

## Contribution of Drama-Based Strategies

ELAINE M. WALKER,<sup>1</sup> LAUREN BOSWORTH McFADDEN,<sup>2</sup>  
CARMINE TABONE,<sup>3</sup> AND MARTIN FINKELSTEIN<sup>1</sup>

<sup>1</sup>Department of Educational Leadership, Management, and Policy, Seton Hall University, South Orange, New Jersey, USA

<sup>2</sup>Department of Educational Studies, Seton Hall University, South Orange, New Jersey, USA

<sup>3</sup>Educational Arts Team, Jersey City, New Jersey, USA

*Building on a stream of educational research that has focused on the impact of the arts on performance in traditional academic subjects, the current study investigated the impact of integrating theatre arts into the language arts and social studies curricula on fourth- and fifth-grade students' cognitive, procognitive, and prosocial development. The study employed a randomized controlled design in which twenty-eight fourth- and fifth-grade classrooms (fourteen at each grade level) at seven district elementary schools were randomly assigned to the "treatment" condition. Twenty-eight were randomly assigned to the control group. Logistic regression models were fitted to the data. The findings provided strong confirmatory evidence on the contribution of the arts in strengthening students' performance in the traditional curricular areas.*

Through its Arts Education Model Development and Dissemination (AEMDD) program, the Department of Education has supported several studies on how the arts and in particular arts integration facilitate academic achievement. Renewed interest in arts integration has stemmed from two trends: educational reform initiatives that have sharpened the focus on accountability, particularly in the areas of language arts and mathematics; and a scaling back of what are considered to be "peripheral" programs, prominently those associated with the arts. Indeed, Chapman (2004) noted that between 2000 and 2004, there was a significant decline among schools in their support of the arts, with those serving high minority populations witnessing the most severe cut.

Paradoxically, this decline in support has occurred simultaneously with a burgeoning stream of findings from educational research; see, for example, Rabkin and Redmond's study, which clearly demonstrates the pivotal role of the arts in achieving important educational goals (2006). These findings point to both the instrumental and substantive educational benefits garnered from arts education. Instrumentally, there is increasing evidence that the arts are a useful vehicle for engaging students in their "basic" academic work (Caterall, Chapleau, and Iwanaga 1999; Corbett, Wilson, and Morse 2006; Ingram and Riedel 2003). Substantively, there is an emerging body of evidence that student engagement with the arts *in and of itself* develops important critical thinking and intellectual skills that are transferable to other disciplines (Newmann 2000; Upitis and Smithrim 2003). Moreover, there is strong evidence that these instrumental and substantive impacts

Address correspondence to Elaine M. Walker, Department of Educational Leadership, Management, and Policy, Seton Hall University, 400 South Orange Avenue, South Orange, NJ 07079. E-mail: Elaine.Walker@shu.edu

are greatest for precisely those students that schools have been failing, notably poor children, children with special needs, and children of racial and ethnic minorities (Caterall, Chapleau, and Iwanaga).

These encouraging results have been tempered somewhat by criticisms that studies investigating the effects of the arts on academic outcomes have lacked methodological rigor (Deasy 2002; Eisner 1998, 2002; Gee 2003; Hetland and Winner 2004). Hence, there have been renewed calls for the employment of more rigorous research designs in the field of arts integration (Arts Education Partnership 2004). The U.S. Department of Education's AEMDD program provides arts educators and researchers with the opportunity to build stronger designs that allow one to answer the question of whether the arts help to strengthen students' performance in the traditional content areas. Randomized controlled designs as well as quasi-experimental designs provide the tools to engage in effectiveness trials in which tight controls for other countervailing factors can be introduced and accounted for.

In this article, we present the findings of a drama-based arts integration project on fourth and fifth graders' academic outcomes in language arts and social studies. Students in twenty-eight fourth- and fifth-grade classes in fourteen urban elementary schools were randomly assigned to receive either an arts-integrated language arts and social studies curriculum or a traditional curriculum. We hypothesized that students in the arts integration classes would demonstrate significantly better performance in both subject areas compared with students receiving only the traditional curriculum. A secondary hypothesis that we posited was that the exposure to the arts would enhance students' prosocial and procognitive growth.

