking periods during the 2006-07 school year. Assigned grades

ranged from an A+ to F, with A+ at the highest point of the range, and F at the lowest. The possible grades were: A+, A, B+, B, C+, C, or F. The researcher used grades from the first and fourth marking periods. B was determined as the median grade.

3. Surveys

Three teacher surveys and two student surveys were designed by researchers at Seton Hall University. Teacher surveys consisted of open-ended items, as well as multiple-choice items utilizing a Likert-type response format. The teacher assessment survey was completed by treatment and control teachers and was designed to assess the progress made by each student since the beginning of the school year. Treatment-group and control-group teachers rated individual students. Treatment-group and control-group teachers completed an instrument that was designed to solicit information on how teachers felt about the arts in schools and about other general issues regarding teaching and classroom practices. In addition, treatment-group teachers were asked to respond to another instrument designed to obtain their views about the impact of the theater arts program in classrooms during that school year. Items were structured to obtain responses about student learning, the lessons, and the developmental appropriateness of the theater arts lessons.

Student surveys were completed by treatment-group and control-group students. These surveys were designed to solicit general information about students' beliefs about school, the arts, and activities within the theater arts workshops. Student surveys included a Likert-type response format, and multiple-choice items were used to elicit students' responses.

Validity and Reliability Issues

According to the federal grant application, the study oversampled the population under study, by 12% for both the treatment and control groups. This was done to reduce threats of internal validity that could arise from attrition. This percentage was based on the average student turnover rate.

The right to use the surveys used in a prior study out of Canada was purchased by the primary researchers from Seton Hall University. The study, Learning Through the Arts: National Assessment Final Report (Upitis & Smithrim, 2003) was submitted to The Royal Conservatory of Music in Toronto. Original surveys were used to collect baseline data from selected classrooms in the fall of 2005, the surveys were then modified based on the data received. Further, the researcher conducted reliability tests using SPSS software. Results of these tests showed each instrument to provide highly reliable data with a Cronbach's alpha above the cutoff point of .6. The following are the reliabilities estimates of each survey: Teacher assessment survey: Cronbach's alpha = .959; Treatment teacher survey, Subscale A with 16 sub-parts: Cronbach's alpha = .843; Treatment teacher survey, Subscale B with 27 subparts: Cronbach's alpha = .917; Treatment teacher survey, Subscale C with 11 subparts: Cronbach's alpha = .667; Teacher Survey: Cronbach's alpha=.742; Student survey: Cronbach's alpha = .827.

Treatment

The Education Arts Team (EAT) in collaboration with the schools' Board of Education Visual and Performing Arts Department implemented an infused theater arts program--comprising drama, language arts and social studies--in 28 fourth and fifth grade classrooms in seven low achieving public schools. The three-year, federal, grant-funded program is intended to improve teaching strategies in language arts and social studies, improve students' academic performance in these disciplines, and influence students learning and pro social behaviors.

Lessons for the infused theater arts program were designed around themes. The lessons were developed by the program manager and teaching artists, together with teachers' input. Lessons were designed to focus on the development of student imagination, self-confidence, and critical thinking skills.

During the lessons, students used a variety of dramatic media. Strategies in language arts included hands-on activities with puppets, presentational theater, and role play by teacher. In drama workshops students learned to engage different characters, speak the role, write down ideas, and make critical decisions.

Professional development for treatment teachers consisted of coaching and mentoring sessions by teacher artists. There were six planning meetings during year one, and in the second year, two 6 hour days were assigned for these planning sessions. During the first year, each of five teacher artists visited classrooms four times to conduct lessons, for a total of 20 classroom visits during the year. During Year 2, classroom teachers were responsible for providing 20 standards-based lessons, and teaching artists acted as mentors and coaches.

Data Analysis

Data obtained in this study were primarily quantitative data. Statistical analysis was performed using the SPSS (16.0) software. The quantitative data sets consisted of basic descriptions of the subjects, teachers, and schools. The data obtained from the teachers' and students' surveys were analyzed using basic descriptive statistics captured in frequency tables. Chi-square tests were used to assess significance where relevant.

These data provided information, which was used to control for differences in perceptions, as well as differences between schools. To find out if there were any significant differences between the academic achievement of students in the subgroups within membership (measured by performances at the state's standardized tests) two-way analysis of variance (ANOVA) was utilized. To explore whether there were differences in students academic achievement (as measured by students' marking period grades), frequencies and percentages were summarized and chi-square tests for significance were employed.

The researcher used a two-way ANOVA to analyze the differences in the main effects membership and school and the interaction effect between these two variables. A second two-way ANOVA was applied to analyze the differences in the main effect membership and gender and the interaction effect between these two variables. The third two-way ANOVA was employed to analyze the differences in the main effects membership and socio-economic status, and the interaction effect between these two variables. The dependent variables for this study were students' language arts scores from the New Jersey state test, and students' marking period grades. The independent

variables were membership, school, and gender. Table 7 outlines each of the four research questions posed in this study, the research hypothesis, sources of the data to be used, and the proposed statistical techniques.

Chapter IV presents the results obtained in the study. The aim was to find out if an infused theater arts program--consisting of drama, language arts, and social studies--significantly impacted fifth grade students' academic performances in language arts, as a result of their participation in the program. The results obtained are discussed in (Chapter V) in the context of what is known about integrated curriculum, specifically arts integrated curriculum, and the impact on students' performance.

Table 7

Data Sources and Analysis by Research Questions

Research questions	Research hypothesis	Data sources	Method of analysis
1. What is the impact of the infused theater arts program on fifth grade students' academic achievement as measured by language arts performance at the states' standardized test?	Fifth grade student's academic achievement- as measured by the states' standardized tests- will be significantly impacted by the infused theater arts program.	Results from New Jersey state test -New Jersey Assessment of Skills and Knowledge (NJASK5) 2007	Two-way analysis of Variance (ANOVA)
2. What is the impact of the infused theater arts program on fifth grade students' academic achievement- as measured by language arts marking period grades?	The infused theater arts program will significantly impact fifth grade students' academic achievement as measured by language arts marking period grades.	School records Language arts marking period grades; school year (2006-07)	Chi-square tests
3. How has the infused theater arts program influenced students' pro-cognitive and learning behaviors?	The infused theater arts program will significantly influence students' pro-cognitive and learning behaviors.	Teacher surveys Student surveys	Chi-square tests
4. How has the infused theater arts program influenced teachers' behaviors?	Teachers' behaviors will be significantly influenced by the infused theater arts program.	Teacher surveys	Chi-square tests

CHAPTER IV

RESULTS

In this investigation, the researcher focused on the impact of an infused theater arts program (an integrated instructional model) on fifth grade students' academic achievement as measured by the standardized test, designed by the state of New Jersey (New Jersey Assessment of Skills and Knowledge) NJASK, and students' first and fourth marking period grades in language arts. An investigation was also done to assess the influence of the infused theater arts program on students' and teachers' behaviors. The instructional model was implemented in seven K--8 public schools in one school district.

Considering the literature about the usefulness of the integrated approach, more specifically the arts integrated approach on students' achievement, the researcher predicted that the integrated theater arts program would significantly impact the targeted groups' academic achievement, with the focus on achievement in language arts. Because teachers' and students' behaviors are integral components of the teaching-learning process, it was also predicted that these behaviors would be significantly influenced by this instructional model. Significance level was set at .05.

This research followed a randomized experimental design in which classes were randomly assigned as treatment or control groups. This study involved 14 treatment classrooms, and 14 control classrooms, together with treatment and control teachers in those classrooms. The fifth grade group, referred to as membership throughout this study, was used as the focus of this study, because it afforded the researcher the opportunity to investigate a sample of students who were exposed to varying levels of

intensity of the intervention/treatment. Membership comprised of four subgroups: intervention fifth graders who were intervention fourth graders (students who were in the intervention for 2 years); control fifth graders who were control fourth graders (students who were never involved in the intervention); control fifth graders who were in the intervention as fourth graders (students who were exposed to the intervention for one year), and treatment fifth graders who were control as fourth graders (students who were in the treatment for the first time in the fifth grade).

Four research questions guided the investigation.

1. What is the impact of the infused theater arts program on fifth grade students' academic achievement as measured by language arts performance at New Jersey state standardized test: New Jersey Assessment of Skills and Knowledge (NJASK5)?
2. What is the impact of the infused theater arts program on fifth grade students' academic achievement as measured by the language arts marking period grades?
3. How has the infused theater arts program influenced students' learning and pro-cognitive behaviors?
4. How has the infused theater arts program influenced teachers' behaviors?

The following sections present the data and analyses results associated with the impact of the infused theater arts program.

Research Question 1

What is the impact of the infused theater arts program on fifth grade students' academic achievement as measured by language arts performance on the state's standardized test?

Research Hypothesis:

Fifth grade students' academic achievement, as measured by language arts performance on the state's standardized test, will be significantly impacted by the infused theater arts program.

To test this hypothesis, three sets of two-way analysis of variance (ANOVA) were conducted. First, a two-way ANOVA, with membership and gender (male and female) as the main effects and an interaction effect between membership and gender, was done to determine the impact of the infused theater arts program. Second, a two-way ANOVA with membership and school as the two main effects and an interaction effect between membership and school was employed to assess the program's impact. Finally, a two-way ANOVA with membership and socioeconomic status (SES) as the two main effects and an interaction effect between membership and SES was employed to determine the impact of the program. Hereafter, HSES would refer to high socioeconomic status, LSES would refer to low socio economic status. Significance level was set at .05.

An analysis of the results of the first two-way ANOVA with membership and gender (male and female) as the main effects, with an interaction effect between the two, yielded a significant difference in language arts performance at the state assessment for the main effect membership ($F = 24.821$, $df = 3,414$, $p = .000$). See Table 8. The results suggest that the infused theater arts program did have an impact on students' performance. Within membership, the mean language arts score for intervention fifth

graders who were intervention fourth graders was 218.612 ($SE = 1.669$, $n = 114$); control fifth graders who were control fourth graders had a mean language arts score of 206.859 ($SE = 1.879$, $n = 89$) for control fifth graders who were in the intervention as fourth graders, the mean language arts score was 223.212 ($SE = 1.752$, $n = 103$), and treatment fifth graders who were control as fourth graders had a mean language arts score of 205.780 ($SE = 1.644$, $n = 116$).

Comparisons between groups within membership revealed the following differences. Based on the post hoc results, the mean difference between intervention fifth graders who were intervention fourth graders and control fifth graders who were control fourth graders was 12.22; this was statistically significant ($p = .000$). The mean difference between intervention fifth graders who were intervention fourth graders and control fifth graders who were in the intervention in the fourth grade was 4.10; this was not statistically significant. The mean difference between intervention fifth graders who were intervention fourth graders and treatment fifth graders who were control as fourth graders was 13.27; this was statistically significant ($p = .000$). These results suggest that the level of students' performance was directly associated with the intensity of the treatment given to the group.

The mean difference of 16.32 between control fifth graders who were control fourth graders and control fifth graders who were in the intervention in the fourth grade was statistically significant ($p = .000$). The mean difference between control fifth graders who were control fourth graders and treatment fifth graders who were control as fourth graders was 1.05; this was not significant. The mean difference of 17.37 between control fifth graders who were in the intervention in the fourth grade, and treatment fifth

graders who were control as fourth graders was statistically significant ($p = .000$).

Results of the post hoc tests indicate that students who were in the treatment/intervention for one year or more performed better on average than their counterparts, suggesting that the infused theater arts program was successful.

The impact of the main effect gender was not significant, neither was the impact of the interaction effect between gender and membership. The mean language arts score for males was 212.659 ($SE = 1.239$, $n = 206$) compared with 214.591 ($SE = 1.220$, $n = 216$) for females. Although the interaction between membership and gender was not statistically significant, it was of interest to see how students of different genders performed within each of the membership categories (see Figure 2). A summary of the ANOVA results are presented in Table 8.

Table 8

Analysis of Variance for Language Arts Scale Scores Based on Membership Status and Gender

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>
Gender	1	384.247	384.247	1.235
Membership	3	23170.084	7723.361	24.821**
Gender x Membership	3	788.070	262.690	.844
Within cells	414	128820.171	311.160	

Note ** $p \leq .05$

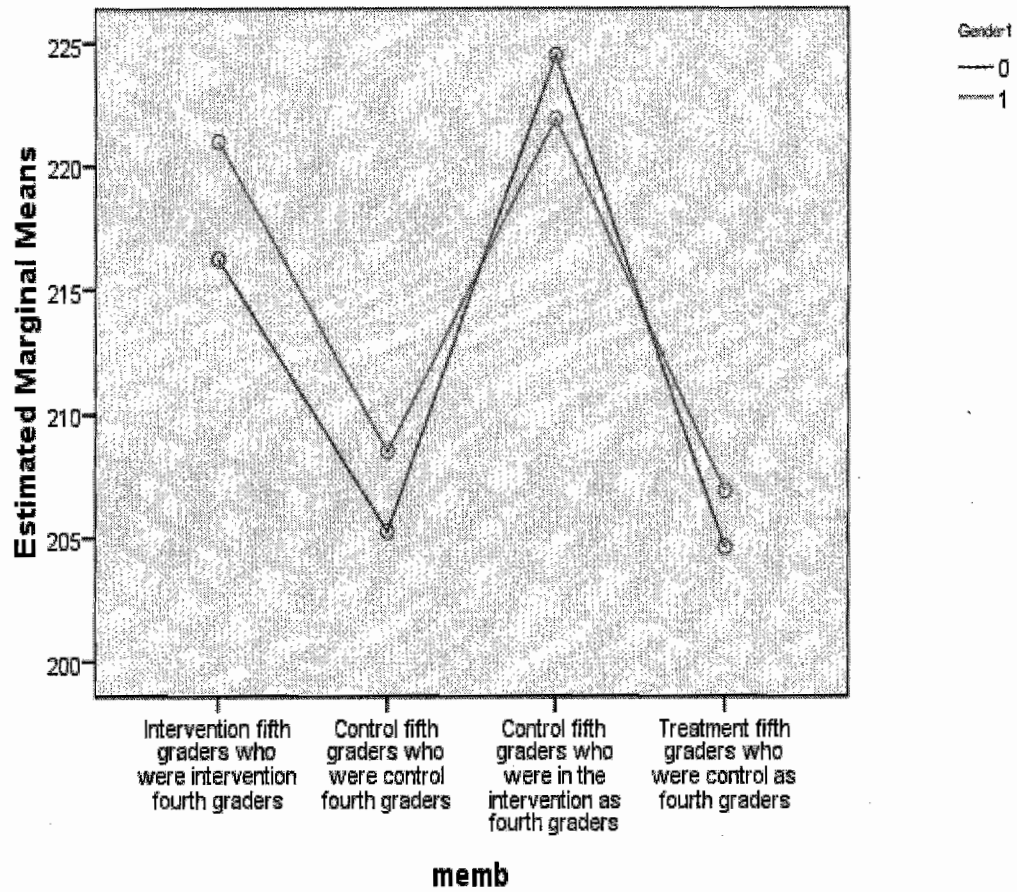


Figure 2. Estimated marginal means of language arts 07 scale score: Gender

Figure 2 graphically presents data on students' gender and membership status. As shown in the figure, females in the subgroup intervention fifth graders who were intervention fourth graders outperformed their male counterparts. The same trend can be observed for females in the subgroup control fifth graders who were control fourth graders. However, in the subgroup control fifth graders who were intervention fourth graders, male students perform better on average than female students. In the subgroup treatment fifth graders who were control as fourth graders, female students also scored higher on average than their male peers. Overall, female students performed better than male students in three of the four categories within membership.

An analysis of the results of the second two-way ANOVA with membership and school as the two main effects and the interaction effect between school and membership revealed that the difference in language arts scores was significant for the main effects school ($F = 2.568$, $df = 6, 395$, $p = .019$) and membership ($F = 8.340$, $df = 3, 395$, $p = .000$) as well as the interaction effect between school and membership ($F = 3.234$, $df = 17, 395$, $p = .000$). See Table 9. These findings indicate a strong association between schools and membership status. From the results it may be inferred that the schools' demographics and variations in the sample size from each school could have contributed to the differences in students' performances on the state assessment.

