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Arts in Education: The Impact of the Arts Integration Program and Lessons Learned

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**Arts in Education:**  
**The Impact of the *Arts Integration* Program and Lessons Learned**

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## Abstract

*Erie Arts & Culture (formerly ArtsErie), in partnership with the Union City Area School District, Crawford Central School District, Penncrest School District and Edinboro University in Pennsylvania received Arts in Education Model Development and Dissemination Grant from the U.S. Department of Education in 2010. This grant provided the opportunity to design and implement **Arts Integration: From Vision to Implementation**, a four-year project that integrated dance, music, visual arts, and drama into existing curriculum. **Arts Integration** provided professional development for classroom teachers and teaching artists and established avenues for their collaboration to design and implement arts-integrated classroom-based learning through an artist-in-residence experience. The purpose of the project was to improve lesson planning and the quality of teaching; student engagement in the learning process and their learning habits associated with the arts; and ultimately, students' achievement in math and reading. This project reached approximately 900 students annually in participating schools. Student data presented were collected only for students in participating and control classrooms, whose teachers agreed to be included in the evaluation. Included participating, or treatment, classrooms were selected from three schools that experienced arts-integrated learning. Included control classrooms were selected from two schools of similar demographic composition, where the project was not implemented. The data were collected from 54 treatment and 50 control classrooms. The total number of students in treatment classrooms was 969, and, in control classrooms, 962 students. The total of 35 participating classroom teachers, 32 control classroom teachers, and 16 teaching artists participated in the evaluation part of the project. **Arts Integration** produced a number of positive outcomes for the participating students, as well as teachers and teaching artists, who participated in the program. This evaluation documented a number of positive outcomes related to quality of teaching, student engagement and learning habits. At the same time, because the program was time-limited and the level of exposure for individual students was not long-term, the impact of arts-integration on student achievement in math and reading could not be definitively determined. This article provides a number of recommendations that would enhance the design and implementation of similar arts-integration programs, as well as offers lessons learned with respect to its evaluation.*

## Background and Project Purpose

A growing body of research presents compelling evidence that connects student learning in the arts to a wide spectrum of academic and social benefits, including helping students to master other subjects, such as reading, math or social studies (Burnaford, 2007; Gazzaniga, 2008; Goff & Ludwig, 2013; Luftig, 2000; Ruppert, 2006). Further, research in the area of arts in education has indicated that students who are engaged in arts-infused instruction exhibit signs of improved cognition and self-discipline by strengthening their ability to focus, which has translated into success in various academic areas, including mathematics and language arts, as well as students' creative and critical thinking abilities (Gazzaniga, 2008). Other studies document the mental discipline, social competencies, personal dispositions, and mastery of academic subjects inherent in arts learning (Stevenson & Deasy, 2005; Hyatt, 2010; Fiske, 1999; Rich, 2005; Horowitz, 2005). The research by Horowitz (2005) also points to the importance of the connection between teacher learning and student learning. As teachers learn to apply new skills, in the classroom, particularly in their arts integration ability, they will have greater buy-in with programs and enhanced perceptions of students' abilities. Hence, the teachers' learning in arts integration is a prerequisite to student learning and development.

Studies conducted by James Catterall and his contemporaries for the *Champions of Change* report (Fiske, 1999) have identified correlations between the study of the arts and academic achievement. Catterall found that high arts participation makes a more significant difference to students from low-income backgrounds than for high-income students. He also determined that sustained involvement in particular art forms – music and theater – are highly correlated with success in mathematics and reading. Catterall's work speaks to the capacity of the arts to encourage active learning in students who are disadvantaged and otherwise not reached by the school system (Fiske, 1999). Ingram and Riedel (2003) substantiated the relationship between arts integration and student learning in reading and math in the elementary schools. Their assessment of the Arts for Academic Achievement (AAA) program further showed that this relationship is more powerful for disadvantaged students.

In compiling research findings for the *Champion of Change* report, Edward Fiske observed that all of the participating researchers independently concluded that the arts help to engage students who are not otherwise being reached. Students who are disengaged from the learning environment are at high risk of failure. Additionally, the arts provided a reason, and sometimes the only reason, for being engaged with school or other organizations. Fiske goes on to say that the evidence supports that the arts strongly connect students to themselves and to the people around them, helping to transform the learning environment into places of discovery and achievement.

**Arts Integration** was a test of the hypothesis that the arts, when integrated into the curriculum, encourage active learning in students and enhance achievement. **Arts Integration** was a four-year project from 2010-2014; it integrated dance, music, visual arts and drama into the existing elementary school curriculum to enhance both the quality of teaching in the classroom, as well as student academic achievement and engagement in the learning process (Meyer, et al., 2013). In this article we present an overview of this project and the results of the effort to improve the quality of instruction and outcomes for the students.

### **Arts Integration Project: From Vision to Implementation**

**Arts Integration** was a partnership between ArtsErie (now Erie Arts & Culture), Union City Elementary School, Second District Elementary School (2010/2011 school year only), First District Elementary School (2011/2012 school year through project completion in 2013/2014), Cambridge Springs Elementary School and Edinboro University in Pennsylvania. The schools were selected for participation in **Arts Integration**, in part, because they were in rural areas and served a significant number of students from low-income families. The project was funded in full by the U.S. Department of Education Arts in Education Model Development and Dissemination (AEMDD) grant program<sup>1</sup> (<http://www2.ed.gov/programs/artsedmodel/index.html>). The AEMDD program supports the enhancement, expansion, documentation, evaluation, and dissemination of innovative, cohesive models that demonstrate effectiveness in: integrating into and strengthening arts in the core elementary and middle school curricula; strengthening arts instruction in those grades; and improving students' academic

performance, including their skills in creating, performing, and responding to the arts. Detailed information about the *Arts Integration* program can be found on this website (<https://www.erieartsandculture.org>). In brief, the following describes the basic elements of the program.