### **Related Literature**

Some scholars, for example Morrell (2002), have argued that for students from urban backgrounds, their failure to acquire literacy skills is attributable to the inaccessibility of an in-school curriculum that tends to be reflective of the dominant culture. Thus, these students' outsider status thwarts their attempts to navigate their in-school literacy experiences. These observations are reinforced by recent developments in the field of literacy, which have questioned how students make meanings (Kress 2003). It has been suggested that traditional pedagogy has tended to focus meaning making through "words." However, research has shown that in making meaning, students use a variety of complex strategies while drawing on a number of mediums, materials, and modalities (Burnaford, Aprill, and Weiss 2001; Field 2006; Gardner 1999). Hence, we have seen the emergence of a proposed alternative pedagogy to the dominant language-based pedagogy. In this new pedagogy, students are exposed to more than one mode through which they can acquire and communicate meaning (Kress and van Leeuwen 1996, 2001). Indeed, Mayer and Moreno (2003) found that students retain information much better when words and pictures are combined as opposed to when words are the only medium.

Arts integration, which is multimodal in focus, is emblematic of a pedagogical approach to student learning in which a synchronization of multiple modes (the arts and text) is used to facilitate learning. Arts integration can be defined as an instructional approach that brings the arts into the core of the school day by fashioning cross-curricular linkages between the arts and other subject areas (Rabkin and Redmond 2006). It provides the impetus for promoting transmedial ways of learning and producing knowledge, in which understanding generated from one sign system (the arts) can be transformed into another sign system (words). Thus, based on semiotics (the understanding of sign systems),

arts integration facilitates a transmediation process through which meaning from one system such as acting gets translated to another such as writing (see Siegel's 1995 discussion on transmediation).

However, it cannot be said unequivocally that the research has produced any concrete and definitive answer regarding the positive benefits of arts integration on student knowledge. Specifically, the findings from studies that have examined the beneficial effects of arts integration have been somewhat conflicting. For example, Fisher and McDonald's study (2004) found that the infusion of the arts into other subject areas allowed for greater creativity, student interactions, and involvement. Similarly, Corbett, Wilson, and Morse (2006) reported that students' comprehension, retention, and ability to think creatively and critically increased when the arts were infused into the core subjects. A study by Upitis and Smithrim (2003) pointed to the positive beliefs that parents held about the arts. In the study, the researchers noted that 90 percent of parents believed that the arts motivated their children to learn. Parents whose children were involved in an integrated arts program also reported gains in their children's desire to attend school, in their confidence and self-esteem, academic abilities in other curricula areas, social skills, ability to express their emotions, and their enthusiasm for school (32).

In sharp contrast to these studies are the findings unearthed in Winner and Cooper's (2000) metainvestigation. These authors found no beneficial impact of the arts on student learning. A key factor that may help to explain these conflicting results centers on the intensity and richness of the arts integration curriculum. Data from Ingram and Riedel (2003) and Burton, Horowitz, and Abeles (1999), as well as data furnished by the National Educational Longitudinal Study of the Arts conclude from that students who are exposed to the arts for a *longer duration*, as well as students who are exposed to arts when infused into one or two content areas as opposed to being diffused across many subject areas, tend to show greater gains than students who experience shorter and more diffused infusion. There are other plausible factors that may further account for the mixed results yielded by studies on arts integration—in particular, issues related to the scientific rigor of the methodological designs employed in many studies (Deasy 2002). Without rigorous designs, researchers are hard pressed to make firm conclusions that arts integration leads to improved cognitive outcomes.

## Methods

### *Participants*

During 2006 and 2007, 1,140 students in Grades 4 and 5 from fourteen elementary schools in an urban school district in the Northeastern United States participated in the research. Classrooms were randomly assigned to one of two conditions: a) an arts-integrated curriculum in which drama-based strategies were infused in the social studies and language arts curriculum, or b) regular text-based language arts and social studies instruction.

### *Procedures*

The study was approved by the institutional review board of Seton Hall University. Students in Grades 4 and 5, who had written parent or guardian consent, were included in the study. The study employed an experimental treatment/control group design. Twenty-eight fourth- and fifth-grade classrooms (fourteen at each grade level) at seven district

elementary schools were randomly assigned to the “treatment” condition; and twenty-eight classrooms in seven other schools were randomly assigned to the control group.

### *Experimental Condition*

The Theatre Infusion project was designed to help students in Grades 4 and 5 improve academic performance, particularly in the areas of oral and written language skills, as well as learn how to create, perform, and respond to the arts. Students received twenty forty-five-minute lessons during the course of the school year (twenty designed for fourth grade and twenty for fifth grade). In addition, their teachers attended twelve hours of professional development training. Students who participated for two years as fourth and fifth graders received a total of forty lessons, while teachers in the project for two years received twenty-four hours of professional development. The lesson plans and professional development were centered on ways of integrating drama activities into the language arts and social studies curricula. They drew upon at least four traditions of educational drama: creative dramatics, theatre games, process drama, and puppetry.