The following outlines the mean language arts score for students in each of the schools and the mean language arts score for each of the groups within membership. PS#8: 207.883 ($SE = 3.189$, $n = 43$); PS#11: 213.321 ($SE = 2.221$, $n = 62$); PS#12: 202.289 ($SE = 3.431$, $n = 36$); PS#20: 214.209 ($SE = 2.038$, $n = 68$);

PS#23: 211.311 ($SE = 1.947$, $n = 910$); PS#27: 214.470 ($SE = 2.528$, $n = 88$); PS#34: 204.26 ($SE = 1.942$, $n = 34$). The mean language arts score for intervention fifth graders who were intervention fourth graders was 215.832 ($SE = 1.997$, $n = 114$); the mean language arts score for control fifth graders who were control fourth graders was 202.159 ($SE = 1.883$, $n = 89$); for control fifth graders who were in the intervention as fourth graders the mean score was 211.992 ($SE = 3.243$, $n = 103$); and for treatment fifth graders who were control as fourth graders the mean score was 204.668 ($SE = 1.716$, $n = 116$).

When comparisons of means were made across schools, statistically significant differences were observed between some schools. The mean difference of 11.03 between PS#11 and PS#34 was statistically significant ($p=.034$); the mean difference of 10.78 between PS#20 and PS# 34 was statistically significant ($p=.036$); the mean difference of 13.28 between PS#27 and PS#12 was statistically significant ($p=.001$); the mean difference of 15.10 between PS#27 and PS#34 was also statistically significant ($p=.000$).

An examination of these results indicates that the average scores for students at PS#34, PS#12, PS#8, and the average scores of control fifth graders who were control fourth graders in all schools except at PS#27, fall well below the average scores of other participating schools and other subgroups within membership. Further examination of the estimated marginal means shows students at PS#12, in the subgroup control fifth graders who were in the intervention as fourth graders, scoring well below the average of students in other subgroups and other schools (see Figure 3).

A summary of the ANOVA results are presented in Table 9

Table 9

Analysis of Variance for Language Arts Scale Scores Based on Membership Status and School

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
School	6	4283.561	713.927	2.568	.019
Membership	3	6956.248	2318.749	8.340	.000
Membership x School	17	15286.940	899.232	3.234	.000
Within cells	395	109821.308	278.029	-	-

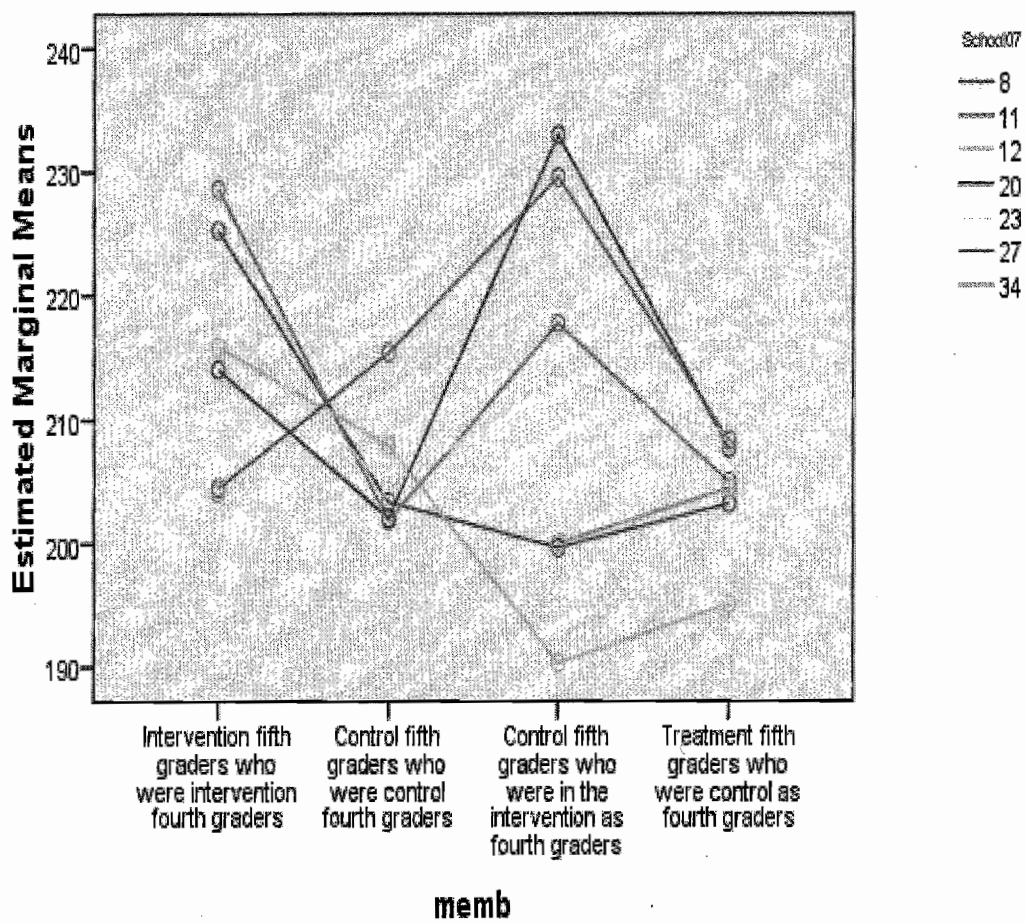


Figure 3 Estimated marginal means of language arts 07 scale score: School

Data on students' language arts scores by schools and membership status are graphically depicted in Figure 3. As can be seen in the figure, students in the subgroup intervention fifth graders who were intervention fourth graders in PS#8 and PS#11 performed better on average on the state assessment than their counterparts in other subgroups. In all schools except PS#27, students in the subgroup, control fifth graders who were control fourth graders had lower mean scores than students in other subgroups.

For the subgroup control fifth graders who were in the intervention as fourth graders, students in PS#27 and PS#20 had the strongest performance on the state assessment than students in other schools. Students at PS#11 and PS#23 in this subgroup also performed better than those students in other subgroups. Remarkably, students at PS#12 in this subgroup appeared to have scored well below the average; a mean score of 190 was observed for students in this school. Looking at the scores for students in the subgroup treatment fifth graders who were control as fourth graders, PS#12 also had the lowest mean score. In other schools, scores appeared to be at approximately the same level.

An analysis of the results of the final two-way ANOVA, with membership and SES as the two main effects and an interaction effect between membership and SES, showed that there was a significant impact for the main effect membership ($F = 21.317$, $df = 3,413$, $p = .000$) and the main effect SES ($F = 9.610$, $df = 1,413$, $p = .002$).

The interaction effect between membership and SES was not statistically significant (see Table 10). Mean language arts score for the high SES (HSES) group was 217.488 ($SE = 1.534$, $n = 133$) mean language arts score for the low SES (LSES) group was 211.738 ($SE = 1.043$, $n = 288$) The mean score for intervention fifth graders who were

intervention fourth graders was 219.752 ($SE = 1.843$, $n = 114$); control fifth graders who were control fourth graders had a mean score of 208 ($SE = 1.999$, $n = 89$); control fifth graders who were in the intervention in the fourth grade had a mean score of 223.788 ($SE = 1.763$, $n = 103$) and treatment fifth graders who were control as fourth graders had a mean score of 206.825 ($SE = 1.805$, $n = 115$).

Although the interaction between the two main effects was not significant, there was an interest in seeing how SES students performed within each category of the membership variable. Within the group intervention fifth graders who were intervention fourth graders, the HSES group had a mean score of 221.52 ($n = 31$), compared with 217.99 ($n = 83$) for the LSES group. Those HSES students in the subgroup control fifth graders who were control fourth graders, had a mean score of 211.75 ($n = 28$), compared with 204.43 ($n = 61$) for the LSES group. Within the sub-group control fifth graders who were in the intervention in the fourth grade, the HSES students had a mean score of 227.41 ($n = 48$), compared with 220.16 ($n = 62$) for the LSES students. The subgroup treatment fifth graders who were control fourth graders HSES students had a mean score of 209.27 ($n = 33$), compared with 204.38 ($n = 82$) for the LSES group. The results showed that mean language arts scores for students in the HSES group within each subgroup was approximately 6% higher than the LSES group. High SES students remained consistently above the LSES groups.

However, examination of the interaction effects suggests that the gap between the HSES and LSES groups was greatest between those students who were in the control group (see Figure 4). A summary of the ANOVA results are presented in Table 10.

Table 10

Analysis of Variance for Language Arts Scale Scores Based on Membership Status and Socioeconomic Status

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
SES	1	2948.194	2948.194	9.610	.002
Membership	3	19619.487	6539.829	21.317	.000
SES x Membership	3	231.842	77.281	.252	.860
Within cells	413	126703.062	306.787	-	-

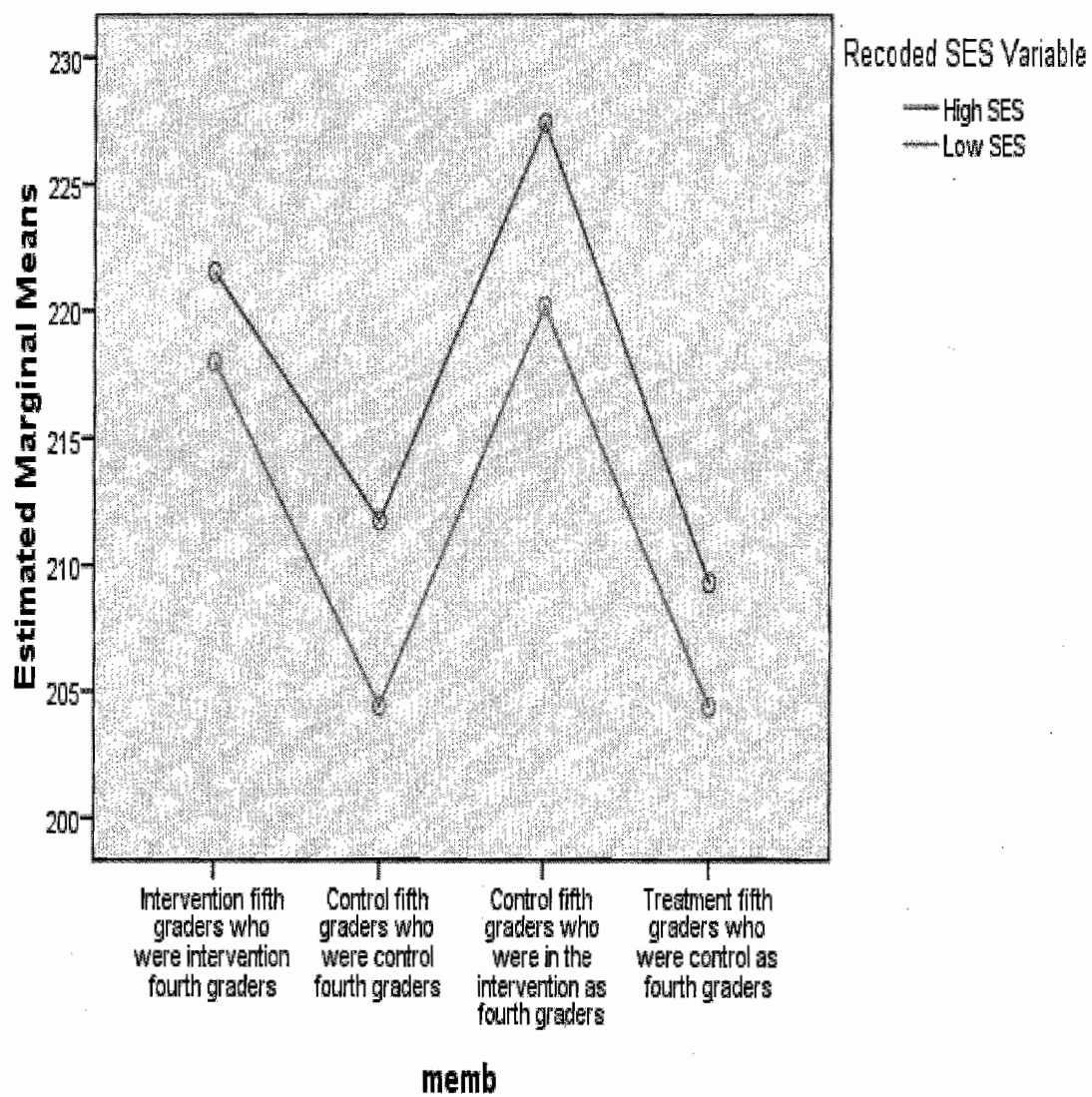


Figure 4. Estimated marginal means of language arts 07 scale score: SES

Data on language arts scale scores are graphically represented in Figure 4. This figure shows students in the high socioeconomic in each of the subgroups within membership performing better on average than their peers in the low socioeconomic group. However, an examination of the interaction effects suggest that the greatest gap existed between the HSES and LSES students in the control group.

Research Question 2

What is the impact of the infused theater arts program on fifth grade students' academic achievement as measured by language arts marking period grades?

Research Hypothesis

The infused theater arts program will significantly impact fifth grade students' academic achievement as measured by language arts marking period grades.

For the purpose of this analysis, the first and fourth marking period grades were analyzed. Marking period grades had a range of A⁺ through F. An A⁺ was the highest point of the range, and an F was the lowest; B was determined to be the median grade. To test the hypothesis a chi-square test for significance was employed. Significance level was set at .05. Percentages were compared across groups within the sample coded membership.

The results of the chi-square test indicated that the impact of the infused theater arts program on students' academic achievement was significant. The significance levels for marking periods one (1) and four (4) are reported in Table 11.

Table 11

Significance Levels for Marking Period Grades

Marking period	<i>n</i>	<i>df</i>	η^2	<i>p</i>
1	350	18	95.610	.000
4	293	18	90.069	.000

An examination of grade percentages across groups within membership showed that in the first marking period 42.8% of the intervention fifth graders who were intervention fourth graders had grades above the median grade of B. In the subgroup control fifth graders who were control fourth graders, 34.9% scored above the median grade of B. In the subgroup control fifth graders who were in the intervention in the fourth grade, 57.7% scored above the median score of B. In the subgroup treatment fifth graders who were control as fourth graders, 12.9% scored above the median grade of B.

A comparison across the groups showed that there was a 7.9% difference in favor of the subgroup intervention fifth graders who were intervention fourth graders when compared with the percentage of students gaining above the median grade of B in the subgroups control fifth graders who were control fourth graders. In comparing the subgroup intervention fifth graders who were intervention fourth graders, with the subgroup control fifth graders who were in the intervention in the fourth grade, the results showed that those students who were in the intervention only at the fourth grade level performed better (43% vs. 58%).

A comparison of the subgroup intervention fifth graders who were intervention fourth graders and treatment fifth graders who were control fourth graders revealed that approximately 30% more of those students who were in the intervention program at both the fourth and fifth grade levels had grades above the median grade when compared with those who were in the control group in the fourth grade. These findings suggest that students participating in the infused theater arts program for one year or more have benefited academically. However, the data also suggest that the benefits were greater for those students who were in the program only at the fourth grade level.

Further comparisons between the subgroups control fifth graders who were control fourth graders and control fifth graders who were in the intervention in the fourth grade, showed approximately 23% more of those students who had the intervention in the fourth grade achieving grades above the median. When the sub-group control fifth graders who were control fourth graders was compared with treatment fifth graders who were control as fourth graders, approximately 22% more of those students who were in the control group for the fourth and fifth grades reported grades higher than the median grade.

In comparing the subgroup, control fifth graders who were in the intervention in the fourth grade with treatment fifth graders who were control as fourth graders, the results showed 44.8% more of those students who were in the intervention in the fourth grade achieved grades above the median grade. Table 12 summarizes grades earned by students during the first marking period.