### **Professional Development**

*Arts Integration* provided professional development for classroom teachers and teaching artists and established avenues for their collaboration to design and implement classroom-based learning that integrated art (via an artist-in-residence experience) to enhance the learning of a core subject, specifically math and reading. Those participating in *Arts Integration* were required to take this coursework either prior to or during the semester in which they had an artist-in-residence experience. A total of 35 teachers and 16 teaching artists participated in the evaluation part of the project and attended some or all professional development opportunities offered.

The professional development offerings included two 3-credit graduate courses offered through Edinboro University. One, *Language, Movement and Music in the Elementary Classroom*, focused on creative combinations of language, movement and music in the primary classroom, and provided teachers with a variety of opportunities for active involvement in poetry writing, creative movement and dance, sound exploration, improvisation and melody writing. The other, *Art Workshop for Elementary Teachers*, explored constructivism, assessment, evaluation, arts infusion, standards-based lesson planning, inquiry, and documentation. The instructor created total integration of curriculum by employing pedagogical methods that extended into all other subject areas.

Other professional development opportunities included three-day professional development conferences (Learning Labs) held in the early fall of each year. The Learning Labs addressed needs in the program and were a chance for the teachers to earn continuing education credits in Pennsylvania. On an as needed basis, other workshops and activities were offered to facilitate the implementation of the program, such as training in the use of technology in the classroom and to document activities and a trip to an arts-integrated elementary school in Charleston, S.C. to explore the school and visit the classrooms to see arts integration happening live.

The objectives of *Arts Integration's* professional development were to encourage ongoing cooperation between teaching artists and classroom teachers, improve the effectiveness of artist residencies, and strengthen the quality of arts-integrated instruction beyond the duration of the project.

### **Artist Residences**

While this project reached approximately 900 students annually in participating schools, the evaluation data were collected for 969 students, grades kindergarten through six, who participated in arts-integrated classroom-based learning through the implementation of the artist-in-residence program in each of the participating schools over the four years. The purpose of the project was to improve lesson planning and the quality of teaching; improve student engagement in the learning process and their learning habits associated with the arts; and ultimately improve the students' achievement in math and reading.

Each school partner in the *Arts Integration* program received two residencies each semester, or four per school year. The residencies were custom built around each school's needs, so times varied depending upon the availability of the artists, the school's schedules and the connections to their curriculum.

Each residency was funded to last up to 30 days, which included the artist's stipend, room and board, and round trip mileage. This budget allowed for 20 days in the classroom, plus five days of planning time with the teacher prior to the residency and five extra days for overlap, extensions, meetings and showcase events after the residency.

During each residency the artist worked with one to three core groups from the chosen grade(s). Core groups could be comprised of various grade levels, but were not to exceed 30 students. Every grade in the participating schools had the opportunity to receive a residency during the four years of *Arts Integration*. However, participation in the project was voluntary on the part of the classroom teachers.

The artist was required to spend a daily minimum of five hours in the school. Each artist could use these hours for working with her core groups, having small art experiences with other students,

planning time with their core teacher, eating lunch, preparing, or working on their art on site. At least one hour had to be spent with each core group. Although there was no requirement for a final showcase, demonstration or culminating event, the artist-in-residence and participating classroom teachers were strongly encouraged to have such an event and to extend the learning and residency into the community.

**Project Goals and Logic Model**

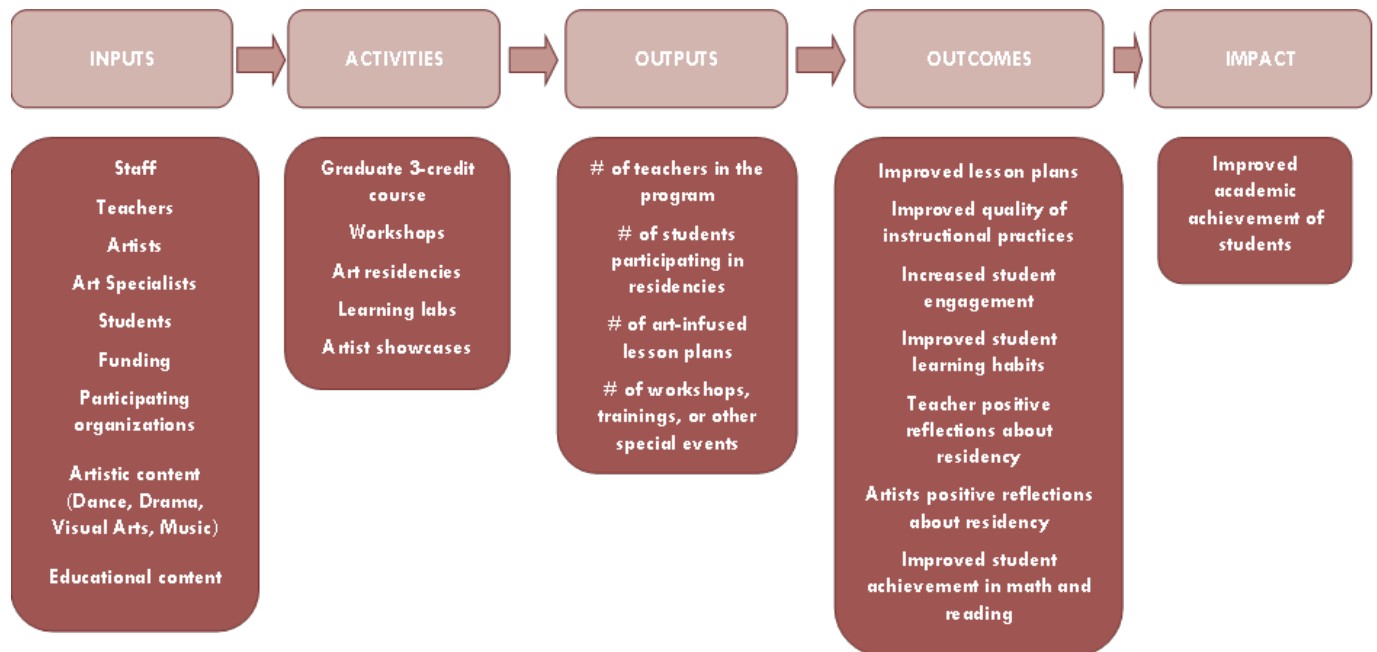
The overarching goals of the *Arts Integration* project were:

- 1) To improve the ability of teachers to implement a model of arts integration in their classroom instruction as a result of engaging in ongoing faculty development and participating in teaching artist residencies that are collaborative and employ the process of art-making in a constructivist approach to teaching and learning.
- 2) To improve student achievement in math and reading, engagement in the learning process, and learning habits associated with the arts as a result of participating in arts-integrated lessons within their classrooms.

The design and implementation of *Arts Integration* was based on a logic model that recognized the power of arts-integrated instructional methods and artist-teacher collaborations to improve the effectiveness of classroom instruction, as well as student engagement in the learning process and academic achievement.

In general, this logic model articulates the theory of change as it relates to the *Arts Integration* project (i.e., inputs and activities that were implemented to accomplish the specified goals) and the program results.

**Figure 1: *Arts Integration* Logic Model**



**Evaluation Design**

Evaluation was very important to *Arts Integration*, as participant feedback helped determine project successes and areas for improvement. The evaluation plan for *Arts Integration* was based on the logic model as shown in Figure 1. As designed, the evaluation used a mixed method approach, gathering both quantitative and qualitative data and data analytic techniques. Specifically, the data included measures of outcomes related to the quality of teaching, as well as the impact of instruction on student

achievement, engagement, and learning habits associated with the arts. In addition, both participating teachers and artists were asked to reflect on the residency experience and provide input regarding ways to improve the program.

Indicators of the quality of teaching included improved lesson plans and improved quality of instructional practices. Student achievement focused on the core subjects of math and reading, as indicated by report card grades and standardized test scores. Student engagement was measured via an instrument used to record, for a series of 5-minute observational intervals, the overall classroom behavior indicative of student engagement. Finally, student learning habits associated with the arts were measured through the use of a survey that teachers and teaching artists completed to provide a global assessment of the cognitive skills, social competencies, and personal development of the students in their classrooms (before and after the residency). The specific research questions and data collection measures are detailed below.

Because the data collected was specific to each residency in each classroom, and included both participating and non-participating classrooms for comparison purposes, the evaluation provided periodic assessment, by academic quarter, of the progress the program was making toward achieving intended outcomes. This real-time evaluation, therefore, provided an opportunity to make improvements in the program's implementation over time.

### **Research Questions and Data Collection Methods**

Teacher and teaching artist surveys, classroom observations, residency reflection forms and student grades and test scores were used to assess the impact and measure the success of *Arts Integration*, as described below. Copies of the research instruments can be found on the *Arts Integration* webpage: <https://www.erieartsandculture.org>.

The following details the evaluation design with respect to these questions: What will be evaluated? How will it be evaluated? Who will participate in the evaluation?

#### **I. WHAT: Did *Arts Integration* improve the quality of teaching?**

**HOW:** Trained observers used the Classroom Observation and Interview forms during three classroom observations with participating teachers. The first observation was conducted within two weeks before a residency began; the second observation was conducted at the end of the residency with a joint artist and teacher lesson being observed; and the third observation of the teacher was conducted 30-45 days after a residency was completed. In addition, one observation of a teacher/lesson was conducted with control classrooms assigned as a match to each participating classroom.

With respect to the quality of instruction, the observer awarded points if the teacher:

1. Involved all students by requesting and inviting equal participation.
2. Used active, experiential instructional approaches.
3. Created an emotionally safe learning environment where taking risks and asking mistakes is not in question.
4. Provided opportunities for students, artist, and teacher to collaborate and work together.
5. Demonstrated respect for all learners by encouraging individual expression, responsibility, and decision-making.
6. Connected the current lesson to students' previous learning experiences or to personal experiences.
7. Used multiple ways to convey the lesson, including but not limited to, questioning, illustration, demonstration, modeling.
8. Provided one-on-one instruction or attention as well as group instruction.

The scoring was based on a 4-point scale: 4=Frequently—66% of the time during the lesson; 3=Occasional—34%-65% of the time during the lesson; 2=Seldom—1%- 33% of the time during the lesson; and 1=Not at all—0% of the time during the lesson. Based on this scale, the observed lesson could have a maximum of 32 points and a minimum of eight points.