The goal of this project was to demonstrate the effectiveness of using drama as an educational tool, while at the same time, prepare and coach teachers on how to use this approach in the future. To that end, the lesson plans were designed to be accessible for teachers unfamiliar with using drama in the classroom. An anticipated outcome was for teachers to feel more comfortable, competent, and knowledgeable addressing the theatre arts standards so that they would include drama strategies and techniques in their language arts and social studies lessons.

The educational drama and language arts integration lessons gave students the opportunity to take on imaginary roles and conflicting perspectives from the safe distance of “make believe.” In these fictional situations, students could act, speak, think, and write in ways that expanded their educational and cultural limits. Based upon the characters the students took on as their own and the situations in which they found themselves, they were able to speak in role, make critical decisions that guided a story, and respond to the dramatic situation in which they were involved through writing or oral communication.

The forty lesson plans were compiled into a handbook called *The Magic Circle of Drama* (Educational Arts Team 2008). The lessons were divided into nine units: four developed for the fourth grade and five for fifth-grade classrooms. The lesson plans were designed to focus on three areas of the curriculum—language arts, social studies, and performing arts—and address the guidelines outlined by the State of New Jersey Core Curriculum Content Standards. Teachers could expand, pare down, and mold these lesson plans to meet the specific needs of their own schools and the particular demands of their own classroom. Moreover, the units were not necessarily intended to be followed in a specific order but as a springboard to learning and an invitation to the imagination: They were not a rigid set of rules and regulations to be adhered to regardless of the context or student response.

Five of the nine units in the handbook deal with historical topics: the Colonial American Experience, Native American Culture, Ancient Egypt, Ancient Greece, and Ancient Rome. These units provided opportunities for engaging the students in the examination of complex issues and themes. The lessons were structured to generate multiple perspectives and provide opportunities for critical thinking around a pivotal historical moment. To accomplish this, teachers needed to play a key role in the drama, include information from that time period, and create the necessary tension to sustain and guide the drama.

In the unit, the Colonial Experience, for example, the teacher played the part of an indentured servant aboard the Mayflower on its journey to the New World. Students in role as passengers aboard the ship were asked to help this servant take care of a newly born baby. As the relationship developed between the teacher (the servant) and the students (the passengers), students learned that they had to decide whether or not to join a mutiny that was beginning to form. In another lesson from this same unit, the students were put in role as members of the Lenni Lenape, the Native American tribe indigenous to the New Jersey area in which the project took place. The students learned that by 1776 the Lenape had already been pushed off their ancestral lands in New Jersey to the Ohio Valley. The tribe faced with three options: whether to join the American revolutionaries fighting for independence from England, join the loyalist faction who wished to remain subjects of the Crown, or find a way to stay out of the conflict.

Four of the units centered on language arts topics taken from the school curriculum: inventing stories using mime and storytelling, exploring a storybook using role drama, developing characters by creating tall tales, and extending a fairytale using process drama. The language arts lessons helped the students to listen to others more attentively, write and edit original ideas, and gain confidence in public speaking. In the unit with mime and storytelling, wordplay and sentence construction led to story making and script writing, which culminated in an improvised puppet presentation. In the unit based on a picture book, the students took on the roles of family members who were planning a reunion and were suddenly called upon to assist the oldest member of the family save her ancestral home in the mountains.

### *Outcomes*

The outcome variables in the study fall into three major categories: academic, prosocial and procognitive, and attitudes toward the arts.

*Measures of academic performance.* Language arts performance is a dichotomous variable based on whether students passed the state assessment (New Jersey Assessment of Skills and Knowledge [NJASK]) in language arts administered in 2007. This variable is coded 0 (failed) and 1 (passed). Social studies performance is a binomial variable with values of 0 (less than B) and 1 (B or higher) for the fourth marking-period grades.

*Measures of prosocial and procognitive.* Procognitive development is an index composed of five indicators: turning in homework on time, completing homework in a satisfactory manner, volunteering for extra credit, staying on task academically, and being generally attentive in class. The index measures the degree to which students engage in behaviors that facilitate their learning. At the end of the academic year, teachers in both the treatment and control groups rated the degree to which an individual student made progress in each area. The ratings were based on a scale that had seven points; 7 represented significant progress and 1 represented significant decline. Four variables were used to create the index of prosocial development: behavior in class, interactions with fellow students, arriving to class on time, and attendance. The rating procedures for this index are similar to those used for the procognitive index. The reliability estimates for both indices are .93 and .87, respectively.