Table 12

First marking period language arts grades earned by treatment and control groups within membership

Grades	Intervention fifth graders who were intervention fourth graders	Control fifth graders who were control fourth graders	Control fifth graders who were in the intervention in the fourth graders	Treatment fifth graders who were control as fourth graders
F	1.0%	3.0%	0%	6.9%
C	15.2%	24.2%	10.3%	42.6%
C ⁺	16.2%	16.7%	2.6%	18.8%
B ^x	24.8%	21.2%	29.5%	18.8%
B ⁺	11.4%	15.2%	12.8%	7.9%
A	29.5%	9.1%	29.5%	5.0%
A ⁺	1.9%	10.6%	15.4%	0%
^{xxx}	42.8%	34.9%	57.7%	12.9%

Note. ^x = Median grade; ^{xxx} = Percentage scoring above the median; n=350

An examination of grade percentages across groups within membership showed that in the fourth marking period 59.5% of intervention fifth graders who were intervention fourth graders had grades above the median grade of B. In the subgroup control fifth graders who were control fourth graders, 42.4% scored above the median grade of B. In the subgroup control fifth graders who were in the intervention in the fourth grade, 69.6% scored above the median score of B. In the subgroup treatment fifth graders who were control as fourth graders, 17.5% scored above the median grade of B.

A comparison across the groups showed that there was approximately 17% more students gaining above the median grade of B in the subgroup intervention fifth

graders who were intervention fourth graders, when compared with the subgroup control fifth graders who were control fourth graders. In comparing the subgroups intervention fifth graders who were intervention fourth graders with the subgroup control fifth graders who were in the intervention in the fourth grade, the results showed a greater percentage (10%) of those students who were in the intervention only in the fourth grade reporting grades higher than the median grade.

A comparison of the subgroup, intervention fifth graders who were intervention fourth graders and treatment fifth graders who were control fourth graders revealed that approximately 42% more of those students who were in the intervention program at both the fourth and fifth grade levels had grades above the median grade when compared with those who were in the control group in the fourth grade.

Further comparisons between the sub-groups control fifth graders who were control fourth graders and control fifth graders who were in the intervention in the fourth grade, showed approximately 27% more of those students who had the intervention in the fourth grade achieving grades above the median. When the subgroup, control fifth graders who were control fourth graders was compared with treatment fifth graders who were control as fourth graders, approximately 25% more of those students who were in the control group for the fourth and fifth grades reported grades higher than the median grade.

In comparing the subgroup control fifth graders who were in the intervention in the fourth grade with treatment fifth graders who were control as fourth graders, the results showed approximately 52% more of those students who were in the intervention in the fourth grade achieved grades above the median grade. These findings indicate that

proportionately more of the students who were in the treatment for one year performed better than their counterparts in the other three subgroups. Further there was approximately a 10% difference in favor of the one year treatment group when compared with the subgroup that had the treatment for 2 years. Table 13 summarizes grades earned by students during the fourth marking period.

Table 13

Fourth marking period language arts grades earned by treatment and control groups within membership

Grades	Intervention fifth graders who were intervention fourth Graders	Control fifth graders who were control fourth graders	Control fifth graders who were in the intervention in the fourth grade	Treatment fifth graders who were control as fourth graders
F	0%	5.1%	0%	10.5%
C	15.2%	20.3%	2.9%	23.3%
C ⁺	8.9%	8.5%	1.4%	23.3%
B ^x	16.5%	23.7%	26.1%	25.6%%
B ⁺	26.6%	11.9%	14.5%	12.8%
A	31.6%	23.7%	46.4%	4.7%
A ⁺	1.3%	6.8%	8.7%	0%
^{xxx}	59.5%	42.4%	69.6%	17.5%

Note. *x*= Median grade; *xxx*= Percentage scoring above the median; *n* =293

A comparison of the percentages of students' grades for the first and fourth marking periods showed that there was an increase in the percentage of students scoring above the median grade in all subgroups within membership for the fourth marking period. Further examination revealed that the greatest percentage increase (16.7%) was observed within the subgroup intervention fifth graders who were intervention fourth graders. The subgroup, control fifth graders who were in the intervention in the fourth

grade showed an 11.7% increase. An approximate 8% increase was revealed for the subgroup control fifth graders who were control fourth graders, while the treatment fifth graders who were control as fourth graders showed only a marginal 4.6% increase.

These results further substantiate earlier findings that indicated students who were in the program for one year or more tended to perform better than their counterparts.

To further test the hypothesis, chi-square tests were conducted to investigate if there were major differences within groups based on students' gender. For the purpose of analysis, males were coded 0, and females were coded 1. The results of the chi-square test for marking periods one (MP#1) and four (MP#4) were significant for both subgroups. (see Table 14)

Table 14

Significance levels for first and fourth marking period grades outlined by gender

Marking periods	<i>n</i>	<i>df</i>	χ^2	<i>P</i>
MP#1				
Males	170	18	47.625	.000
Females	180	18	57.970	.000
MP# 4				
Males	146	18	47.608	.000
Females	147	18	53.532	.000

An examination of the percentages of students earning grades above the median grade of B indicated that there were no marked differences between the performance of males and females within each sub-group during the first marking period. However, an examination of the fourth marking period grades showed that approximately 12% more of females than males in the subgroup intervention fifth grade who were intervention fourth grade earned grades higher than the median. These results also showed approximately

27% more females than males in the subgroup, control fifth graders who were control fourth graders, earning grades above the median grade.

There were no marked differences between the percentages of males and females earning above the median grade in the subgroups control fifth graders who were intervention fourth graders or treatment fifth graders who were control as fourth graders. Students' grades for the first and fourth marking periods are outlined by percentages and gender in Tables 15 and 16 below.

Table 15

First marking period language arts grades earned by treatment and control groups compared by gender

Grades	Intervention fifth graders who were intervention fourth graders		Control fifth graders who were control fourth graders		Control fifth graders who were in the intervention in the fourth grade		Treatment fifth graders who were control as fourth graders	
	Male	Female	Male	Female	Male	Female	Male	Female
F	0%	1.7%	2.8%	3.3%	0%	0%	7.3%	6.5%
C	17.8 %	13.3%	36.1%	10.0%	14.7%	6.8%	45.5%	39.1%
C ⁺	20.0%	13.3%	16.7%	16.7%	0%	4.5%	18.2%	19.6%
B ^x	17.8%	30.0%	13.9%	30.0%	26.5%	31.8%	16.4%	21.7%
B ⁺	17.8%	6.7%	13.9%	16.7%	11.8%	13.6%	5.5%	10.9%
A	22.2%	35.0%	5.6%	13.3%	32.4%	27.3%	7.3%	2.2%
A ⁺	4.4%	0%	11.1%	10.0%	14.75%	15.9%	0%	0%
^{xxx}	44.4%	41.7%	30.6%	40%	58.9%	56.8%	12.8%	13.1%

Note. ^x = Median grade; ^{xxx} = Percentage earning above median grade

n = (0=170; 1=180)

Table 16

Fourth marking period language arts grades earned by treatment and control groups compared by gender

Grades	Intervention fifth graders who were intervention fourth graders		Control fifth graders who were control fourth graders		Control fifth graders who were in the intervention in the fourth grade		Treatment fifth graders who were control as fourth graders	
	Male	Female	Male	Female	Male	Female	Male	Female
F	0%	0%	8.6%	0%	0%	0%	8.5%	12.8%
C	17.6%	13.3%	25.7%	12.5%	3.3%	2.6%	25.5%	20.5%
C ⁺	8.8%	8.9%	8.6%	8.3%	0%	2.6%	23.4%	23.1%
B ^x	20.6%	13.3%	25.7%	20.8%	26.7%	25.6%	25.5 %	25.6%
B ⁺	23.5%	28.9%	8.6%	16.7%	10.0%	17.9%	10.6%	15.4%
A	26.5%	.6%	17.1%	33.3%	56.7%	38.5%	6.4%	2.6%
A ⁺	2.9%	0%	5.7 %	8.3%	3.3%	12.8%	0%	0%
^{xxx}	52.9%	64.5%	31.4%	58.3%	70%	69.2%	17%	18%

Note. ^x = Median grade; ^{xxx} = Percentage earning above median grade

$n = (0 = 170; 1 = 180)$

To explore differences in students' performance based on socioeconomic status, a chi-square test was employed. For the purpose of analysis, students were further subdivided into two categories: high socioeconomic status (HSES) and low socioeconomic status (LSES). Students who qualified for free and reduced lunch based on the federal government's guidelines were grouped within the LSES category. Those students who paid fully for lunch based on the federal government's guidelines were grouped within the HSES category.

The results of the chi-square test proved significant for both sub-groups in the first and fourth marking periods. Levels of significance for the first and fourth marking periods are outlined in Table 17.

Table 17

Significance Levels for First and Fourth Marking Period Grades Outlined by Socioeconomic Status

Marking periods	<i>n</i>	<i>df</i>	χ^2	<i>p</i>
MP#1				
HSES	113	18	33.809	.031
LSES	237	18	81.484	.002
MP#4				
HSES	96	18	56.648	.000
LSES	197	18	54.656	.000

A comparison of the percentages of students earning above the median grade of B in the first marking period showed a marked difference within two subgroups. Within the subgroup control fifth graders who were control fourth graders approximately 48% of students in the HSES group earned scores higher than the median grade, compared to 28.9% of the LSES. Approximately 19% more of those students in the HSES group earned grades higher than the median grade. Within the sub-group control fifth graders who were in the intervention as fourth graders 67.7% of those students in the HSES group earned grades higher than the median grade compared with 52.3% of those students in the LSES group.

Approximately 15% more of those students in the HSES group earned grades higher than the median grade. There were no marked differences between the performance of students in the HSES and LSES categories when a comparison was done

within the subgroup intervention fifth graders who were intervention fourth graders, and intervention fifth graders who were control fourth graders. Students' first marking period grades are summarized in Table 18.

Table 18

First marking period language arts grades earned by treatment and control groups compared by socioeconomic status (HSES & LSES)

Grade	Intervention fifth graders who were intervention fourth graders		Control fifth graders who were control fourth graders		Control fifth graders who were in the intervention as fourth graders		Treatment fifth graders who were control as fourth graders	
	HSES	LSES	HSES	LSES	HSES	LSES	HSES	LSES
F	0%	1.3%	4.8%	2.2%	0%	0%	3.3%	8.5%
C	17.9%	14.3%	23.8%	24.4%	5.9%	13.6%	20.0%	52.1%
C ⁺	17.9%	15.6%	9.5%	20.0%	3.9%	4.5%	20.0%	18.3%
B ^x	21.4%	26.0%	14.3%	24.4%	29.4%	29.5%	43.3%	8.5%
B ⁺	17.9%	9.1%	23.8%	11.1%	14.8%	11.4%	6.7%	8.5%
A	21.4%	32.5%	9.5%	8.9%	35.5%	25.0%	6.7%	4.2%
A ⁺	3.6%	1.3%	14.3%	8.9%	14.7%	15.9%	0%	0%
^{xxx}	42.9%	42.9%	47.6%	28.8%	67.4%	52.3%	13.4%	12.7%

Note. ^x = Median grade; ^{xxx} = Percentage earning above the median grade.

HSES = high socioeconomic status $n = 113$; LSES = low socioeconomic status $n = 237$.

A comparison of the percentages of students earning above the median grade of B in the fourth marking period showed marked differences within three subgroups. Within the subgroup control fifth graders who were control fourth graders, approximately 58% of students in the HSES group earned scores higher than the median grade compared to 34% of the LSES. Approximately 23% more of those students in the HSES group earned grades higher than the median grade. Within the subgroup control fifth graders who were in the intervention as fourth graders, 81% of those students earned grades higher than the median grade compared with 59.4% of those students in the LSES group. Approximately 22% more of those students in the HSES category earned grades higher than the median grade. Within the subgroup, Treatment fifth graders who were control as fourth graders, 28.1% of the HSES students earned grades above the median, compared to 40.6% of the LSES group. There were no marked differences between the performance of students in the HSES and LSES categories when a comparison was done within the subgroups intervention fifth graders who were intervention fourth graders and treatment fifth graders who were control as fourth graders. Students' fourth marking period grades are summarized in Table 19.

Table 19

Fourth marking period language arts grades earned by treatment and control groups compared by socioeconomic status (HSES & LSES)

Grades	Intervention fifth graders who were intervention fourth graders		Control fifth graders who were control fourth graders		Control fifth graders who were in the intervention as fourth graders		Treatment fifth graders who were control as fourth graders	
	HSES	LSES	HSES	LSES	HSES	LSES	HSES	LSES
F	0%	0%	4.8%	5.3%	0%	0%	9.1%	10.9%
C	19.0%	13.8%	14.3%	23.7%	0%	5.4%	0%	31.2%
C ⁺	4.8%	10.3%	4.8%	10.5%	0%	2.7%	40.9%	17.2%
B ^x	19.0%	15.5%	19.0%	26.3%	18.8%	34.4%	31.8%	23.4%
B ⁺	28.6%	25.9%	19.0%	7.9%	15.6%	13.5%	13.6%	12.5%
A	28.6%	32.8%	28.6%	21.1%	56.2%	37.8%	4.5%	4.7%
A ⁺	0%	1.7%	9.5%	5.3%	9.4%	8.1%	0%	0%
^{xxx}	57.2%	60.4%	57.7%	34.3%	81.2%	59.4%	18.1%	17.2%

Note. ^x = Median grade; ^{xxx} = Percentage earning above the median grade.

HSES = high socioeconomic status n=113; LSES = low socioeconomic status n=237.

Research Question 3

How has the infused theater arts program influenced students' in-class behaviors?

Research Hypothesis 3

The infused theater arts program will significantly influence students' in-class behaviors.

In answering this question four sets of data were analyzed.

1. Teacher ratings of progress of each student's behavior from the teacher assessment questionnaire (TPOS)
2. Treatment Teacher ratings of students learning behaviors during the periods teaching artists were in the classroom from the treatment teacher survey 2007(GBH)
3. Treatment teacher's ratings of improvement in students' pro-cognitive behaviors from the treatment teacher survey 2007(GBH)
4. Students' self-reflections from the student post questionnaire (POSQ).

First, teacher ratings on progress of students' behaviors from the Teacher Assessment questionnaire were analyzed using a chi-square test of significance. On this measure, teachers identified whether a student had shown significant progress, moderate progress, slight progress, no change, had a slight decline, moderate decline, or significant decline. For the purpose of analysis, these response categories were collapsed into the following: progress (P), no change (NC), and declined (D). The results from the analyses indicated that there was a definite association between membership status and progress made by students. On each indicator except attendance in class, arriving at class on time, and tardiness, progress was evident for proportionately more of the subgroup intervention fifth graders who were intervention fourth graders, than the other three subgroups. These differences were significant.

Further scrutiny of the results revealed that 16% more of students in the subgroup, intervention fifth graders who were intervention fourth graders showed greater progress than the other subgroups for the indicator academic performance in reading and

language arts and more than 20% for the indicator completion of homework. More students who were in the subgroups intervention fifth graders who were intervention fourth graders and control fifth graders who were in the intervention in the fourth grade were likely to show progress in turning in homework on time, attentiveness in class, behavior in class, motivation to learn, and getting along with others. A summary of the findings are set out in Table 20.