During each observation, the observer collected a lesson plan, if available, for the lesson that was observed. The quality of the lesson plan was assessed in multiple ways. First, observers recorded their agreement/disagreement (4=Strongly Agree; 3=Agree; 2=Disagree; and 1=Strongly Disagree) with the following statements indicative of the quality of the lesson plan:

1. Students were informed of the learning objectives of the lesson.
2. Meaningful connections were made between/among disciplines.
3. Activities were age- and grade-level appropriate.
4. In-depth learning was promoted, e.g., “Big Ideas” were addressed.
5. Examples from the arts and other disciplines were used.
6. Terminology was appropriate.
7. The artistic processes of creating, performing, and/or responding were incorporated.
8. Assessment was ongoing throughout the lesson, with appropriate feedback provided.
9. There was a final evaluation of student learning.
10. Students had an opportunity for reflection.

If a written lesson plan was provided, the observer used a Lesson Plan Assessment form, which included a Rubric for Planned Instruction and Lesson Plan checklist to assess the quality of the plan. The Rubric for Planned Instruction was used to assess, based on more detailed descriptive statements, if the plan was “advanced,” “proficient,” “basic,” or “below basic,” with respect to these objectives:

1. The lesson plan addressed academic standards in reading or math.
2. The lesson plan clearly addressed academic standards in the arts.
3. Essential questions/big ideas were evident.
4. The lesson plan was clearly written, learning objectives were clearly stated, and activities focused on the objectives.
5. The arts were effectively woven into instruction.
6. Opportunity for reflection was built into the instructional plan.
7. The instructional plan was grade-appropriate.
8. Lesson plan was assessment- driven. Rubric or other assessment tool was clear and concise.

The Lesson Plan checklist included the following elements, which were assessed as either a “yes” or “no”:

1. Lesson plan was provided.
2. Academic Standards in math or reading were addressed.
3. Academic Standards in the arts were addressed.
4. Essential questions/big ideas were evident.
5. Learning objectives were clearly stated.
6. Adaptations were given, where necessary.
7. Assessment was clear.
8. Arts were effectively woven into instruction.
9. Opportunity for reflection was evident in the plan.
10. Assessment was clear.

**WHO:** The teachers observed those who volunteered for the project, either as a participating classroom or control classroom. Each of these participating classroom teachers, as well as control classroom teachers, signed an *Arts Integration* evaluation consent form. Of the participating teachers who consented to participate in the evaluation, only two were selected to serve as “test” classrooms per residency. With respect to the teaching artists, since each artist may have worked with up to three classrooms during a residency, the artist could have been observed in more than one classroom. The total of 35 participating classroom teachers, 32 control classroom teachers, and 16 teaching artists participated in the project evaluation.

**II. WHAT:** Did *Arts Integration* improve student achievement in Math and Reading?

**HOW:** Student report card grades, as given by their classroom teacher, were collected for each student from control and participating schools. Report card grades were gathered for students in the quarter before a residency and in the quarter at the end of a residency. For some of the students, the



other measure of student achievement included a comparison of standardized test scores. The scores were from the Pennsylvania System of School Assessment (PSSA), which is an annual assessment in English Language Arts and Mathematics. The PSSAs are administered in commonwealth classrooms in Grades 3 through 8. Given this, for any of the students in Grades 3 and below, a comparison of standardized test scores for the year they participated in a residency to the prior year could not be made. The total number of students with PSSA scores for math for four years was 470 for participating school and 450 for control schools. The total number of students with PSSA scores for reading for four years was 469 for participating schools and 450 for control schools.

**WHO:** The administrative office of each partnering school district provided these data to the evaluators.

### **III. WHAT: Did *Arts Integration* improve student engagement?**

**HOW:** The Classroom Observation and Interview Form included a section with Student Engagement Indicators. Trained observers completed this section during the classroom observations that were conducted in “test” classrooms before, during, and after each residency, as well as in “control” classrooms. This portion of the observation used a time-line procedure to provide a general overview of how students were engaged during the lesson. Observers recorded, for each of the 11 five-minute intervals, if the engagement indicator was observed in a majority of the students. The indicators included:

1. The majority of students are actively listening or watching the teacher/ artist or other students by focusing attention and making eye contact with the presenter.
2. The majority of students are responding to teacher/artist prompts.
3. The majority of students are engaged in questioning, exploring, brainstorming, working or discussing the learning topic with the teacher/ artist, or each other.
4. The majority of students are engaged in activities that require decision-making or problem solving.
5. The majority of students are creating, performing, witnessing, and/or reflecting on arts experiences.
6. The majority of students’ body language is appropriate to the experience.

Once the observation was completed, the percentage of time each indicator was observed was calculated. For example, if an indicator was observed for 9 of the 11 5-minute intervals, that would equate to 82% of the time.

**WHO:** The teachers observed those who volunteered for the project evaluation, either as a participating classroom or control classroom. Each of these participating classroom teachers, as well as control classroom teachers, signed an *Arts Integration* evaluation consent form. Of the participating teachers who consented to participate in the evaluation, only two were selected to serve as “test” classrooms per residency. With respect to the teaching artists, since each artist may have worked with up to three classrooms during a residency, the artist could have been observed in more than one classroom. The total of 35 participating classroom teachers, 32 control classroom teachers, and 16 teaching artists participated in the project evaluation.