*Attitudes toward the arts.* Student attitudes toward the arts were measured by a twenty-five-item self-administered questionnaire. The items tap into intensity of students' attitudes

on a Likert scale, with scale values of 1 to 5, and include such statements such as, "I believe I can show what I know through the arts."

### *Sample Size and Statistical Analysis*

Statistical power for the study was set at .80,  $p < .05$ ,  $d = .25$ , for the student population. The initial sample size was 1,149 students, with roughly half of the students in the treatment group. Independent  $t$ -test and chi-square analyses indicated that there were no significant differences between students in the control and treatment groups at the start of the project regarding prior achievement, socioeconomic status (SES), gender, special needs status, bilingual eligibility, and gifted and talented exposure. Because the project was a three-year project, we tried to maintain the integrity of the initial group assignments by asking schools to keep the treatment and control groups intact when students moved from the fourth to the fifth grade. However, this did not occur in all the schools, and there were crossovers between the groups. Regression analyses and analysis of variance (ANOVA) were used to determine whether there were any nonrandom factors distinguishing those who were in the crossover groups versus those who remained intact in either the treatment or the control schools in both years. No significant differences were found between the crossovers and those students who remained in their initially assigned groups. We did, however, discover that in two schools, the rate of movement in and out of the originally assigned groups was significantly greater than among the rest of the schools. Given this finding, the data analyses include a dummy-coded school variable with the reference group (coded 0) for the two schools noted above. Preliminary analysis of the data indicated that the school variable was insignificant in the regression models; hence, it was dropped from our final models.

To a certain extent, the crossover between membership in the treatment and control groups at the fifth grade allowed us to have a factorial design that measured variation in the *intensity* of the treatment insofar as we were able to create four groups of fifth graders for a variable labeled "membership": a) fifth-grade students who were in treatment classrooms in the fourth and fifth grades; b) fifth-grade students who were in control classrooms in the fourth and fifth grades; c) fifth-grade students who were in control classrooms in the fourth grade but were in treatment classrooms in the fifth grade; and d) fifth-grade students who were in treatment classrooms in the fourth grade but were in control classrooms in the fifth grade.

To assess the effects of participation in the arts integration project, several analytical strategies were adopted. These analyses were carried out in three stages. During the first stage, we fitted logistic regression models to language arts performance on NJASK and social studies grades, with treatment status, SES, and gender functioning as covariates. These models were estimated for the entire sample across both grade levels. Multiple regression models were further used to predict prosocial and procognitive growth with the same predictors as those used in the logistic regression included in the multiple regression equation. Analysis of covariance (ANCOVA) was used to test the effects of participation in the project on attitudes toward the arts. In the ANCOVA model, baseline attitudes were the covariate and treatment status and gender the two main effects.

During the second stage of analysis, the above models were fitted separately for each grade level. This strategy was particularly meaningful for the fifth-grade data, as we were able to test the efficacy of our proposition that intensity of exposure to the arts integration project was likely to influence outcome. The means and standard deviations for all variables are reported in Table 1.

**Table 1**  
Means and standard deviations for variables in the study

Variable	Mean	Standard deviation
Language Arts Scale scores	205.80	25.54
Procognitive development	33.69	9.80
Prosocial development	19.14	5.14
Students' beliefs about the arts (Baseline)	7.78	1.85
Students' beliefs about the arts (Posttest)	7.48	2.05

## Results

### *Stage 1: Effects of Arts Integration on Student Outcomes: All Grade Levels Combined*

Table 2 reports results from the two logistic regression models in which treatment status is the main predictor of interest and gender and SES serve as controls. Turning first to performance in language arts on the state assessment NJASK, participation in the arts integration project ( $\text{Exp}(B) = 1.416$ ) had a significant impact on students' passing the state assessment, even after controlling for the effects of SES and gender, both of which were also found to be significant. The odds of passing the state assessment were increased by a factor of 1.416 in favor of students who were in the arts-integrated classrooms as opposed to those who were in control classes. In other words, the odds that a student in an arts-integrated classroom was proficient in language arts increased by 42 percent when we control for a student's gender and socioeconomic background. SES and gender as stated also predict passing the state assessment: Higher-SES students are more likely to pass the language arts test than lower-SES students ( $\text{Exp}(B) = 0.710$ ), and girls are more likely to be successful than boys ( $\text{Exp}(B) = 1.365$ ). All three predictors were also found to be significant in the model containing social studies grades as the dependent variable. However,