Table 20

Progress of In-Class Behaviors Outlined by Membership Status

Behavior Category	Intervention fifth graders who were intervention fourth graders			Control fifth graders who were control fourth graders		
	P	NC	D	P	NC	D
Turning in homework*	73.1%	21.2%	4.8%	56.1%	18.2%	25.7%
Completion of homework*	86.7%	9.5%	2.2%	59.2%	16.7%	24.2%
Participation in class*	85.9%	12.3%	1.9%	75.8%	18.2%	6.0%
Volunteering*	78.2%	21.0%	1.0%	63.6%	31.8%	4.5%
Attendance in class*	52%	46.9%	1.0%	66.7%	28.8%	4.5%
Attentiveness in class*	73.6%	22.6%	3.7%	63.6%	16.7%	19.7%
Behavior in class*	63.8%	28.6%	6.7%	56.1%	21.2%	22.8%
Motivation in class*	82.1%	15.1%	2.8%	66.4%	18.2%	15.1%
Getting along with other students*	64.8%	30.5%	4.8%	60%	30.8%	9.2%
Arriving at class on time*	44.5%	54.5%	1.0%	55.4%	41.5%	3.1%
Staying on task*	68.9%	26.4%	4.7%	64.6%	27.7%	7.7%
Overall acad.. perf..*	87.6%	5.8%	6.7%	71.2%	18.2%	10.6%
Tardiness*	43.8%	54.1%	2.0%	59.1%	37.9%	3.0%
Interest in school*	84.1%	11.4%	4.8%	67.7%	20%	12.4%
Acad.. perf. in Read/language arts*	88.7%	9.4%	1.9%	72.7%	22.7%	4.5%
Acad.. perf. in social studies*	87.8%	6.6%	5.7%	71.3%	24.2%	4.5%

Table 20 Continued

Behavior Category	Control fifth graders who were in the intervention in the fourth grade			Treatment fifth graders who were control as fourth graders		
	P	NC	D	P	NC	D
Turning in homework*	58.3	29.1%	12.7%	61.3%	27.7%	10.9%
Completion of homework*	59.5%	30.4%	10.1%	62.4%	26.7%	10.9%
Participation in class*	65.8%	21.5%	12.7%	76.8%	26.0%	6.0%
Volunteering*	53.1%	41.8%	5.1%	59.5%	35.6%	5.0%
Attendance in class*	57.0%	41.8%	1.3%	43.9%	54.1%	2.0%
Attentiveness in class*	65.9%	17.7%	16.4%	56.5%	35.6%	8.0%
Behavior in class*	62.4%	27.3%	10.4%	48.5%	39.4%	12.2%
Motivation in class*	68.3%	22.8%	8.9%	62.3%	29.7%	8.0%
Getting along with other students*	62.1%	29.1%	8.9%	49%	45.0%	6.0%
Arriving at class on time*	41.8%	55.7%	3.6%	37.7%	57.1%	5.1%
Staying on task*	60.8%	25.3%	14.0%	55%	36.0%	9.0%
Overall acad.. perf..*	68.4%	21.5%	10.7%	62%	29%	9.0%
Tardiness*	52.6%	44.9%	2.6%	37%	55.7%	7.2%
Interest in school*	63.2%	26.6%	10.1%	61%	31%	8%
Acad..perf.. in read/language arts*	64.6%	29.1%	6.3%	67.4%	19.8%	9.9%
Acad.. perf.. in social studies*	67.1%	25.3%	7.6%	68.4%	22.8%	9.0%

Note. $p \leq .05$; * statistically significant; $n = 350$; acad = academic; perf = performance; read = reading; P = progress; NC = no change; D = declined

To assess critical behaviors that are fundamental to cognition, teachers in the treatment/intervention group were asked to reflect and provide feedback on the impact of the infused theater arts program on students' learning behaviors during the period artists

were in the classroom. Students' engagement, time on task, motivation to do well, willingness to participate in lessons, and ability to follow directions were rated most favorably by teachers. Teachers were asked to rate students' behaviors as excellent, fair or poor. The results of teachers' feedback are presented in Table 21. The numbers in the columns represent the number of teachers reporting poor, fair, or excellent.

Table 21

Teacher Ratings of Students' Learning Behaviors

Learning Behavior	Poor	Fair	Excellent
Student engagement	0	1	21
Time on task	0	9	14
Motivation to do well	0	10	13
Students' willingness to participate in lessons	0	14	9
Students' abilities to retain concepts	0	13	10
Students' abilities to transfer knowledge from one subject	1	17	5
Students' abilities to form relationships among ideas	0	14	9
Students' abilities to conceive different vantage points	3	10	10
Students, abilities to sustain focus	0	11	12
Students' abilities to think critically	3	14	6
Students' ability to follow directions	0	9	14
Students, ability to problem solve	0	13	10
Students' ability to use language more effectively	0	16	7
Students' abilities to construct and organize their thoughts	0	14	9

Note. $n = 23$ teachers

To further evaluate students' behaviors, teachers in the treatment/ intervention group were asked to indicate whether students' pro-cognitive behaviors were improved as a direct result of the implementation of the infused theater arts program. For this

analysis, a chi-square test for significance was used, and percentages of teachers reporting improvement were compared across schools. The results of the chi-square test on students’ pro-cognitive behaviors showed significance in one area, students’ ability to follow directions.

An examination of the percentages of teachers reporting improvement showed 50 to 100% of the teachers in PS#34 reporting improvement in each behavior category except following directions. More than 50% of teachers in four of the seven schools reported improvement in students’ engagement in language arts, and students’ overall active engagement. In five of the seven schools between 50-100% of the teachers reported improvement in students’ willingness to participate during lessons. Table 22 summarizes the percentage of teachers reporting improvement in each of the seven schools.

Table 22

Percentage of teachers reporting improvement in pro-cognitive behaviors for infused theater arts students

Behavior Category	PS#11	PS#12	PS#20	PS#23	PS#27	PS#34	PS#8
Retain concepts	0	0	0	60%	0%	50%	0
Taking more risks academically and socially	25%	100%	33%	40%	33.3%	50%	50%
Transfer of knowledge from one subject to another	0	0	33.3%	60%	33.3%	50%	50%
Forming relationships among ideas	0	50%	33.3%	40%	33.3%	100%	25%

Behavior Category	PS#11	PS#12	PS#20	PS#23	PS#27	PS#34	PS#8
Conceiving different vantage points	25%	50%	66.7%	60%	33.3%	100%	25%
Following directions	0	0	33.3%	80%	0	0	0
Problem solving	0	0	66.7%	60%	0	50%	0
Using language more effectively	25%	0	33.3%	40%	33.3%	100%	0
Constructing and organizing thoughts	0	0	66.7%	80%	33.3%	50%	0
Retaining concepts	0	0	66.7%	60%	33.3%	50%	25%
Thinking critically	0	0	66.7%	40%	0	50%	0
Engagement in lang. arts	25%	50%	33.3%	100%	66.7%	50%	25%
Overall active engagement	25%	50%	33.3%	60%	66.7%	100%	25%
Time on task	0	0	0	0	0	50%	0
Motivation to do well	25%	0	0	60%	33.3%	50%	0
acad...							
Taking more risks acad...	25%	100%	33.3%	40%	33.35	50%	50%
Sustaining focus	0	0	33.3%	60%	33.3%	100%	0%
Willingness to participate	50%	100%	33.3%	80%	0	100%	75%

Note. *Table 22 continued.* $n = 23$; *acad.* = *academic*

In order to understand how students perceived components of the infused theater arts program, students in the treatment group were asked to provide feedback about the

classroom activities done by teaching artists. Students' responses were rated in four categories: agree a lot, agree, disagree, and disagree a lot. For the purpose of this analysis responses were collapsed into two categories: agree and disagree. For this analysis a chi-square test for significance was utilized, and percentages of students' responses were compared across groups within membership. Findings of the chi-square test indicated that there was an association between the way students felt and the infused theater arts program for one indicator, "the workshops make learning fun." This was significant ($\chi^2 = 25.499, df = 6, p = .000$). A comparison of the results revealed a greater percentage of students in each subgroup agreed that the activities were beneficial. Outlined in Table 23 are percentages of students reporting agreed or disagreed for each category analyzed.

Table 23

Students' self-report of activities within the classroom (treatment/intervention group)

Categories	Intervention fifth graders who were intervention as fourth graders		Control fifth graders who were intervention fourth graders		Treatment fifth graders who were control as fourth graders	
	Ag.	Dis.	Ag.	Dis.	Ag.	Dis.
The workshops made learning fun (n=268).	95.6%	4.4%	90.7%	9.3%	89.8%	10.3%
The workshops helped me to work better with my classmates in groups (n=266).	88.9%	11.1%	86.8%	13.2%	78.2%	21.7%
The workshops have had a positive effect on how we treat each other in our class (n=267).	71.5%	26.6%	81.1%	18.9%	71.8%	28.2%
I feel that the workshops helped me remember my schoolwork (n=267).	79.2%	20.9%	68%	32.1%	74.3%	25.1%
I would like to have more workshops with the artists (n=267).	95.6%	4.4%	88.7%	11.3%	89.8%	10.2%

Note. *Ag* = agree; *Dis* = disagree

Further testing was done to ascertain other associations between attributes of students within membership and the theater arts program. A chi-square test for significance was used. The results of the chi-square test revealed that there was an association between attributes of students within this group and the infused theater arts program. The results showed significance in the following areas, "I enjoy working in groups" ($\chi^2 = 16.989, df = 9, p = .049$). "I want to do better in school" ($\chi^2 = 17.924, df = 9, p = .036$). "Acting helps me remember what I learned in social studies" ($\chi^2 = 26.561, df = 9, p = .002$). "I believe drawing, acting, and music are good ways for me to learn" ($\chi^2 = 35.647, df = 12, p = .000$). "I can show what I know in my subjects through singing, drawing, dancing, and acting" ($\chi^2 = 22.408, df = 12, p = .033$). Students were asked to rate responses in the categories strongly agree, agree, not sure, disagree or strongly disagree. For the purpose of this analysis, student responses were collapsed into the categories, agree (Ag), not sure (Ns), and disagree (DIS), and percentages were compared across groups within membership.

A comparison across the groups within membership showed proportionately more of the students in the treatment/ intervention groups reporting agreement with those attributes associated with the infused theater arts program than those students who were in the control group. Table 24 summarizes students' responses.

Table 24

Students' Ratings of Attributes by Membership Status

Attributes	Intervention fifth graders who were intervention fourth graders			Control fifth graders who were control fourth graders		
	Ag.	Ns.	Dis.	Ag.	Ns.	Dis.
I think drawing, dance and music are important school subjects (n=354)	70.6	17.7%	14.7%	54.9%	18.3%	26.8%
I am getting better at reading & writing (n=353)	95.1%	0	6.9%	93.1%	0	6.9%
I am getting better in social studies (n=349)	91.2%	0	8.8%	78.9%	0	21.1 %
I enjoy working in groups in class (n=351)	87.3%	0	12.8%	88.7%	0	11.6%
I want to do better in school (n=354)	99.1%	0	1%	100%	0	0
I like to listen to what my classmates say (n=350)	88.1%	0	11.9%	74.7%	0	25.3%
Acting helps me remember what I learned in social studies (n=353)	64.1%	0	35.9%	34.7%	0	65.3%
I spend more time on my work in class (n=352)	93.3%	0	8.8%	81.9 %	0	8.8%
I believe that drawing, acting, music, and dance are good ways for me to learn (n=352)	72.5%	20.6%	6.9%	44.2%	32.9%	24.8%
I can show what I know in many subjects through singing (n=355) drawing	57.3%	29.1%	13.6%	50%	0	25%
I feel I learn a lot in my classes (n=353)	95.1%	0	4.9%	95.9%	0	4.2%

Table 24 Continued

Attributes	Control fifth graders who were in the intervention as fourth graders			Treatment fifth graders who were control as fourth graders		
	Ag.	Ns.	Dis.	Ag.	Ns.	Dis.
I think drawing, dance and music are important school subjects (n=354)	54%	29.9%	16.1%	60.7%	23.4%	16%
I am getting better at reading & writing (n=353)	96.6%	0	3.4%	92.3%	0	7.7%
I am getting better in social studies (n=349)	88.4%	0	11.6%	83.3%	0	16.7%
I enjoy working in groups in class (n=351)	83.8%	0	16.3%	92.4%	0	7.6%
I want to do better in school (n=354)	97.7%	0	2.3%	97.8%	0	2.2%
I like to listen to what my classmates say (n=350)	79.3%	0	20.6%	80.3%	0	19.8%
Acting helps me remember what I learned in social studies (n=353)	44.8%	0	55.1%	53.9%	0	46.2%
I spend more time on my work in class (n=352)	77.9%	0	22.1%	80.3%	0	19.8%
I believe that drawing, acting, music, and dance are good ways for me to learn (n=352)	51.7%	33.3%	14.9%	79.6%	14.0%	6.4%
I can show what I know in many subjects through singing (n=355)	48.3%	35.6%	16.1%	68.8%	22.6%	8.7%
drawing						
I feel I learn a lot in my classes (n=353)	97.7%	8.2%	93.4%	93.4%	0	6.5%

Note. *Ag.* = agree; *Ns* = not sure; *Dis* = disagree

Research Question 4

How has the infused theater arts program influenced teachers' behaviors?

Research Hypothesis:

Teachers' behaviors will be significantly influenced by the infused theater arts program.

A chi-square test for significance was used to test this hypothesis. Additionally, percentages of treatment and control teachers, as well as treatment teachers' responses were compared between groups and across schools. Teachers' behaviors were measured based on variables pertaining to teacher beliefs. First, an analysis was done with responses to belief measures for both treatment and control teachers. The next set of analyses was done with responses to belief measures for treatment teachers only.

Treatment and control teachers were asked to rate their beliefs about the arts on a scale range of strongly agree through strongly disagree. These responses were collapsed into the following three categories for the purpose of analysis: agree (Ag), not sure (Ns), and disagree (Dis). For this analysis seven measures of teacher beliefs were assessed.

The results of the chi-square test indicated that there was an association between teachers' beliefs and the infused theater arts program. Further this association was significant in the following areas, "I believe the arts should be included in the classroom provided they do not detract from the core curriculum" ($\chi^2 = 15.360, df = 3, p = .002$); "I believe that the arts are an effective way of teaching social studies and language arts" ($\chi^2 = 7.388, df = 2, p = .025$); "I believe that bringing artists into the classroom can be disruptive" ($\chi^2 = 8.101, df = 3, p = .044$); "I believe that students can learn knowledge and skills in many subjects through the arts" ($\chi^2 = 6.558, df = 2, p = .038$). A comparison of

the treatment and control groups indicated a proportionately larger percentage of teachers in the treatment group agreeing with the benefits to be derived from the arts within the classroom. Table 25 summarizes belief measures rated by treatment and control teachers.

Table 25

Ratings of Belief Measures within Treatment Status

Belief statements	Control teachers			Treatment teachers		
	Ag.	Ns.	Dis.	Ag.	Ns.	Dis.
I believe that arts in the classroom are fundamental to quality of learning.	90%	9.7%	0	100%	0	0
I believe students can express knowledge and skills in many subjects through the arts.	90%	10%	0	100%	0	0
I believe the arts should be included in the classroom provided they do not detract from teaching the core curriculum.	90.3%	6.5%	3.2%	96.4%	2.0%	3.6%
I believe that the arts are an effective way of teaching social studies and lang. arts.	87.7%	12.9%	0	92.8%	7.1%	0

Table 25 Continued

Belief Statements	Control teachers			Treatment teachers		
I believe that the arts is an effective way of reaching hard-to-educate students.	87.1%	9.7%	3.3%	96.4%	3.6%	0
I believe that bringing artists into the classroom can be disruptive.	3.2%	6.5%	90.3%	0	0	100%
I believe that students can learn knowledge and skills in many subjects through the arts.	83.4%	16.7%	0	93.4%	0	3.6%

Note. Control teachers $n = 31$; Treatment teachers $n = 28$; Total $n = 59$

lang. arts = language arts. Ag = agree; Ns = disagree; Dis = disagree.

Treatment teachers were asked to rate their beliefs about the infused theater arts program based on how strongly they agreed with each measure. Seven belief measures were analyzed. A chi-square test was used to assess significance, and percentages of teachers' responses were compared across schools. The results of the chi-square showed a significant association between teachers' beliefs and the infused theater arts program in one area: "the lessons were appropriate for students' learning styles" ($\chi^2 = 12.847$, $df = 6$, $p = .046$).

A comparison of teachers' responses across schools showed teachers in PS#12 and PS#23 reporting favorably in each of the seven beliefs measured. In every school, 100% of the teachers agreed on two measures "the lessons were developmentally appropriate", and "the lessons were appropriate for students with different learning styles" Both of

Table 26 Continued

Schools	PS#11	PS#12	PS#20	PS#23	PS#27	PS#34	PS#8
Belief category	%agree	%agree	%agree	%agree	% agree	%agree	% agree
The lessons were appropriate for students with different learning styles.	100%	100%	100%	100%	100%	100%	100%
My understanding of art delivery strategies has been enhanced by the project.	75%	100%	66.6%	100%	100%	100%	100%
I feel that I need more support in learning how to incorporate the arts	100%	100%	33.3%	100%	66.6%	50%	25%

Note. $n = 23$

A summary of the results indicate the following:

The infused theater arts program did have a significant impact on fifth grade students' academic performance when both measures were assessed (the state's standardized tests and marking period grades).