**WHAT: Did *Arts Integration* improve key learning habits associated with the arts?**

**HOW:** The Student Cognitive, Social and Personal Development Survey<sup>2</sup> (Horowitz, 2005) was completed by teachers in “test” classrooms prior to the residency and was completed by teachers and teaching artists at the end of the residency. The questions asked the classroom teacher/teaching artist to make a global assessment of the cognitive skills, social competencies, and personal development of the students in the classroom. The areas assessed included the abilities of the students with respect to: elaboration, expression of ideas or feelings, cooperative learning, new or better relationships with other students, self confidence, motivation, ownership of learning, and writing process.

**WHO:** Teachers and teaching artists who consented to participate in the evaluation and were selected as “test” classrooms completed this survey.

### **IV. WHAT: Were there ways in which *Arts Integration*, the project, could be improved?**

**HOW:** An Artist Attitude survey and a Teacher Attitude survey were used to collect feedback at the end of each residency. These surveys asked the teachers and artists about the following: collaboration between teachers and artists; teacher buy-in; comfort level and knowledge with performing, teaching, or discussing the arts; and seeing students in a new light or from a different perspective. In addition, the Qualitative Input from Program Implementers gathered open-ended responses to questions about the project's implementation several times during the four years from participating core teachers, the project director, project manager, art specialists, and evaluators.

**WHO:** All teachers and teaching artists who participated in a residency completed the attitude surveys. The set of project implementers completed the Qualitative Input from Program Implementers form.

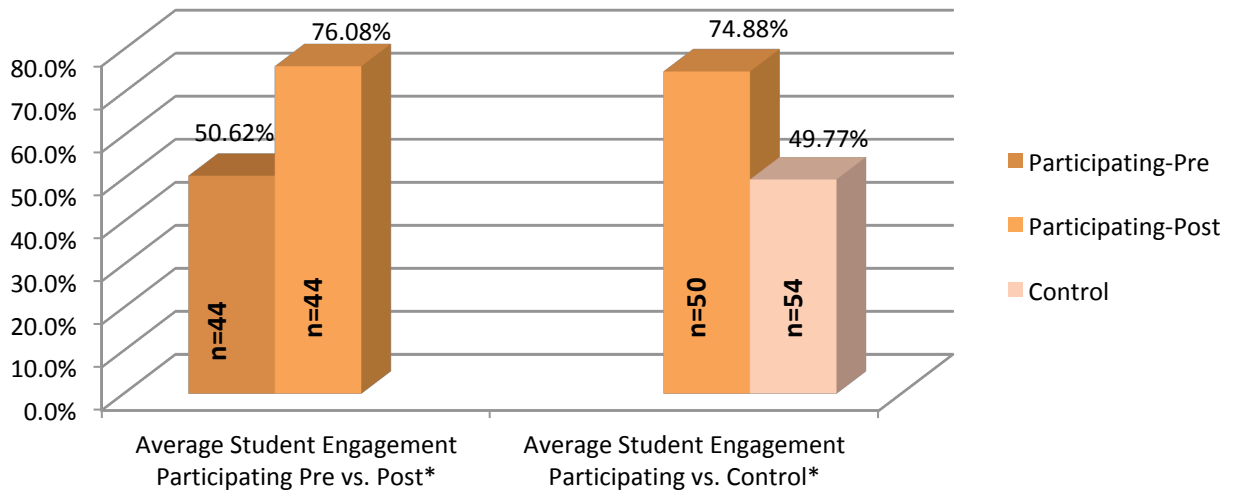
### Findings

The *Arts Integration* program was rigorously evaluated, comparing the outcomes for students both before and after their participation in an art-residency experience, as well as comparing participating students to a control group of students who did not have this experience. The student outcomes assessed included: engagement in the learning process, learning habits relevant to the 21<sup>st</sup> century learning skills, and student achievement in math and reading. Additionally, the outcomes for teachers and artists with respect to quality of instructional practices and lesson plans were assessed. The evaluation also incorporated an assessment of the project's implementation, to determine what worked and didn't work as *Arts Integration* evolved over the four years. The quantitative data was entered into an SPSS file for data analysis, and qualitative data was content analyzed to determine key themes and patterns to the responses.

#### Student Outcomes

**Student engagement.** As shown in Figure 2, student engagement during the classroom lesson increased significantly from 50.62% of the time before the art residency compared to 76.08% of the time at the end of the residency. Moreover, compared to the control classrooms, students in art-integrated classrooms were engaged 74.88% of the time, and control classrooms were engaged only 49.77% of the time, representing a statistically significant difference between the two.

**Figure 2:** Average Student Engagement in Participating and Control Classrooms



\*Significance at  $p \leq 0.001$

**Participating Pre vs. Post: Paired Samples T-Test** was performed (The paired sample t-test, sometimes called the dependent sample t-test, is a statistical procedure used to determine whether the mean difference between two sets of observations is zero. In a paired sample t-test, each subject or entity is measured twice, resulting in pairs of observations.)