**Table 2**  
Logistic regression results for variables predicting language arts and social studies performance (all students)

Models	Exp(B)	Standard error	95% CI	
			Lower	Upper
Language arts performance ( $N = 979$ )				
Treatment status	1.416*	.143	1.070	1.873
Gender	1.365*	.143	1.032	1.803
Socioeconomic status	0.710*	.159	0.520	0.969
Social studies final marking period grade ( $N = 594$ )				
Treatment status	0.691*	.183	0.482	0.989
Gender	2.242*	.183	1.566	3.210
Socioeconomic status	0.549*	.202	0.369	0.815

\* $p < .05$ , based on Wald Test.

**Table 3**  
Summary of multiple regression analyses for variables predicting procognitive and prosocial development (all students)

Model	Beta	R square
Procognitive development ( $N = 803$ )		
Treatment status	0.06*	.018
Gender	3.238*	
Socioeconomic status	-0.972	.010
Prosocial development ( $N = 792$ )		
Treatment status	0.031	
Gender	0.087*	
Socioeconomic status	-0.038	

\* $p < .05$ .

in this model, students in the control group were more likely to receive a final marking period grade of B than students in the treatment group ( $\text{Exp}(B) = 0.691$ ).

Findings from the multiple regression analyses presented in Table 3, indicate that participation in the arts intervention project significantly predicted growth in the procognitive domain ( $B = .06$ ), although the effect is rather negligible. Students in the arts integration project were likely to be rated by their classroom teachers as making greater strides in their procognitive growth than students in the control group. Gender remains a consistent predictor in both models, with girls being rated by their teachers as showing more progress in both domains than boys. No significant impact was observed in the prosocial domain for treatment status and SES.

Students' belief about the arts, when subjected to a factorial ANOVA with prior attitudes serving as a covariate and gender, treatment, and the interaction between the two as major effects, were found to be significantly influenced by all four effects. After controlling for the covariate, which was statistically significant ( $F = 150.692$ ,  $df = 1/650$ ,  $p < .000$ ), treatment status ( $F = 3.916$ ,  $df = 1/650$ ,  $p < .048$ ), gender ( $F = 8.537$ ,  $df = 1/650$ ,  $p < .004$ ), and the interaction between treatment status and gender ( $F = 3.867$ ,  $df = 1/650$ ,  $p < .05$ ) were found to be significant. Students in the arts-integrated classrooms ( $M = 7.651$ , Std. Error = .099) had more positive beliefs about the arts than students in the control classrooms ( $M = 7.307$ , Std. Error = .100). In addition, girls were more inclined to hold favorable beliefs about the arts ( $M = 7.716$ , Std. Error = .098) than boys were ( $M = 7.307$ , Std. Error = .100). The significant ordinal interaction between the two main effects of treatment status and gender suggested that irrespective of treatment status, females tended to have more positive beliefs about the arts than males.

### *Stage 2: Effects of Arts Integration on Student Outcomes: Grade-Level Analysis*

*Grade 4.* The second set of analyses fitted each of the models discussed above for Grades 4 and 5 separately. Results from these analyses are instructive in helping us to understand if patterns of effects remain consistent across grade levels. It is clear from Table 4, that the impact of the arts intervention program was much stronger in Grade 4 when compared with the total sample. The odds ratio for this grade level was  $\text{Exp}(B) = 1.998$ , signifying that fourth graders in the arts integration project were almost



**Table 4**  
Logistic regression results for variables predicting language arts and social studies performance (Grade 4)

Models	Exp(B)	Standard error	95% CI	
			Lower	Upper
Language arts performance ( $N = 447$ )				
Treatment status	1.998*	.201	1.347	2.964
Gender	1.422	.200	0.961	2.104
Socioeconomic status	0.870	.220	0.565	1.339
Social studies performance ( $N = 256$ )				
Treatment status	1.418	.280	0.819	2.455
Gender	2.497*	.284	1.430	4.361
Socioeconomic status	0.810	.302	0.449	1.464

\* $p < .05$ , based on Wald Test.

twice as likely to be successful on the state assessment in language arts than students in the control group. Indeed, the findings suggest that fourth graders in a drama-based integrated language arts classroom are likely to increase their chance of passing the state assessment in language arts by almost 100 percent. Contrary to what was detected for the entire sample, neither gender nor SES was found to be significant predictors. With respect to social studies, the findings for fourth graders departed from those for the combined grade levels (Stage 1 above). Whether a student was in an arts-integrated classroom did not affect how well they performed in social studies.