There were significant differences between the performances of students in the intervention/treatment groups and their peers in the traditional language arts program. Students who were in the intervention in the fourth grade and entered the control group in the fifth grade tended to score higher grades on average.

Gender was a significant factor in student achievement for one measure, marking period grades. However, school and socioeconomic status appeared to be significant factors in both measures.

The influence of the infused theater arts program on students' behaviors was significant in some areas. In addition, teachers' responses indicated some amount of influence.

The influence of the infused theater arts program on teachers' behaviors was significant in some areas. Teacher reports suggested that the infused theater arts did have some influence on their behaviors.

Chapter V

Summary of Findings, Discussion, and Recommendations

The purpose of this study was to explore the impact of an infused theater arts program--consisting of drama, social studies, and language arts--on the academic achievement of fifth grade students. The study explored the influence of the infused theater arts program on students' behaviors, and teachers' behaviors within the same setting. The focus of this research was to ascertain the extent to which the integrated theater arts program would impact students' academic achievement in seven elementary and middle schools in a large urban school district.

All schools within the study, except one, had K - 8 classes. The only K-5 school was PS#34. The schools were comparable in socioeconomic status, mobility rate, and curriculum. Each school had subjects randomly selected for the treatment and control groups at the fourth and fifth grade levels. Subjects in the treatment/ intervention groups participated in the infused theater arts program, and those in the control groups followed the traditional curriculum. The sample in this study comprised a group of fifth graders from both the treatment and control groups. Within this study, the sample is referred to as membership.

The New Jersey Assessment of Skills and Knowledge (NJASK5) was used as one measure of student academic achievement for the group identified as membership. This test is administered to all fifth grade students during the spring of each academic year. Language arts scale scores for the 2006-07 academic year were utilized as the

dependent variable in this study. In addition, another measure of students' academic achievement, the marking period grades, was utilized in this study. Marking period grades are assigned to students four times in each school year. For the purpose of this study marking period grades for the first and fourth marking periods were analyzed. The researcher determined the median grade to be B. Self-reported responses from students and teachers were used to measure the influence of the infused theater arts program on students' and teachers' behaviors.

Methods of Research

The statistical procedures employed in this research design were (a) two-way analysis of variance (ANOVA) and (b) chi-square tests. A review of the literature indicated that the integrated arts curriculum had significant impact on students' academic achievement, within different groups. The researcher utilized gender, school and socioeconomic status as main effects and elected to test the impact on student achievement using language arts scale scores as the dependent variable. The interaction effect between these main effects and membership was also analyzed.

To further assess the impact of the infused theater arts program on students' academic achievement, chi-square tests were utilized with students' first and fourth marking period grades as the dependent factors. To analyze the influence of the infused theater arts program on student' and teachers' behaviors, chi-square tests were employed. The use of this statistical treatment afforded the opportunity to test the hypotheses presented in the study and answer the research questions.

Research Questions

Four research questions were developed.

1. What is the impact of the infused theater arts program on fifth grade students' academic achievement as measured by language arts performance on the New Jersey Assessment of Skills and Knowledge (NJASK5)?
2. What is the impact of the infused theater arts program on fifth grade students' academic achievement as measured by language arts marking period grades?
3. How has the infused theater arts program influenced students' learning and pro-cognitive behaviors?
4. How has the infused theater arts program influenced teachers' behaviors?

Summary of Findings

Research Hypothesis 1

Student Achievement

Measure: Language arts scale score

When language arts scale scores were used as a measure of students' academic achievement, the findings supported the prediction made in Research Hypothesis 1. Fifth grade students' academic achievement was significantly impacted by the infused theater arts program. A comparison of the mean scores among subgroups within the sample membership indicated that subgroups, which participated in the treatment/intervention for sustained periods, performed better on average than their peers who were taught using the traditional curriculum.

A comparison of the mean score for participants in the subgroup intervention fifth graders who were intervention fourth graders with the mean score of the subgroup control fifth graders who were control fourth graders revealed that students who were in the treatment/intervention for 2 years outperformed their peers who were in the control group for the same period of time. Participants in the subgroup that participated in the treatment/intervention for 2 years scored significantly higher than participants who were in the control group for 2 years. The mean difference of 12.22 was statistically significant.

Further comparison between the scores of participants in the subgroup intervention fifth graders who were intervention fourth graders, and control fifth graders who were in the intervention as fourth graders did not yield a significant difference. The mean difference was -4.10. Although the difference was not statistically significant, it is important to note that participants who were in the treatment/intervention for the fourth grade year only outperformed their peers who were in the treatment for the fourth and fifth grade years.

The inference here is that the benefits of the treatment/intervention were greater for students during the initial year at the earlier grade level. The findings also showed that when scores of the intervention fifth graders who were intervention fourth graders were compared with scores for treatment fifth graders who were control as fourth graders the participants who were in the treatment/ intervention for 2 years scored significantly higher than their peers who were entering the program as first time participants. The mean difference of 13.27 was statistically significant.

When comparisons were made between the scores of participants in the subgroup control fifth graders who were in the intervention as fourth graders and the scores of participants in the subgroup control fifth graders who were control fourth graders, the participants in the treatment/intervention group scored significantly higher than their peers who were involved with the traditional curriculum. The mean difference of 16.32 was statistically significant.

Further comparisons between the scores of participants in the subgroup control fifth graders who were in the intervention as fourth graders and scores of the participants in the subgroup treatment fifth graders who were control as fourth graders indicated that participants in the treatment/intervention in the fourth grade scored significantly higher than their peers who participated with the traditional curriculum in the fourth grade. The mean difference of 17.37 was statistically significant.

Comparisons of scores for the participants in the subgroup, control fifth graders who were control as fourth graders and treatment fifth graders who were control as fourth graders indicated no marked differences between the scores of participants in these two groups. The mean difference was 1.05. Both subgroups did not participate in the intervention/treatment in the fourth grade. This finding further suggests that the impact of the intervention/treatment may be greater for students at an earlier grade level.

As expected, subjects in the treatment/intervention groups performed better on average than their peers in control groups. However, the findings revealed an unexpected outcome. The researcher expected participants who were in the treatment/intervention for the fourth and fifth grade, those students who were exposed to the program for a longer period, to have outperformed their counterparts; instead, the highest mean score was

reported for those students who had the treatment/intervention only at the fourth grade level. The inference here is that while the impact of the program may be associated with the length of time participants are in the intervention/treatment, the grade level at which participants are introduced to the program is vitally important. The results of the findings showed that the impact of the program was more pronounced for participants at the earlier grade level. It is of importance to note that the timing of the intervention appeared to be a significant factor.

Unhypothesized Findings

Gender: Although student gender was not a significant factor, the results of the language arts scale scores showed female students outperforming male students in every subgroup except one. In addition, the findings showed males and females in the subgroups intervention fifth graders who were in the intervention in the fourth grade and control fifth graders who were in the intervention as fourth graders reporting higher mean scores than their counterparts who were in the control group and those participants who were new to the treatment/intervention. Interestingly, female students outperformed their male counterparts in each sub-group except in the sub-group control fifth graders who were in the intervention as fourth graders, where male students performed better on average than females. While student gender was not a significant factor in this analysis, it was still of interest to see how students of different genders performed within each of the membership categories.

School: A slightly different picture emerged when school and membership were used as the two main effects. The pattern of disordinal interaction indicated that there was a significant interplay between membership and school. Within schools, there were marked variations in students' performances, as indicated by the mean language arts scale scores. The findings showed that students within the subgroup intervention fifth graders who were intervention fourth graders at PS#8 and PS#11 reported higher mean scores than their counterparts in other schools. Notably, students in the subgroup control fifth graders who were control fourth graders at PS#27 performed better on average than five other schools.

However, the highest mean scores were reported in PS#20, PS#27, PS#11, and PS#23 among students in the subgroup control fifth graders who were in the intervention as fourth graders, subscribing to the pattern determined by earlier data. In six of the seven schools, there were no marked differences in the performances of students in the subgroup intervention fifth graders who were control as fourth graders.

Surprisingly, students in the subgroup control fifth graders who were intervention fourth graders and the subgroup treatment fifth graders who were control as fourth graders at PS#12 performed remarkably lower than students in all other schools. Numerous factors could have accounted for this differentiation. In writing about the role of poverty in school reform, Berliner (2005) argued that the success of educational efforts focused on schools and classrooms is directly dependent on what happens to the child outside the school. Furthermore, the students' performances could have been a direct outcome of the small number of participants within this school's sample, as well as the basic differences in the school's demographics as outlined in Chapter III of this study.

Socioeconomic status: Comparisons made were primarily based on students' lunch status. Students receiving free or reduced lunch were categorized as low socioeconomic status (LSES), and students who paid for lunch were classified as high socioeconomic status (HSES). Significant differences were found in favor of those students in the HSES group. In each category within membership, students in the HSES groups outperformed their peers in the LSES group.

A comparison of language arts scale scores for HSES and LSES students in the subgroup, intervention fifth graders who were intervention fourth graders showed approximately a 4% difference in favor of the HSES group. When language arts scale scores for HSES and LSES students within the subgroup control fifth graders who were control fourth grades were compared it was found that students in the HSES group scored approximately 7% higher than those students in the LSES category.

Further comparison of language arts scale scores for HSES and LSES students in the subgroup control fifth graders who were in the intervention as fourth graders revealed similar findings. Students in the HSES group outperformed their counterparts by approximately 7%. Finally, within the subgroup treatment fifth graders who were control as fourth graders, the language arts scale scores revealed a 5% difference in favor of those students in the HSES category. Although the performance of the students in the HSES category remained consistently higher than the performance of those students in the LSES category, an examination of the interaction effects suggests that the gap between LSES and HSES was wider in the control group.

Research Hypothesis 2

Measure: Marking Period Grades

While the findings indicate that students' marking period grades were significantly impacted by the infused theater arts program, the impact varied across groups within membership. It was apparent that the timing of the intervention/treatment, as well as the duration of the intervention/treatment, were critical factors.

The first marking period grades indicate that students in two of the treatment/intervention groups achieved higher grades than their peers. In the subgroup intervention fifth graders who were intervention fourth graders, approximately 43% of those students scored above the median grade B, compared to approximately 35% of those students in the subgroup control fifth graders who were control fourth graders. Further, approximately 58% of the students in the subgroup control fifth graders who were in the intervention in the fourth grade scored above the median grade B. However, only about 13% of the students in the subgroup treatment fifth graders who were control fourth graders had scores above the median grade B. Again, it can be seen that students who participated in the treatment at the earlier grade level tended to achieve higher grades. The data suggested that the grade level at which the treatment/intervention was implemented could impact the effectiveness of the program.

A shift from the findings in the first marking period to that of the fourth marking period revealed a similar pattern. While each subgroup within the sample reported an increase in the number of students receiving grades above the median grade B, students in the treatment/intervention groups continue to outperform their peers except

in the subgroup treatment fifth graders who were control as fourth graders. Students in the subgroup intervention fifth graders who were intervention fourth graders reported approximately 17% increase in the percentage of students receiving grades above the median grade B. When compared with students in the subgroup control fifth graders who were control fourth graders, there was approximately an 8% increase in the number of students receiving grades higher than the median B.

In the subgroup control fifth graders who were in the intervention as fourth graders, the number of student receiving grades above the median increased by approximately 12%, while in the subgroup treatment fifth graders who were control as fourth graders, there was approximately a 5% increase in the number of students receiving grades above the median.

While there appears to be a shift in the pattern in favor of those students who were in the intervention for both years, in that they reported a greater increase in the percentage of students receiving grades above the median, it was evident that students who were in the treatment/ intervention for a year or more were outperforming their peers in the other subgroups.

Unhypothesized Findings

When students' performances were examined based on students' gender, it was found that for both the first and fourth marking periods, students' gender was significant. However, in the first marking period there were no marked differences between the performances of male and female students in any of the sub-groups, except in the

subgroup control fifth graders who were control fourth graders, where approximately 9% more male than female students received grades higher than the median.

Conversely, findings from the fourth marking period showed higher percentages of females than males in every subgroup receiving grades above the median. Evidently, this could be due to girls being associated with the arts factor and boys being associated with the visual-spatial, interpersonal, and bodily-kinesthetic factor (Gardner, 1993). For the fourth marking period, approximately 12% more of females than males in the subgroup intervention fifth graders who were intervention fourth graders received grades higher than the median.

In the subgroup control fifth graders who were control fourth graders, approximately 27% more of female than male students received grades higher than the median. Remarkably, when the first and fourth marking period grades were compared within this group, there was minimal improvement in the percentage of male students receiving grades above the median. There were no differences between the percentages of Male and female students receiving grades above the median in the subgroup control fifth graders who were in the intervention in the fourth grade. However, there was approximately a 12% increase in the number of males and females receiving grades above the median in this group.

Finally, there were no differences between the percentages of male and female students receiving grades above the median in the subgroup treatment fifth graders who were control as fourth graders. Students in this subgroup showed approximately a 5% increase in the number of students receiving grades above the median when a comparison was made between the first and fourth marking periods.

To lend further support to these findings, students' marking period grades were also analyzed based on socioeconomic status. The findings revealed that socioeconomic status was a significant factor. For the first marking period, the high socioeconomic (HSES) category in each sub-group within membership reported a greater percentage of students receiving grades above the median than their counterparts in the low socioeconomic (LSES) category. A shift to the fourth marking period reflected a similar trend, except in the sub-group intervention fifth graders who were intervention fourth graders. In this group, approximately 3% more of those students in the LSES category received grades higher than the median.

Comparison of the grades across the two marking periods showed that in the subgroup intervention fifth graders who were intervention fourth graders, approximately 14% more of those students in the HSES category received grades higher than the median, compared with approximately 18% more for those students in the LSES category.

Within the subgroup control fifth graders who were control fourth graders, the HSES category showed a 10% increase in the percentage of students receiving grades above the median, compared with approximately 5% for the LSES group. The subgroup control fifth graders who were in the intervention as fourth graders showed the HSES category reflecting a 17% increase in the percentage of students receiving grades above the average, compared with approximately 7% increase for the LSES category. The subgroup reflecting the least percentage increase for both the HSES and LSES categories was the treatment fifth graders who were control as fourth graders. The percentage increase for this group was 5%. While differences in performances between the HSES

and LSES groups were evident, it is paramount to note that the performances of both groups were improved when marking period scores were compared.

The findings on students' academic achievement obtained from this infused theater arts study clearly suggests that students who participated in the infused theater arts program were more likely to attain higher mean scores at the states' standardized tests, as well as higher marking period grades. This was evident in both measures assessed: language arts scores from the New Jersey Assessment of Skills and Knowledge, and students' first and fourth marking period grades. The results obtained from the infused theater arts study corroborate the findings of major studies discussed in Chapter II. Consequently, these findings also refute claims made by other studies.

In one four-year study, Arts for Academic Achievement (AAA), conducted across nineteen Minneapolis Public schools, involving students in grades 3, 4 and 5, researchers found that there was a significant relationship between arts integrated instruction and improved student learning in reading and mathematics (Ingram & Riedel, 2003). The Annenberg study also found that in some cases the relationship between arts integrated instruction and student achievement was more powerful for disadvantaged learners (Ingram & Riedel, 2003, p. iv).

Data obtained from this infused theater arts study authenticates the findings of Ingram and Riedel (2003). Within the sample in this study, students who participated in the infused theater arts program for one year or more achieved better scores and received higher marking period grades than their peers who participated with the traditional curriculum. Further support for the Annenberg study is derived from the fact that all participants in the infused theater arts program are disadvantaged students. Findings

from the infused theater arts study are in direct contrast to beliefs proffered by Winner and Cooper (2000), who contended that there was little evidence in published studies to show a causal relationship between the arts and academic achievement.