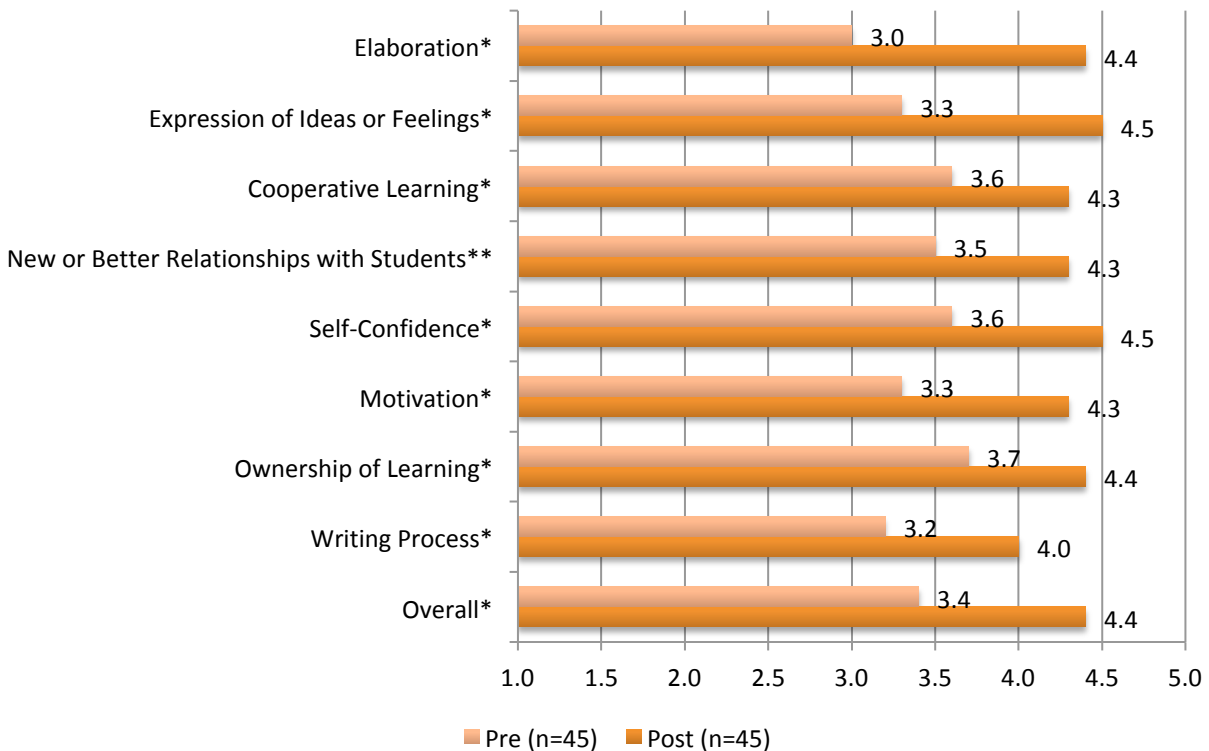
**Participating vs. Control: One-Way ANOVA Test** was performed (The one-way ANOVA test is a technique that can be used to compare means of two or more samples; it assumes: Independence of cases – this is an assumption of the model that simplifies the statistical analysis; Normality – the distributions of the residuals are normal; and Equality (or "homogeneity") of variances.

**Student learning habits.** Learning habits also improved for students in art-integrated classrooms. Figure 3 shows the various learning habits assessed by the teachers and teaching artists and the comparison from before to after a residency. The area with the greatest change from pre to post was “elaboration,” indicating that students showed greatest improvement with respect to:

- Coming up with amazing details in their work
- Focusing on making sure that they included interesting and clear details in their work
- Learning that their work was really theirs when they put in their own details
- Adding sensory details to their work (e.g., sight, sound, touch, smell, and taste)

Additional analysis of the data also revealed that these learning habits showed greater improvement in classrooms where the teacher had more than one art-residency, indicating that with more experience in art-integration, the outcomes for students are better. The implications of this finding highlight the need for sustained arts-integration by the classroom teacher and in multiple subject areas. If a teacher uses only the residency as an opportunity to integrate the arts into their lessons, then the power of the intervention is likely to be weak.