Neither regression equation for the prosocial or procognitive domains was found to be statistically significant. Moreover, when we ran the ANCOVA analysis for beliefs, the effect of treatment status (treatment group versus control group) was not found to be statistically significant.

*Grade 5. Intensity of exposure* to the arts intervention program was found to be significantly associated with the outcome measures as evidenced by the results from the analysis of the fifth-grade data. The membership variable constructed for students in the fifth grade had four mutually exclusive levels that measured how long a student was exposed to the arts intervention and at what trajectory. The four levels were: a) students in the arts intervention as both fourth and fifth graders (two years of involvement); b) students who were never involved in the project (two years of nonexposure); c) students involved for one year as fourth graders but not as fifth graders (one year exposure at an earlier grade level); and d) students involved for one year as fifth graders but not when they were in the fourth grade (one year exposure at a later grade level).

Table 5 presents the cross-tabulation between membership and performance in language arts and social studies, while Table 6 reports the likelihood (odds ratio) for both sets of outcomes. In Table 6, the parameter coding employed by Statistical Package for the Social Sciences (SPSS) treats as the reference group that subgroup of students who were in the intervention as fourth graders but not as fifth graders. If the odds ratio is greater than 1, this signifies results that are in favor of this subset of students when compared with each of the other subgroups. We begin the analysis by first discussing the cross-tabulation data reported in Table 5 for both content areas.

**Table 5**  
Cross-tabulation results of membership by performance in language arts and social studies (Grade 5)

Subject area	Group 1 (treatment for two years)	Group 2 (control for two years)	Group 3 (control for the first time in the fifth grade)	Group 4 (treatment for the first time in the fifth grade)
Language arts				
Pass	90.4%	70.8%	91.3%	65.5%
Fail	9.6%	29.2%	8.7%	34.5%
Total	114	89	103	116
Social studies				
B or higher	70.5%	63.2%	89.9%	53.5%
Less than B	29.5%	36.8%	10.1%	46.5%
Total	78	57	69	86

**Table 6**  
Logistic regression results for variables predicting language arts and social studies performance (Fifth-grade students)

Models	Exp(B)	Standard error	95% CI	
			Lower	Upper
Language arts performance ( <i>N</i> = 421)				
Membership				
Group 1	1.231	.308	0.673	2.252
Group 2	5.061*	.378	2.415	10.607
Group 4	5.249*	.405	2.375	11.603
Gender	0.824	.257	0.498	1.365
Socioeconomic status	0.519*	.300	0.288	0.936
Social studies performance ( <i>N</i> = 290)				
Membership				
Group 1	1.481	.361	0.730	3.006
Group 2	1.970*	.339	2.416	10.607
Group 4	6.806*	.462	2.376	11.603
Gender	2.273*	.276	0.498	1.365
Socioeconomic status	0.546	.311	0.288	0.936

\**p* < .05, based on Wald Test.

Success rates on the state assessment in language arts were highest for the two subgroups of students who were exposed to the arts program as fourth graders. For students in Groups 1 (treatment both years) and 3 (the reference group, treatment in fourth-grade only), the passing rate on NJASK was slightly more than 90 percent as compared with students in Group 2 (control group for both years) at 70.8 percent and in Group 4 (treatment

in fifth-grade only) at 65.5 percent. Thus, as can be seen from the results of the logistic regression, the odds of passing NJASK were significantly different between the students in Group 3 (the reference group) and students in Groups 2 (control students for two years) and 4 (exposed to the arts intervention for the first time as fifth graders). Similarly, more fifth-grade students who participated in the arts integration project as fourth graders were likely to receive a final grade of B or higher in social studies than fifth-grade students who never participated or who were in the intervention for only a year.

The odds ratio associated with membership status indicates that there are significant differences between the categories in predicting academic success when the effects of gender and socioeconomic status are controlled (see Table 6). Specifically, when compared to students who were never part of the treatment, control fifth graders who were in the project in the fourth grade increased their chances of passing the state assessment in language arts by a factor of 5.061 over the former group of pupils (never exposed to the arts intervention project) and by 5.249 over fifth graders whose first exposure to the arts integration project occurred in the fifth grade. The odds increase for social studies when the comparison is between students in the intervention for the first time and students the reference group ( $\text{Exp}(B) = 6.806$ ), and the odds decrease appreciably but nevertheless remain significant for students who were never in the program ( $\text{Exp}(B) = 1.970$ ). These findings suggest that exposure to the arts in fourth grade was a determining influence on how well students performed academically in the fifth grade, irrespective of whether or not that exposure was sustained for these students as fifth graders.