Findings from this infused theater arts study also substantiate research findings of Catterall et al. (1999) who established that students who were highly involved in arts instruction performed better on standardized tests. This was evident by the performances of students on the language arts component of the New Jersey Assessment of Skills and Knowledge.

A similar study involving 10,000 students conducted by the Mississippi Arts Commission (2006) through a whole school reform initiative also lends support to findings of the infused theater arts study. The study found that students within the whole school initiative were more proficient in their literacy skills than other schools across the state or in the matched comparison groups.

The findings from the infused theater arts program revealed gains in students' academic achievement. This trend is also supported by findings of other major studies. Notably, the researcher found that students' performances were not negatively impacted as was evidenced by the improvement in the percentages of students reporting scores above the median in the fourth marking period. The program was also found to have no negative effect on the performances of students in the control groups.

Research Hypothesis 3

Measure: students' behaviors

To achieve optimal learning students must demonstrate certain behaviors that are pivotal to the success of the teaching-learning process. Teachers and students were asked to reflect on and rate these behaviors. The first measure used to assess the influence of the infused theater arts program on students' in-class behaviors was teachers assessment of individual students progress.

The findings revealed that significant differences in favor of the subgroup intervention fifth graders who were intervention fourth graders. For each category measured except, "attendance in class," "arriving at class on time," and "tardiness," over 20% more increase in progress was reported for this group. The findings seem to suggest that the progress gained was determined by the length of time students participated in the intervention/treatment.

When treatment teachers rated students' learning behaviors during the time artists were in the classroom, students' engagement, time on task, motivation to do well, willingness to participate in lessons, and ability to follow directions were rated most favorably. Additional ratings of students pro-cognitive behaviors showed marked differences in the percentages; teachers in the seven schools reporting improvement in student behaviors. Moreover, in four of the seven schools (PS#12, PS#23, PS#27, PS#34) more than 50% of the teachers reported improvement in students' engagement in language arts and students' overall engagement.

It is important to note that PS#23 and PS#27 were two of the four schools reporting the highest mean scores in language arts, for the sub-group, control fifth graders

who were in the intervention as fourth graders. In five of the seven schools between 50% and 100% of the teachers reported improvement in students' willingness to participate during lessons.

Findings on students' self-reflections of the infused theater arts workshops revealed each of the three participating groups agreeing that the workshops were beneficial. Proportionately more students in the subgroup intervention fifth graders who were in the intervention as fourth graders agreed that the workshops were worthwhile. One category, the workshops made learning fun, yielded a level of significance.

Findings on students' ratings of attributes associated with the infused theater arts program did not reveal marked differences in responses among the treatment/intervention and the control groups. The findings showed that students in all subgroups wanted to do better in school. However, a proportionately larger percentage of students in the subgroup intervention fifth graders who were intervention fourth graders agreed that they spent more time on their work in class. Although this difference was observed in one category, the finding further suggests that there may be an association between student behavior and the length of time students are in the program. The emergent theme among these findings indicate that the greatest impact on student behaviors occurred within the treatment/intervention group, which participated in the program for the longest period of time.

Although these findings varied across groups and among schools, in this study, the value of the arts and its influence on students' learning and pro-cognitive behaviors are evident. Similar determinations have been made in other studies. Researchers in the Center of Arts Education Research, Teachers College, Columbia

University (1999) studied over 2000 public school students in Grades 4 to 8, and found significant relationships between rich in-school arts programs and creative, cognitive, and personal competencies needed for academic success.

Similar findings were revealed by Catterall, et al. (1999) who followed more than 25,000 students in American secondary schools. This study found that there were significant differences in attitudes and behaviors between youths highly involved in the arts, and those with little or no arts engagement.

Research Hypothesis 4

Measure: Teacher behaviors

Teacher behaviors are pivotal to the successful implementation of any teaching-learning initiative. These behaviors can also be influenced by new initiatives. To assess the influence of the infused theater arts program on teachers' behaviors, data concerning teachers' beliefs about the arts, and more specifically about the infused theater arts program, were assessed. Of the seven measures rated by both treatment and control teachers, four were significant favoring the inclusion of the arts.

Although a proportionately greater percentage of treatment teachers agreed that the arts were beneficial in the classroom, the margin of difference between the two groups did not exceed 10% in any category. Approximately 100% of the teachers in both groups disagreed that bringing artists into the classroom can be disruptive. The findings tend to suggest that treatment and control teachers had positive views about the arts in the classroom.

The only significant finding revealed regarding treatment teachers' beliefs about the infused theater arts program was that the lessons were appropriate for students' learning styles. In each of the seven schools, teachers agreed on two measures: the lessons were developmentally appropriate, and the lessons were suitable for students with different learning styles. Within the constructs that frame the theoretical base for this study, these findings are consistent with the beliefs proffered by learning style theorists (Dunn & Dunn, 1993; Kolb, 1983; Myers-Briggs, 1977) and cognitive developmental theorists (Piaget 1959; Vygotsky, 1978). In three schools teachers agreed that they needed more help in learning how to integrate the arts; this was expected, because of the program stage at which the study was done.

However, proportionately more teachers in all schools felt that they understood how to integrate the arts in writing, that the arts made the writing process easier, and that using the arts to teach writing made the subject more interesting. These data indicating changes in teachers' behaviors are somewhat limited due to the small number of indicators used in the determination.

DISCUSSION

As predicted, as well as consistent with previous research findings, results of this study offer support for the enhancing effects of an integrated arts curriculum on students' behaviors and students' academic achievement. In proposing a case for multiple intelligences, Gardner (1990) offered that the intelligences were immersed in the arts. Gullatt (2007) extended the argument by suggesting that teaching through the intelligences parallels teaching through the arts. Placing this study within the constructs of the theoretical frame established in Chapter I, a logical explanation for the results has evolved.

Given the constructs of the frame outlined earlier in this study, if all students in the sample participated in the infused theater arts program, significant differences should not be observed in their performances. As expected, then, an examination of the findings of this study revealed statistically significant differences between the mean language arts scores and marking period grades of students participating in the intervention/treatment, and those students who were in the control groups.

Although the differences varied based on the length of time participants were in the treatment/intervention, these findings imply that the infused theater arts program provided the multiple exposures which contributed to students' cognitive abilities as reflected in greater academic gains. Furthermore, if the theoretical basis for this study, specifically theories about art and cognition, is correct, then students who participated in the infused theater arts program should have performed better on average in language arts literacy than their counterparts who were taught using the regular curriculum.

As previously mentioned, the interconnectedness of the brain predisposes this organ to process information in a multi-modal pattern. To substantiate this, Caine and Caine (1994, p. 5) offered, "Optimizing the human brain means using the brains infinite capacity to make connections--and understanding what conditions maximize this process." The infused theater arts curriculum presented students with learning opportunities, which supported the optimum functioning of the brain. According to Appel (2006), all forms of art can stimulate the brain and arouse intellectual curiosity. Eisner (2002a) submitted that art helps language development, and in making a cognitive argument for the arts Efland (2002) posited that cognition is a constructive process used to enable individuals to secure meaning.

Emphasizing the importance of the environment Jensen (2000) suggested an optimum learning environment in which mediums are frequently changed to stimulate students' learning. Cognitive developmental theorists (Bandura, 1977; Vygotsky, 1978) whose works are discussed in Chapter 2 of the study, also subscribed to the importance of the environment and those within the environment to the child's learning. It can therefore be presumed that the academic gains made by students who participated in the treatment/intervention was, in part, a result of the optimum environment provided.

Implications for Practice and Policy

Much of the research cited in this study established a link between arts and cognition. The federal No Child Left Behind (NCLB) legislation (2002) reaffirmed the arts as “a core academic subject” that all schools should teach. In May 2005, a poll showed that 93% of all Americans agreed that the arts are vital to a well-rounded education for children (Ruppert, 2006).

Deasy (2008) framed the arts within the context of the United States (USA) and its world leadership role. Imagination, innovation, and creativity, which are vital components of the arts, are credited with promoting the USA to its leadership status. Skills which businesses and corporate leaders deem essential for American success in the global economy are developed through the arts. Yet, opportunities for students to participate in arts instruction and activities have been slowly disappearing from classrooms.

Current findings from this infused theater arts study have further shown that students participating in an integrated arts program could achieve significant gains in academic achievement, as well as in those in-class behaviors deemed critical to students' academic success. Why, then, are studies in the arts slowing decreasing in public schools?

A 2004 study done by the Council on Basic Education indicated that schools nationally were decreasing the time spent on the arts. Furthermore, 36% of the principals reported a decrease in arts education in their schools, and 42% stated that cuts in arts were imminent (Chapman, 2004). Stakeholders contended that the time and resources

taken away from vital arts programs are the results of budget cuts, but more predominantly, the shifted emphasis to preparations for the state mandated standardized tests. Moreover, these practices appeared to be more prominent in disadvantaged districts similar to the school district in this study.

However, as Deasy (2008) suggested, for the arts to make their contribution, administrators, and policy makers need to understand the value of moving the arts from the margins of school priorities and time, to a more substantive role in the curriculum. Furthermore, in light of the findings which showed students in the infused theater arts program outperforming their peers who participated with the traditional curriculum, school leaders and boards of education should be cautious about reducing time and resources allocated to the arts in favor of test preparation practices. Mean differences in language arts scale scores between participating groups were statistically significant, in favor of those students who were in the treatment/intervention. Further, marking period grades were also significantly higher for those students who participated in the treatment/intervention. Significant gains were also observed for students in the high and low socioeconomic categories, as well as for female students.

The findings showed that the infused theater arts program did not disadvantage students, since teachers across the schools reported improvements in students' progress, and students' in-class behaviors. Additionally, there was no apparent decline in students' marking period grades, in any of the subgroups within membership, when grades for the first and fourth marking periods were compared. The researcher, therefore, suggests that incorporating the infused theater arts program into the schools' curriculum could be a step towards raising standardized test scores, nurturing those behaviors that support

students' learning, and at the same time help failing schools meet the rigorous mandates of the No Child Left Behind legislation.

Of importance to these findings is the element of time. A study by Upitis and Smithrim (2003) found that significant differences in students' achievement were commensurate with the longer period of time students were in the program. While findings of the infused theater arts program showed greater gains in student behaviors for those students who were in the treatment/intervention for the fourth and fifth grade years, greater academic gains were reflected for those students who were in the treatment/intervention for the fourth grade year only. While other factors could have contributed to this difference, the researcher recommends that this public school district implement the infused theater model starting at the third grade level to assess what gains would be made by students at an earlier age.

Caine and Caine (1994) stated that enriched environments contribute to more highly developed brains. The creative power of the brain is released when human beings are in environments that are positive, nurturing, and stimulating (Respress & Lutfi, 2006). Since schools proved to be a pivotal variable in the assessment of student gains, implied in these findings is that it is essential for the schools to provide right environment, resources, materials and activities, necessary for learning to take place. Because teachers are integral to the teaching-learning process, it may be of importance that this group is provided with relevant professional development opportunities to ensure their success and the success of the students.

Implications for Future Research

All too often, arts education researchers focus on demonstrating academic achievement without careful consideration of the underlying mechanisms (Winner & Hetland, 2002).

Within the context of this criticism the researcher proposes the following recommendations.

1. This investigation was conducted during the second year of a three-year study. It is therefore desirable that the study be replicated to draw further conclusions about students' progress during the third year of the treatment/intervention.
2. Further investigation should be conducted to ascertain why the gains, as reflected by language arts scores and marking period grades, were greater for those students who were in the treatment/intervention only for the fourth grade year.
3. The primary status of all schools in this study was basically the same, yet schools were a significant factor in this study. Further investigation needs to be undertaken to determine the variables that enabled students in some schools to perform better on average than others.
4. Because teachers are the primary implementers of any curriculum initiative, it is recommended that further studies be done using other data collection strategies, such as classroom observations, focus groups, and teachers' logs to better determine teachers' attitudes towards the implementation of the integrated theater arts program.
5. Replication of this study would be desirable in other urban school districts.

6. This study did not focus on determining the relationship between students' standardized test scores and students' marking period grades. However, the results of these findings suggest that a relationship may exist between these two variables. Therefore, it is recommended that further studies be conducted to ascertain if a relationship does exist between the standardized test scores and the marking period grades.
7. Finally, it is recommended that follow up studies be done to determine if students' progress will continue to improve after they have exited the program.

References

- Appel, M.P. (2006). *Arts integration across the curriculum*. Retrieved March 6, 2007, from [http:// thefreelibrary.com/Arts+integration+across+the+curriculum](http://thefreelibrary.com/Arts+integration+across+the+curriculum).
- Aschbacher, P.R. (1991). Humanitas: A thematic curriculum. *Educational Leadership*, 41(2), 16-19.
- Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice Hall.
- Bandura, A. (1994). Self-efficacy. In V.S. Ramachaudran (Ed.), *Encyclopedia of human Behavior* (pp.71-81). New York: Academic Press.
- Barr, S.B. (2006). How elementary arts specialists collaborate with classroom teachers in interdisciplinary instruction to meet both national fine arts and academic standards. Retrieved May 10, 2007 from <http://proquest.umi.com.ezproxy.shu.edu/pqdw>
- Berliner, D.C. (2005). *Our impoverished view of education reform*. Retrieved May 5, 2007 from <http://www.tcrecord.org/content.asp?contentid=12106>
- Boldt, R.W., & Brooks, C. (2006). Creative arts: Strengthening academics and building community with students at risk. *Reclaiming Children and Youth*, 14(4), 223-227.
- Boyes, L., & Reid, I. (2005). What are the benefits for pupils participating in arts activities? The view from the research literature. *Research in Education*, 73, 1-15.
- Brophy, J. & Allenman, J. (1991) A caveat: Curriculum integration isn't always a good Idea. *Educational Leadership* 49(2), 66.
- Burton, J. Horowitz, R., & Abeles, H. (1999). Learning in and through the arts: Curriculum implications. In E.B. Fiske (Ed.), *Champions of change: The impact of arts on learning* (pp.35-46). Washington, DC: The Arts Education Partnership and The President's Committee on the Arts and the Humanities.
- Campbell, D. T., & Stanley, J. C. (1963). *Experimental and quasi-experimental designs for research*. Hopewell, NJ: Houghton Mifflin.
- Caine, R., & Caine, G. (1991). *Making Connections: Teaching and the human brain*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Caine, R. N., & Caine, G. (1994). *Making connections: Teaching and the human brain*. New York: Innovative Learning Publications.

- Catterall, J., Chapleau, R., & Iwanaga, J. (1999). Involvement in the arts and human development. In E. B. Fiske (Ed.), *Champions of change: The impact of the arts on learning* (p.1-18). Washington, DC: Arts Education Partnership
- Chapman, L. (2004, November/December). No child left behind in art? *Arts Education Policy Review*, 106 (2), Retrieved May 16, 2007, from <http://people.uncw.edu/caropresoe/EDN523/chapmannclb.pdf>
- Corbett, D., Wilson, B., Morse, D. (2006). *The arts an "R" too*. Mississippi Arts Commission. Retrieved May 22, 2007, from <http://www.mswholeschools.org/downloads/WSIeval/Final2pdf>
- Creech, N., & Bhavnagri, N. (2002). Teaching elements of story through drama to 1st. grade. *Childhood Education*, 78(4), 219-224.
- Cromwell, S. (1989). A new way of thinking: The challenge of the future. *Educational Leadership* 49(1), 60-64.
- Deasy, R.J. (2008). *Why the arts deserve center stage*. Retrieved March 14, 2008, from <http://www.aasa.org/publications/saarticledetailtest.cfm?ItemNumber=10138>
- Doster, J. R. (2004). *Co-art education: A study of integrated curriculum*. Retrieved February 17, 2007, from <http://proquest.umi.com.ezproxy.shu.edu/pqdw>
- Drake, S. M., & Burns, R. C. (2004). *Meeting standards through integrated curriculum*. Alexandria, VA: Association of supervision and curriculum development.
- Dunn, R., & Dunn, K. (1993). *Teaching secondary students through their individual learning styles: Practical approaches for grades 7- 12*. Boston: Allyn & Bacon.
- Dunn, R., & Dunn, K. (1999). *The complete guide to the learning styles inservice system*. Boston: Allyn & Bacon
- Educational programs that work (1992). *The catalogue of the national diffusion network*. Longmont, CO: Sopris West.
- Eisner, E. W. (2002a). *The arts and the creation of the mind*. London: Yale University Press.
- Eisner, E. W. (2002b). What can education learn from the arts about the practice of education? *The encyclopedia of informal education* 5(4), 1-13.
- Efland, A. D. (2002). *Art and cognition*. New York: Teachers College Press.