**Figure 3: Pre-Post Assessment of Participating Students Learning Habits**



\*Significance at  $p \leq 0.001$

\*\*Significance at  $p \leq 0.01$

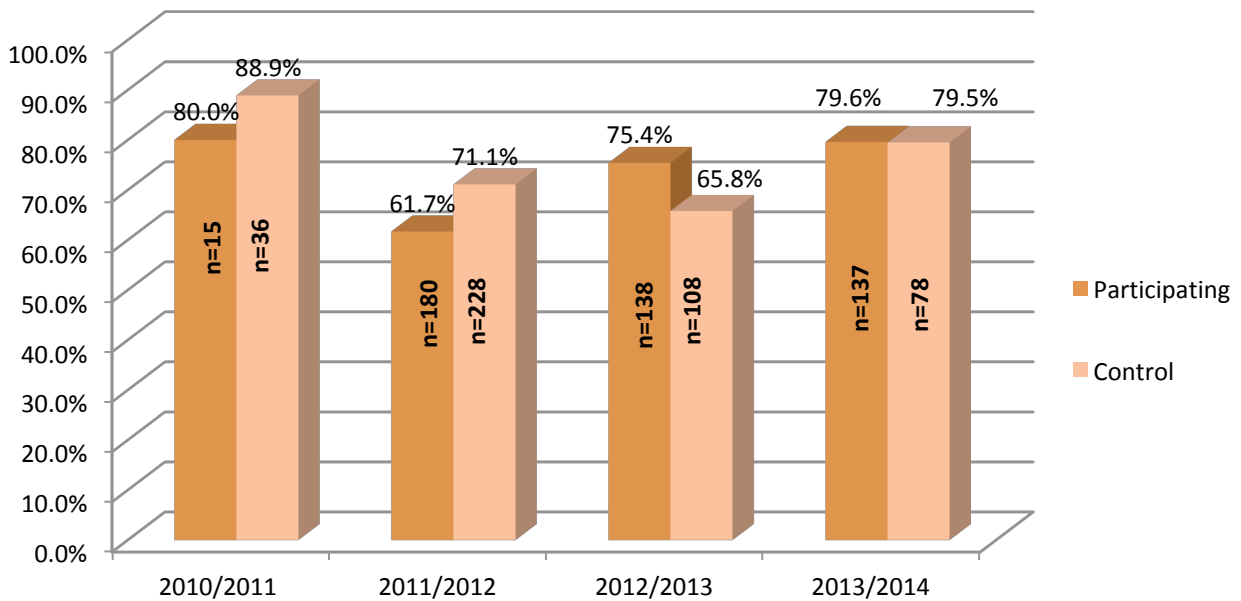
Paired-samples t-test was performed

Scores on a scale of 1 to 5 with 5 = strongly agree; 4 = somewhat agree; 3 = not sure; 2 = somewhat disagree; and 1 = strongly disagree.

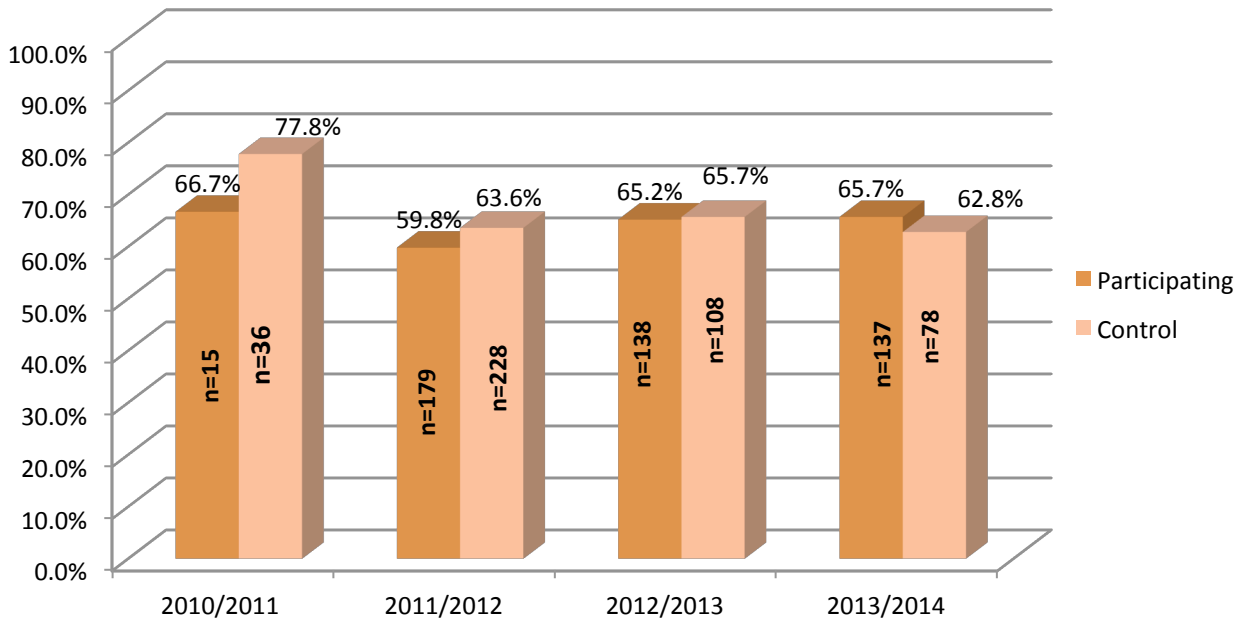
**Student achievement in math and reading.** The *students' achievement in math and reading*, as assessed both via standardized test scores<sup>3</sup> and report card grades, did not produce consistent results. Figures 4 and 5 provide a comparison of the percentage of participating and control students who are proficient in math and reading for each year of the program. There is no significant difference between the participating and control students with respect to standardized tests results in math and reading. Furthermore, there is no consistent pattern in these data, with some instances where control students may have higher levels of proficiency, and in other cases, the participating students have higher levels. Some of it could be attributed to, and possibly explained by, uneven sample sizes between number of participating and control students with PSSA scores. Future studies could be done to further examine relationship between arts-integration and its impact on academic achievement, as measured by standardized scores.

The target for this project was that 70% of the participating students would be proficient in math and reading, as measured by PSSA scores, after experiencing a residency. The analysis of the test score data also yielded varying results. For math, across the four years, this level of proficiency was not achieved in 2011/2012; for the other three years the proficiency levels ranged between 75.4 % and 80%, thereby exceeding the target. This was not the case with proficiency levels for reading. Across all four years, the targeted 70% was not achieved in any year, and the proficiency levels ranged between 59.8% and 66.7%.