ANOVA testing revealed that there were also significant differences in the procognitive development of fifth graders ( $F = 4.067$ ,  $df = 3/336$ ,  $p < .007$ ). Tukey post-hoc testing results found that the procognitive growth of students who were in the treatment for two consecutive years ( $M = 27.455$ , Std. Error = .561) was significantly higher than the growth for students who were in the control group for two years ( $M = 24.47$ , Std. Error = .88) and for students who were in the treatment group for the first time as fifth graders ( $M = 24.56$ , Std. Error = .693). There was no evidence of significant differences in the prosocial domain among the groups. Membership status was also found to significantly impact students' beliefs about their ability to demonstrate their learning through the arts after controlling for their prior beliefs ( $F = 29.299$ ,  $df = 3/283$ ,  $p < .001$ ). Students who were never exposed to the project were the most skeptical of all in their beliefs that the arts could help them with their learning.

## Discussion and Conclusion

In this research, we sought to understand if the integration of the arts into the teaching of social studies and language arts would impact the cognitive growth of pupils. Our goal was influenced by both heuristic and theoretical concerns. Heuristically, we were interested in determining if there existed tangible evidence that would substantiate the arguments in support of arts integration. We further wanted to identify variables that other scholars may find useful in their "grounding" of a conceptual model that links the arts and student learning.

Accountability pressures on school districts and teachers are currently reflected in a strong focus on increasing standardized testing. These pressures have inarguably led to a myopic focus on what are taken to be the core curriculum subjects, to the exclusion of other equally important curriculum areas such as the arts. Clearly, however, the uncritical assumption that student learning in the "core" subjects can only be facilitated by direct instruction of these subjects is not supported by the results presented in this article. The findings of this research indicate that in contrast to direct instruction, integration of the

arts into social studies and language arts produces learning outcomes that are superior to those yielded by the former pedagogical approach. The findings were supportive of the study propositions outlined in the earlier part of this article, with these propositions either being fully or partially confirmed by the empirical evidence. In spite of the long tradition of research within the sociology of education field that has shown how difficult it is to obviate social class differences in school settings, our study demonstrated the consistent finding that exposure to the arts is a more powerful predictor of student learning than socioeconomic background.

Although the data at hand do not allow us to untangle with any degree of precision the mechanisms through which the arts infusion project produced the results that it did, two factors appeared salient. First, exposure to a quality intervention at an earlier trajectory of a student's history is likely to create some sustainability in that student's learning in later years. Second, the arts may contribute to the development and refinement of students' "executive functioning." Executive functioning is defined as a constellation of mental processes that are goal directed and that enable individuals to connect both present and past experiences (Anderson et al. 2001; Meltzer 2007). Students with poor executive functions have low motivation levels, tend to be disorganized, are off task, and have problems recalling information (Meltzer). In this research, we found that students' procognitive growth was a significant predictor of learning in social studies. These measures, as intimated earlier, included completing homework on time, completing homework in a satisfactory manner, staying on task and being attentive in class, and volunteering for extra credit.

Our other work on this project, which entails classroom observation of teachers delivering an arts-integrated lesson, supports our inference regarding the role of the arts in promoting executive functioning among students. We found the learning behaviors of students in these classrooms to be more focused, with greater elements of risk taking and ownership. In addition, the embedded functional learning tasks associated with the arts strategies themselves were reported by the action research teachers in our study to be highly transferable and transportable to other areas of student learning (Elder 2008).

The present findings are highly suggestive of the need for further exploration of how the arts support the development of executive functioning in students and how arts education may be connected to new theoretical postulations in language arts skills development, such as transmediation and multimodal theories. The results also provide confirmatory evidence that the policy assumptions undergirding the U.S. Department of Education AEMDD program are indeed quite sound. Arts integration does provide a viable pedagogical approach for strengthening student learning in the core academic areas.