- Fiske, E.B. (1999). *Champions of change: The impact of the arts on learning*. Retrieved April 26, 2007
<http://artsedge.kennedy-center.org/champions/pdfs/ChampsReport.pdf>
- Gardner, H. (2006). *Multiple intelligences: New horizons*. New York: Basic Books.
- Gardner, H. (2004). *Frames of mind: The theory of multiple intelligences*. New York: BasicBooks.
- Gardner, H. (1993b). *Multiple intelligences: The theory in practice*. New York: Basic Books
- Gardner, H. (1990). *Arts education and human development*. Los Angeles: The Getty Center for education in the arts.
- Gardner, H. (1973). *The arts and human development: A psychological study of the artistic process*. New York: Wiley & Sons.
- Green, F. (2002). *Brain and learning research: Implications for meeting the needs of diverse learners*. Retrieved April 26, 2007, from <http://www.questia.com>
- Gullatt, D.E. (2007). Research links the arts with student academic gains. *The Educational Forum*, 71(3), 211-220.
- Hall, E. (2002). Learning styles- is there an evidence base for this popular idea? *Education Review*, 19 (1) 49-56.
- Hartzler, D.S. (2000). *A meta-analysis of studies conducted on integrated curriculum programs and their effects on student achievement*. Retrieved February 26, 2007, from <http://proquest.umi.com.ezproxy.shu.edu/pqdw>
- Hoffman, L., Paris, S., & Hall, E. (1994). *Developmental psychology today*. New York: McGraw-Hill.
- Ingram, D., & Riedel, E. (2003). *Arts for academic achievement: What does arts integration do for students?* University of Minnesota: Minneapolis, MN: Center for Applied Research and Educational Improvement College of Education and Human Development.
- Jager, M. (2000). Integrating writing into the arts. *Journal of School Improvement* 1(1), 1-5.
- Jensen, E. (2000). *Brain-based learning: The new science of teaching and training* (Rev. ed.). Thousand Oaks, CA: Corwin Press.

- Jensen, E. (2005). *Teaching with the brain in mind*. (2nd ed.). Alexandria, VA: Association for Supervision and Curriculum Development.
- Jung, C. G. (1923). *Psychological types*. London: Routledge Kegan Paul.
- Klutz-Simanu, L. (1997). *Integrated curriculum: A reflection of life itself*. Retrieved March 6, 2007, from <http://www.prel.hawaii.edu>.
- Kolb, D. (2006). Learning styles model and experiential learning theory. Retrieved April 10, 2007, from www.businessballs.com/aboutus.htm
- Kolb, D. (1983). *Experience as the source of learning and development*. Englewood Cliffs, NJ. Prentice-Hall.
- Lake, K. (2001). *Integrated curriculum*. Retrieved March 3, 2007 from <http://www.nwrel.org/scpd/sirs/8c016.html>
- Lovelace, M.K. (2005). Meta-analysis of experimental research based on the Dunn and Dunn model. *Journal of Education Research*, 98(31)176-183).
- Matthews, J. (2001). *Impact of fine arts integration on third, fourth, and fifth graders' reading achievement in an urban magnet school*. Retrieved March 24, 2007, from <http://proquest.umi.com.ezproxy.shu.edu/pqdw>
- New Jersey Department of Education. (2002) *No child left behind act*. Retrieved May 10, 2007 from <http://www.nj.us/education/grants/nclb/>
- New Jersey Department of Education. (2006). *New Jersey State Report Card*. Retrieved April 13, 2007 from <http://education.state.nj.us/rc/rc06/>
- New Jersey Department of Education. (2005). *New Jersey State Report Card*. Retrieved April, 13 from <http://education.state.nj.us/rc/rc06/>
- New Jersey Department of Education (2004) *language arts literacy curriculum framework*. Retrieved March 19, 2007, from www.state.nj.us/education/frameworks/lal
- Ormrod, J. (2006). *Educational Psychology: Developing learners*. (5th ed.). Upper Saddle River, NJ. Prentice-Hall.
- Ormrod, J. (1999). *Human learning* (3rd ed.). Upper Saddle River, NJ. Prentice-Hall
- Parkay, F. W., & Hass, G. (2000). *Curriculum planning: A contemporary approach*. (7th ed.). Boston: Allyn & Bacon.

- Rabkin, N. & Redmond, R. (2006). The arts make a difference. *Educational Leadership* 63(5) 60-64.
- Respress, T., & Lutfi, G. (2006). Whole brain learning: The fine arts with students at risk. *Reclaiming children and youth*, 15(1), 24.
- Ruppert, S. (2006). *Critical evidence: How the arts benefit student achievement*. Retrieved June 8, 2007, from www.nasaa-arts.org
- Silver, H., Strong, R., Perini, M, (1997). Integrating Learning styles and multiple intelligences. *Educational Leadership*, 51(1) 22-27.
- Schunk, D. H., & Meece, J.L. (2005). *Self-efficacy development in adolescents*. Retrieved April 22, 2007, from <http://citeseerx.ist.psu.edu/showciting;jsessionid=8396393AD52698BBB74F3764B8F2785F?cid=3252450>
- Sylwester, R. (1994). What the biology of the brain tells us about learning. *Educational Leadership*, 51 (4), 22-26.
- Text of no child left behind act. (2002). Retrieved April 9, 2007 from <http://www.ed.gov/policy/elsec/leg/esea02/index.html>
- The white house (2002). Fact sheet: No child left behind act. Retrieved April 9, 2007, from <http://www.whitehouse.gov/news/releases/2002/01/20020108.html>
- Upitis, R., & Smithrim, K. (2003). *Learning through the arts: National Assessment Final Report Submitted to The Royal Conservatory of Music in Toronto*. Retrieved June 13, 2007, from <http://www.educ.queensu.ca/~artsLTTA.April.final.30.doc>
- US Department of Education (1983). *A Nation at risk*. Retrieved March 13, 2007 from www.ed.gov/pubs/Nat
- US Department of Education (2004). Child Nutrition and WIC Reauthorization Act PL108-265. Retrieved January 14, 2008, from http://www.fns.usda.gov/cnd/Governance/Legislation/Historical/PL_108-265.pdf
- Vars, G. F., Beane, J. A. (2001). Integrative curriculum in a standards-based world. Retrieved May 13, 2007 from <http://www.ericdigests.org/2001-1/curriculum.html>
- Vars, G.F. (2001). Can Curriculum integration survive in an era of high Stakes testing? *Educational Journal* 33(2), 7-17
- Vygotsky, L.S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, Massachusetts: Harvard University Press.

- Winner, E., & Cooper, M. (2000). Mute those claims: No evidence (yet) for a causal link between arts study and academic achievement. *Journal of aesthetic education* 34(3-4), 11-75
- Winner, E., & Hetland, L. (2002). Beyond the evidence given: A critical commentary on critical links. Retrieved May 17, 2007, from www.2.bc.edu/~winner/papers.html-13k
- Wolf, D.P. (1999). Why the arts matter in education. In E.B. Fiske (Ed.), *Champions of change: The impact of the arts on learning* (p. 91). Washington, DC: Arts Education Partnership.
- Zadmer, M. (1994). *Learning to read through the arts: Its emergence in context*. (Report No. ED 378 103). Educational resources information center (ERIC document reproduction service No. ED90. 2301- 022).

Appendix A

Treatment Teacher Survey-2007



TREATMENT TEACHER SURVEY
March 2007

This questionnaire is designed to assist us in understanding the impact of the infusion of the arts in your classrooms this year. We are interested in your opinions regarding the lessons, student learning and your overall assessment of the developmental appropriateness of the lessons. Thank you for taking the time to fill out the questionnaire.

1. What grade(s) do you teach? 4 ____ 5 ____
2. Which school are you currently working in? _____
3. What is your homeroom number? _____
4. Please check the one that best describes your involvement with the Education Arts Team Project.
 - a) This is my first year in the project _____
 - b) This is my second year in the project _____
5. Please check all that apply. I have the following students in my class:
Regular education ____ Bilingual ____ Special Education ____ Gifted ____
6. How long have you been teaching at this grade level? _____

5. Directions: Which of the following Units have been implemented in your class, and how would you rate the overall effectiveness of the lessons associated with each unit? (Check all that apply **Circle** the number that best matches your rating.)

UNIT	# of Lessons	Very Effective	Effective	Somewhat effective	Not effective	Definitely not effective
Storymaking with Mime and Puppets (Grade 4)		5	4	3	2	1
Building a Nation: Bringing the American Revolution to Life (Grade 4)		5	4	3	2	1
Basket Moon: Exploring the Meaning of family and Tradition (Grade 4)		5	4	3	2	1
Creating a Tall tale: Using Creativity and the Imagination to Invent our Own Stories (Grade 5)		5	4	3	2	1
In the Land of the Pharaohs: Using Drama to Introduce the History and Culture of Ancient Egypt (Grade 5)		5	4	3	2	1
Gods and Goddesses of Ancient Greece: Dramatizing Mythology (Grade 5)		5	4	3	2	1
Rumpelstilskin: Using Process Drama to Extend Story (Grade 5)		5	4	3	2	1

6. To what extent were the objectives of the lessons clear?

Very Clear Clear Somewhat Clear Unclear

If you rated the lesson objectives to be somewhat clear or unclear, please explain.

7. Did you see a link between the lessons and the Core Curriculum Standards?

Yes

No

8. What did you do while the artist was in your classroom working with students on a lesson?

What was the artist's role?

9. After the artist (s) completed the lesson (s), did you engage in any follow-up learning activity with your class? Yes No

If yes, Please Explain

10. Which of the units/lessons would you feel most comfortable teaching on your own?

11. How comfortable would you be in creating your own lesson plans incorporating some element of the theatre arts?

- Very comfortable
- Comfortable
- Somewhat comfortable
- Uncomfortable
- Definitely uncomfortable

12. How likely are you to use with your students the strategies demonstrated by the artists?

- Very likely
- Likely
- Somewhat likely
- Unlikely
- Definitely unlikely

13. How would you rate the pacing of the lessons?

- Excellent
- Fair
- Poor

Part B: The following questions concern the impact of the project on student learning. In answering the questions, please think only about student behaviors while the artists were in your classroom.

13. Directions: During these lessons how would you rate each of the following student learning behaviors? Please use the following scale and **circle** the number that best matches your feelings.

Behavior	Excellent	Fair	Poor
Student engagement	3	2	1
Time on Task	3	2	1
Motivation to do well	3	2	1
Ability to interact with peers	3	2	1
Students' expression of their feelings	3	2	1
Students' willingness to participate during the lessons	3	2	1
Students' abilities to retain concepts	3	2	1
Students' abilities to transfer knowledge from one subject to another	3	2	1
Students' abilities to form relationships among ideas	3	2	1
Students' abilities to conceive different vantage points	3	2	1
Students' abilities to sustain focus	3	2	1
Students' abilities to think critically	3	2	1
Students' ability to follow directions	3	2	1
Students ability to problem solve	3	2	1
Students' ability to use language more effectively	3	2	1
Students' abilities to construct and organize their thoughts	3	2	1

14. Directions: For most of the students in your class, would you say that as a function of the theater arts project their behaviors have improved, stayed about the same or declined? Please **circle** the appropriate response.

PLEASE RATE FOR ALL STUDENTS IN YOUR CLASS

Behavior	Improved or Increased	Stayed about the Same	Declined
Students engagement in language arts	3	2	1
Students engagement in social studies	3	2	1
Students overall active engagement in class	3	2	1
Students' Time on Task	3	2	1
Students' motivation to do well academically	3	2	1
Students' ability to interact in groups	3	2	1
Students' tolerance for others	3	2	1
Students' expression of their feelings more appropriately	3	2	1
Students' abilities to get along with others	3	2	1
Students' willingness to participate during the lessons	3	2	1
Students abilities to form new friendships	3	2	1
Students' abilities to retain concepts	3	2	1
The number of meaningful peer interactions among students in your class	3	2	1
Students taking more risks academically and socially	3	2	1
Students in-class behaviors	3	2	1
Students' abilities to deal with and solve conflicts	3	2	1
Students' abilities to transfer knowledge from one subject to another	3	2	1
Students' abilities to form relationships among ideas	3	2	1
Students' abilities to conceive different vantage points	3	2	1
Students' abilities to sustain focus	3	2	1
Students' abilities to think critically	3	2	1
Students' ability to follow directions	3	2	1
Students ability to problem solve	3	2	1
Students' ability to use language more effectively	3	2	1
Students' abilities to construct and organize their thoughts	3	2	1
Students' abilities to retain concepts in language arts	3	2	1
Students' abilities to retain concepts in social studies	3	2	1

15. Do you currently have any student who has a special education classification?

Yes No

Directions: If yes, please **rate** how these students' behaviors have improved in each of the following areas; if no please goes to question 16.

FOR SPECIAL EDUCATION STUDENTS ONLY, PLEASE RATE THEIR BEHAVIORS IN THE FOLLOWING AREAS

Behavior	Improved	Stayed about the Same	Declined
Students' engagement in language arts	3	2	1
Students' engagement in social studies	3	2	1
Students' overall active engagement in class	3	2	1
Students' Time on Task	3	2	1
Students' motivation to do well academically	3	2	1
Students' ability to interact in groups	3	2	1
Students' tolerance for others	3	2	1
Students' expression of their feelings more appropriately	3	2	1
Students' abilities to get along with others	3	2	1
Students' willingness to participate during the lessons	3	2	1
Students abilities to form new friendships	3	2	1
Students' abilities to retain concepts	3	2	1
The number of meaningful peer interactions among students in your class	3	2	1
Students taking more risks academically and socially	3	2	1
Students in-class behaviors	3	2	1
Students' abilities to deal with and solve conflicts	3	2	1
Students' abilities to transfer knowledge from one subject to another	3	2	1
Students' abilities to form relationships among ideas	3	2	1
Students' abilities to conceive different vantage points	3	2	1
Students' abilities to sustain focus	3	2	1
Students' abilities to think critically	3	2	1
Students' ability to follow directions	3	2	1
Students ability to problem solve	3	2	1
Students' ability to use language more effectively	3	2	1
Students' abilities to construct and organize their thoughts	3	2	1

Students' abilities to retain concepts in language arts	3	2	1
Students' abilities to retain concepts in social studies	3	2	1

16. **Directions:** Please indicate how strongly you agree with each of the following statements by **circling** the number that comes closest to your feelings.

Statement	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
The infusion of the arts in my classroom this year has made concepts in the writing process easier for students to understand.	5	4	3	2	1
The infusion of the arts in my classroom this year has made concepts in social studies easier for my students to understand.	5	4	3	2	1
Using the arts to teach writing has made the subject more interesting for students in my class.	5	4	3	2	1
Using the arts to teach social studies has made the subject more interesting for students in my class,	5	4	3	2	1
I understand how to integrate the arts in the teaching of writing.	5	4	3	2	1
I understand how to integrate the arts in the teaching of social studies.	5	4	3	2	1
I feel that I need more support in knowing how to incorporate the arts in my teaching.	5	4	3	2	1
I believe that the lessons were developmentally appropriate.	5	4	3	2	1
The lessons were appropriate for students with different learning styles.	5	4	3	2	1
My understanding of art delivery strategies has been enhanced because of the project.	5	4	3	2	1
The Arts Infusion Project has helped me to better understand the arts standards.	5	4	3	2	1

Appendix B

Theatre/ Arts Infusion Project: Teacher Assessment

Theatre/Arts Infusion Project

Student Name _____ School _____
 Name _____ Home Room Number _____

Teacher assessment

For each student in your class please indicate the progress that has been made since the beginning of the school year in the following areas.

Indicators of Progress

a- Significant progress **c- Slight progress** **e- Slight decline** **g- Significant decline**
b- Moderate progress **d- No change** **f- Moderate decline**

Behavior category	Behavior change						
Please choose from the above behavior change options							
Behavior							
1) Turning in homework on time	a	b	c	d	e	f	g
2) Completion of homework to teacher's satisfaction	a	b	c	d	e	f	g
3) Participation in class	a	b	c	d	e	f	g
4) Volunteering (e.g. for extra credits or more responsibilities)	a	b	c	d	e	f	g
5) Attendance in class	a	b	c	d	e	f	g
6) Attentiveness in class	a	b	c	d	e	f	g
7) Behavior in class	a	b	c	d	e	f	g
8) Motivation to learn	a	b	c	d	e	f	g
9) Getting along with other students	a	b	c	d	e	f	g
10) Arriving at class on time	a	b	c	d	e	f	g
11) Staying on task	a	b	c	d	e	f	g
12) Overall academic performance	a	b	c	d	e	f	g
13) Tardiness	a	b	c	d	e	f	g
14) Interest in school	a	b	c	d	e	f	g
15) Academic performance in reading/ language arts this year	a	b	c	d	e	f	g
16) Academic performance in social studies	a	b	c	d	e	f	g

Language Arts Grade Received First Marking Period	
Language Arts Grade Received Second Marking Period	
Language Arts Grade Received Third Marking Period	
Language Arts Grade Received Fourth Marking Period	
Social Studies Grade Received First Marking Period	
Social Studies Grade Received Second Marking Period	
Social Studies Grade Received Third Marking Period	
Social Studies Grade Received Fourth Marking Period	

Number of Days ABSENT _____

Appendix C
Student Survey

Student Survey



Name _____ Grade _____ Class _____
 Home Room Number _____ School _____

Please mark the circle beside the answer that you feel is most right for you. Your answers will be confidential. No one from your school or home will see what you write.

1. Most days I am happy to come to school.

- Strongly agree
- Agree
- Not sure
- Disagree
- Strongly disagree

2. Studying the arts will help me find a good job when I'm older.

- Strongly agree
- Agree
- Not sure
- Disagree
- Strongly disagree

3. At school I would like to do more

	Agree a lot	Agree	Disagree	Disagree a lot
a) Language Arts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Social Studies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Drawing/painting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Music	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Acting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Dance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. I think Acting, Drawing, Dance, and Music are important school subjects.

- Strongly agree

- Agree
- Not sure
- Disagree
- Strongly disagree

**Please Go To
the Next Page**



5. Tell us if you agree with each of the questions below:

	Agree a lot	Agree	Disagree	Disagree a lot
a) I made new friends in my class this year.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) I am getting better in reading and writing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) I am getting better in social studies.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Sometimes my teacher tells me to behave.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) I enjoy working in groups in class.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) I want to do better in school.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) I like to listen to what my classmates say.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) I am afraid to get up and speak out in front of the class.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) Acting helps me to remember what I learn in social studies.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j) I spend more time on my work in class.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. I believe that Drawing, Acting, Music and Dance are good ways for me to learn.

- Strongly agree
- Agree
- Not sure
- Disagree
- Strongly disagree

Please Go To
the Next Page



7. I can show what I know in many subjects through singing, drawing, dancing and acting.

- Strongly agree
- Agree
- Not sure
- Disagree
- Strongly disagree

8. How do you feel about the following statements:

	Agree a lot	Agree	Disagree	Disagree a lot
a) I like school.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) I have many friends in this school.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) My teachers care about me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Some days I just don't feel like coming to school.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Students care about each other in this school.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) I feel I learn a lot in my classes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please Go To
the Next Page



THIS QUESTION SHOULD BE COMPLETED BY STUDENTS IN THE TREATMENT GROUP ONLY.

10. Throughout the school year teaching artists have been visiting your classrooms. We would like to know how you feel about the activities that the artists do while in your classroom. How strongly do you agree with each of the following questions:

	Agree a lot	Agree	Disagree	Disagree a lot
a) The workshops make learning fun	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) The workshops helped me to work better with my classmates in groups	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) The workshops have had a positive effect on how we treat each other in our class	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) I feel that the workshops help me to remember my school work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) I would like to have more workshops with the artists.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

You are all finished. Thank you.

Appendix D

Summary of Means and Standard Errors

Summary of Means and Standard Error

Mean and Standard Error Data for Marking Period Grades for the Whole Group

Variable	n=	Mean	Standard Error
Language Arts 07	1199	205.80	.709
Scale Score			
Language Arts	903	5.75	.058
Grade 1 st MP			
Language Arts	917	5.73	.060
Grade 2 nd MP			
Language Arts	928	5.82	.062
Grade 3 rd MP			
Language Arts	686	5.91	.069
Grade 4 th MP			
Social Studies	906	5.87	.064
Grade 1 st MP			
Social Studies	919	5.98	.065
Grade 2 nd MP			
Social Studies	928	5.83	.068
Grade 3 rd MP			
Social Studies	686	6.04	.072
Grade 4 MP			

Mean and Standard Error Data for Marking Period Grades for '07 Control and Treatment Students, Not Limited to Sample in Study

Variable	Status	n=	Mean	Standard Error
Language Arts 07 Scale Score	Control	481	205.00	1.096
	Treatment	499	211.54	.968
Language Arts Grade 1 st MP	Control	371	5.88	.089
	Treatment	410	5.63	.088
Language Arts Grade 2 nd MP	Control	373	5.77	.094
	Treatment	419	5.65	.089
Language Arts Grade 3 rd MP	Control	377	5.95	.094
	Treatment	421	5.67	.094
Language Arts Grade 4 th MP	Control	285	6.09	.106
	Treatment	318	5.73	.105
Social Studies Grade 1 st MP	Control	372	6.00	.101
	Treatment	409	5.74	.097
Social Studies Grade 2 nd MP	Control	374	6.16	.101
	Treatment	418	5.74	.098
Social Studies Grade 3 rd MP	Control	377	5.90	.110
	Treatment	418	5.82	.097
Social Studies Grade 4 MP	Control	285	6.16	.117
	Treatment	317	5.99	.102

Mean and Standard Error Data from Student Survey for '07 Control and Treatment

Students, Not Limited to Sample in the Study

Variable	Status	n=	Mean	Standard Error
Most days I am happy to come to school.	Control	402	3.79	.052
	Treatment	430	3.88	.051
Study the arts will help me find a good job.	Control	401	4.07	.050
	Treatment	427	4.04	.049
At school I'd like to do more Language Arts.	Control	378	2.92	.046
	Treatment	409	2.98	.040
At school I'd like to do more Social Studies.	Control	373	2.92	.046
	Treatment	405	2.96	.044
At school I'd like to do more drawing/painting.	Control	375	3.53	.040
	Treatment	412	3.55	.037
At school I'd like to do more music	Control	372	2.95	.050
	Treatment	403	3.15	.046
At school I'd like to do more acting	Control	364	3.07	.053
	Treatment	408	3.22	.046
At school I'd like to do more dance	Control	372	2.94	.059
	Treatment	411	2.97	.056

Mean and Standard Error Data from Student Survey for '07 Control and Treatment Students, Not Limited to Sample in the Study(continued)

Variable	Status	n=	Mean	Standard Error
I think acting, drawing, dance and music are important school subjects.	Control	400	3.60	.063
	Treatment	427	3.70	.059
I made new friends in my class this year.	Control	401	3.56	.038
	Treatment	429	3.52	.036
I am getting better at reading and writing.	Control	398	3.34	.032
	Treatment	425	3.38	.031
I am getting better in social studies.	Control	397	3.19	.036
	Treatment	421	3.25	.033
Sometimes my teacher tells me to behave.	Control	397	2.73	.054
	Treatment	424	2.71	.051
I enjoy working in groups in class.	Control	396	3.39	.044
	Treatment	425	3.41	.041
I want to do better in school.	Control	398	3.75	.027
	Treatment	424	3.81	.021
I like to listen to what my classmates say.	Control	394	3.12	.042
	Treatment	421	3.13	.040

Mean and Standard Error Data from Student Survey for '07 Control and Treatment Students, Not Limited to "Sample in the Study (continued).

Variable	Status	n=	Mean	Standard Error
I am afraid to get up and speak out in front of the class.	Control	396	2.59	.061
	Treatment	425	2.44	.055
Acting helps me to remember what I learned in social studies.	Control	400	2.49	.054
	Treatment	424	2.64	.050
I spend more time on my work in class	Control	397	3.19	.041
	Treatment	423	3.19	.039
I believe that drawing, acting, music and dance are good ways for me to learn.	Control	397	3.67	.063
	Treatment	426	3.94	.054
I can show what I know through drawing, dancing and acting.	Control	399	3.60	.061
	Treatment	428	3.77	.056
I like school.	Control	398	3.11	.041
	Treatment	425	3.11	.041
I have many friends in this school.	Control	398	3.57	.037
	Treatment	427	3.54	.038
Some days I just don't feel like coming to school.	Control	398	3.07	.051
	Treatment	425	3.05	.049

Mean and Standard Error Data from Student Survey for '07 Control and Treatment Students, Not Limited to Sample in the Study(continued)

Variable	Status	n=	Mean	Standard Error
Students care about each other in this school.	Control	397	2.59	.050
	Treatment	424	2.46	.049
I feel I learn a lot in my classes.	Control	399	3.65	.030
	Treatment	426	3.58	.031
The workshops made learning fun.	Treatment	393	3.59	.032
The workshops helped me to work better with my classmates in groups.	Treatment	392	3.29	.041
The workshops have had a positive effect on how we treat each other in class.	Treatment	393	2.97	.047
I feel that the workshops help me to remember my schoolwork.	Treatment	393	3.11	.042
I would like to have more workshops with the artists	Treatment	393	3.46	.042

Mean and Standard Error Data for Student Survey Variables for the Whole Group

Variable	n=	Mean	Standard Error
Most days I am happy to come to school.	975	3.83	.034
Study the arts will help me find a good job.	971	4.04	.032
At school I'd like to do more Language Arts	911	2.95	.028
At school I'd like to do more Social Studies.	905	2.93	.030
At school I'd like to do more drawing/painting.	923	3.54	.025
At school I'd like to do more music	902	3.03	.032
At school I'd like to do more acting.	899	3.15	.032
At school I'd like to do more dance	910	2.94	.037
I think acting, drawing, dance and music are important school subjects.	967	3.65	.040
I made new friends in my class this year.	973	3.53	.024

Mean and Standard Error Data for Student Survey Variables for the Whole Group
(continued).

Variable	n=	Mean	Standard Error
I am getting better at reading and writing.	965	3.35	.021
I am getting better in social studies.	959	3.20	.023
Sometimes my teacher tells me to behave.	963	2.72	.034
I enjoy working in groups in class.	962	3.41	.027
I want to do better in school.	964	3.78	.016
I like to listen to what my classmates say.	956	3.13	.027
I am afraid to get up and speak out in front of the class.	960	2.52	.038
Acting helps me to remember what I learned in social studies.	966	2.58	.034
I spend more time on my work in class	961	3.20	.026
I believe that drawing, acting, music and dance are good ways for me to learn.	965	3.80	.039

Mean and Standard Error Data for Student Survey Variables for the Whole Group
(continued).

Variable	n=	Mean	Standard Error
I can show what I know through drawing, dancing and acting.	969	3.68	.038
I like school.	965	3.10	.027
I have many friends in this school.	968	3.55	.025
Some days I just don't feel like coming to school.	964	3.06	.033
Students care about each other in this school.	963	2.49	.032
I feel I learn a lot in my classes.	967	3.60	.021

Mean and Standard Error Data from Teacher Assessment for '07 Control and Treatment Students, Not Limited to Sample in the Study

Variable	Status	n=	Mean	Standard Error
Turning in homework on time.	Control	395	4.57	.089
	Treatment	416	4.74	.086
Completion of homework to teacher's satisfaction.	Control	395	4.55	.086
	Treatment	418	4.81	.087
Participation in class.	Control	395	4.88	.074
	Treatment	418	5.05	.075
Volunteering	Control	394	4.76	.066
	Treatment	416	4.97	.074
Attendance in class.	Control	394	4.98	.076
	Treatment	408	4.82	.066
Attentiveness in class.	Control	394	4.69	.082
	Treatment	419	4.76	.081
Behavior in class.	Control	391	4.57	.082
	Treatment	416	4.72	.081
Motivation to learn.	Control	394	4.75	.075
	Treatment	419	5.13	.189
Getting along with other students.	Control	394	4.69	.080
	Treatment	416	4.94	.072

Mean and Standard Error Data from Teacher Assessment for '07 Control and Treatment Students, Not Limited to Sample in the Study (continued).

Variable	Status	n=	Mean	Standard Error
Arriving at class on time.	Control	393	4.74	.074
	Treatment	409	4.67	.073
Staying on task.	Control	394	4.59	.080
	Treatment	418	4.70	.079
Overall academic performance.	Control	395	4.74	.080
	Treatment	414	4.91	.086
Tardiness.	Control	393	4.69	.072
	Treatment	405	4.50	.068
Interest in school.	Control	392	4.72	.074
	Treatment	417	4.98	.077
Academic performance in reading/language arts this year.	Control	393	4.84	.069
	Treatment	418	5.00	.080
Academic performance in social studies.	Control	395	4.80	.069
	Treatment	418	5.00	.080

Mean and Standard Error Data for Teacher Assessment Variables for the Whole Group

Variable	n=	Mean	Standard Error
Turning in homework on time.	944	4.69	.057
Completion of homework to teacher's satisfaction.	946	4.71	.056
Participation in class.	945	5.00	.048
Volunteering	944	4.91	.045
Attendance in class.	935	4.93	.046
Attentiveness	945	4.76	.052
Behavior in class.	940	4.68	.058
Motivation to learn.	946	4.97	.091
Getting along with other students.	943	4.85	.050
Arriving at class on time.	933	4.74	.048
Staying on task.	946	4.69	.051
Overall academic performance.	943	4.86	.053
Tardiness.	930	4.61	.046
Interest in school.	942	4.90	.048
Academic performance in reading/language arts this year.	945	4.96	.048
Academic performance in social studies.	947	4.93	.048

Mean and Standard Error Data for Treatment Teacher Assessment of Variables			
Variable	n=	Mean	Standard Error
Engagement in Language arts	23	2.52	.106
Engagement in social studies	23	2.43	.106
Overall active engagement in class	23	2.48	.106
Time on task	23	2.04	.043
Motivation to do well academically	23	2.26	.094
Ability to interact in groups	23	2.61	.104
Tolerance of others	23	2.43	.106
Expression of feeling appropriately	23	2.41	.107
Getting along well with others	23	2.26	.094
Willingness to participate during the lessons	23	2.61	.104
Forming new friendships	23	2.26	.113
Retain concepts	23	2.17	.081
Meaningful peer interactions among students	23	2.35	.102
Taking more risks academically and socially	23	2.39	.122
In-class behaviors	23	2.17	.102
Dealing with and solving conflicts	23	2.13	.095
Transfer of knowledge from one subject to another	23	2.35	.102
Forming relationships among ideas	23	2.35	.102

Mean and Standard Error Data for Teacher Variables (Treatment Group Only)

Variable	n=	Mean	Standard Error
Using the arts to teach writing has made the subject more interesting for students in my class	23	4.39	.122
The infusion of the arts in my classroom this year has made concepts in the writing process easier for students to understand	23	3.96	.133
The infusion of the arts in my classroom has made concepts in the social studies easier for students to understand	22	3.95	.180
Using the arts to teach social studies has made the subject more interesting for students in my class	23	4.35	.135
I understand how to integrate the arts in the teaching of writing	23	4.17	.136
I understand how to integrate the arts in the teaching of social studies	23	4.04	.160
I feel that I need more support in learning how to incorporate the arts in my teaching	23	3.83	.185
I believe that the lessons were developmentally appropriate	23	4.52	.106
The lessons were appropriate for students with different learning styles.	23	4.52	.106