## References

- Anderson, V., P. Anderson, E. Northam, R. Jacob, and C. Catroppa. 2001. Development of executive functions through late childhood and adolescence in an Australian sample. *Developmental Neuropsychology* 20 (1): 385–406.
- Arts Education Partnership. 2004. The arts and education: New opportunities for research. <http://www.stolaf.edu/depts/cis/wp/horsager/catterall.newopportunities.pdf>.
- Burnaford, G., A. Aprill, and C. Weiss, eds. 2001. *Renaissance in the classroom: Arts integration and meaningful learning*. Mahwah, NJ: Earlbaum.
- Burton, J., R. Horowitz, and H. Abeles. 1999. Learning in and through the arts: Curriculum implications. In *Champions of change: The impact of the arts on learning*, ed. E. B. Fiske, 35–46. Washington, DC: The Arts Education Partnership and the President's Committee on the Arts and the Humanities.

- Caterall, J. S., R. Chapleau, and J. Iwanaga. 1999. Involvement in the arts and human development: General involvement and intensive involvement in music and theater arts. In *Champions of change: The impact of the arts on learning*, ed. E. B. Fiske, 1–18. Washington, DC: Arts Education Partnership.
- Chapman, L. 2004. No child left behind in art? *Arts Education Policy Review* 106 (2): 3–17.
- Corbett, D., B. Wilson, and D. Morse. 2006. The arts are an 'R' too: Mississippi Arts Commission. <http://www.mswholeschools.org/downloads/WSIevalFinal2.pdf>.
- Deasy, R. J. 2002. *Critical links: Learning in the arts and student academic and social development*. Washington, DC: Arts Education Partnership.
- Educational Arts Team. 2008. *The magic circle of drama*. Jersey City, NJ: Author.
- Eisner, E. W. 1998. Does experience in the arts boost academic achievement? *Art Education Policy Review* 100: 32–38.
- Eisner, E. W. 2002. *The arts and the creation of the mind*. New Haven, CT: Yale University Press.
- Elder, J. 2008. Arts integration and teacher practices: Understanding the effects of arts integration through action research. PhD diss., Seton Hall Univ.
- Field, R. 2006. John Dewey (1859–1952). *The Internet Encyclopedia of Philosophy*. <http://www.iep.utm.edu/d/dewey.htm>.
- Fisher, D., and N. McDonald. 2004. Stormy weather: Leading purposeful curriculum integration with and through the arts. *Teaching Artists Journal* 2: 240–48.
- Gardner, H. 1999. *Intelligence reframed: Multiple intelligences for the 21st century*. New York: Basic Books.
- Gee, C. B. 2003. Uncritical pronouncements build critical links for federal arts bureaucracy. *Arts Education Policy Review* 104: 17–19.
- Hetland, L., and E. Winner. 2004. Cognitive transfer from arts education to nonart outcomes: Research evidence and policy implications. In *Handbook of research and policy in art education*, ed. E. W. Eisner and M. D. Day. Reston, VA: National Art Education Association.
- Ingram, D., and E. Riedel. 2003. *Arts for academic achievement: What does arts integration do for students?* Minneapolis, MN: Center for Applied Research and Educational Improvement, College of Education and Human Development, University of Minnesota.
- Kress, G. 2003. *Literacy in the new media age*. London: Routledge.
- Kress, G., and T. van Leeuwen. 1996. *Reading images: Grammar of visual design*. London: Routledge.
- Kress, G., and T. van Leeuwen. 2001. *Multimodal discourse: The modes and media of contemporary communication*. London: Arnold.
- Mayer, R. E., and R. Moreno. 2003. Nine ways to reduce cognitive load in multimedia learning. *Educational Psychologist* 38: 43–52.
- Meltzer, L., ed. 2007. *Executive function in education: From theory to practice*. New York: Guilford Press.
- Morrell, E. 2002. Toward a critical pedagogy of popular culture: Literacy development among urban youth. *Journal of Adolescent and Adult Literacy* 46 (1): 72–77.
- Newmann, F. M. 2000. Authentic intellectual work: What and why. *Research / Practice* 8 (1). <http://www.education.umn.edu/CAREi/Reports/Rpractice/Fall2000>
- Rabkin, N., and R. Redmond. 2006. The arts make a difference. *Educational Leadership* 63 (5): 60–64.
- Siegel, M. 1995. More than words: The generative power of transmediation for learning. *Canadian Journal of Education* 20 (4): 455–75.
- Uptis, R., and K. Smithrim. 2003. Learning through the arts: National assessment final report. Toronto, ON, Canada: The Royal Conservatory of Music.
- Winner, E., and M. Cooper. 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.