**Figure 4: Percent of Students Proficient in Math as Measured by Standardized Test: Participating vs. Control**



**Figure 5: Percent of Students Proficient in Reading as Measured by Standardized Test:  
Participating vs. Control**



The report card grades for participating and control schools compared grades from before a student’s participation in a residency to after participation. As with the analysis of test scores, there is no consistent pattern to the changes in report card grades. Depending on the year, the participating students may have done better than the control students in either math or reading or vice-versa. Some of the differences between participating and control students are significant, while others are not. Given this mixed set of results, there is not a substantial body of evidence to conclude that participating in *Arts Integration* had a positive impact on the student’s academic achievement in math and reading, as indicated via report card grades. While this finding is inconclusive, it points to the need for further analysis of the instructional practices, e.g., if there are differences in achievement outcomes based on the differences in art integration lessons and what they were trying to achieve, the quality of the arts integration lesson, the integration of music, dance, visual arts or drama, etc. Moreover, additional analysis on how grades are given in the residency classrooms vs. the control classrooms might shed light on the achievement outcomes. It may also mean that the intervention is not over a long-enough time period to have the intended impact on achievement. The data from *Arts Integration* does not have that level of detail to complete these types of additional analysis, but these are worthwhile questions for further research.

### **Teacher and Artist Outcomes**

A number of instructional practices were identified as indicators of quality teaching. The comparison of these practices via observation by trained observers, prior to participation in *Arts Integration* program, at the end of the program and at the follow up, revealed a number of significant improvements over time. Table 1 shows these data comparisons across three time periods. From the pre to post time period, there was significant increase in the frequency in which the indicators of instructional quality were observed. The changes from post to follow up were mixed with no significant differences found, overall, indicating a leveling off with respect to the improvement of quality of instruction. This leveling off may have occurred, because overtime, without the presence of an artist in residence, teachers (at least a percentage of them), may have reverted to some of their previous teaching habits and

maintained a only portion of what they learned to improve their instruction. The *Arts Integration* data does not address this issue, but it points to a need for further investigation.

**Table 1: Overall Means of Pre, Post and Follow Up Instructional Practices**

	n	Pre	Post	Follow Up
Involved all students by requesting and inviting equal participation	38	3.45**	3.84**	3.71
Used active, experiential instructional approaches	39	3.08*/**	3.87*	3.64**
Created an emotionally safe learning environment where taking risks and making mistakes is okay	39	3.49*	3.97*	3.82
Provided opportunities for students, artist, and/or teacher to collaborate and work together	39	2.51*/*	3.80*	3.49*
Demonstrated respect for all learners by encouraging individual expression, responsibility, and decision-making	39	3.44**/**	3.90**	3.95**
Connected the current lesson to students' previous learning experiences or to own personal experiences	39	2.67*/***	3.26*	3.21***
Used multiple ways to convey the lesson, including but not limited to questioning, illustration, demonstration, and modeling	39	3.00*/**	3.67*	3.59**
Provided one-on-one instruction or attention as well as group instruction	38	3.11*	3.66*	3.40
<b>Overall Average Instructional Practices</b>	<b>39</b>	<b>3.09*/*</b>	<b>3.75*</b>	<b>3.60*</b>

\*Significance at  $p \leq 0.001$

\*\*Significance at  $p \leq 0.01$

\*\*\*Significance at  $p \leq 0.05$

Repeated Measures Multi-Variate Test was performed

Scores on a scale of 1 to 4 with 4 = frequently during the lesson (66+% of the time); 3 = occasionally during the lesson (34%-65% of the time); 2 = seldom during the lesson (1%-33% of the time); 1 = not at all during the lesson (0% of the time).

In addition to these comparisons over time, the quality of teaching for the classrooms participating in the *Arts Integration* program was compared to the quality of teaching in the control classrooms. Table 2 shows this comparison. Overall, the control classrooms had a quality score of 3.11 compared to the participating classrooms with a score of 3.70, which was a significant difference. Based on these data, there is evidence that the professional development of the participating teachers and the collaboration between the classroom teacher and artist in residence had a positive impact on the quality of teaching.

**Table 2: Overall Means of Post Instructional Practices for Participating and Control Groups**

	Participating Post (n=50)	Control (n=54)
Involved all students by requesting and inviting equal participation	3.80***	3.46***
Used active, experiential instructional approaches	3.84*	2.94*
Created an emotionally safe learning environment where taking risks and making mistakes is OK.	3.92**	3.63**
Provided opportunities for students, artist, and/or teacher to collaborate and work together	3.74*	2.54*
Demonstrated respect for all learners by encouraging individual expression, responsibility, and decision-making	3.86*	3.46*
Connected the current lesson to students' previous learning experiences or to own personal experiences	3.22**	2.67**
Used multiple ways to convey the lesson, including, but not limited to, questioning, illustration, demonstration, and modeling	3.62*	3.02*
Provided one-on-one instruction or attention as well as group instruction	3.63*	3.13*
<b>Overall Average Instructional Practices</b>	<b>3.70*</b>	<b>3.11*</b>

\*Significance found at  $p \leq 0.001$ ;

\*\*Significance found at  $p \leq 0.01$ ;

\*\*\*Significance found at  $p \leq 0.05$ .

One-Way ANOVA Test was performed

Scores on a scale of 1 to 4 with 4 = frequently during the lesson (66+% of the time); 3 = occasionally during the lesson (34%-65% of the time); 2 = seldom during the lesson (1%-33% of the time); 1 = not at all during the lesson (0% of the time).

In addition to instructional practices, the assessment of the lesson plan was used as an indicator of the quality of teaching. The initial comparison of pre and post measures of the quality of the lesson plan showed significant improvements on all the individual indicators, as well as overall. Table 3 shows these comparisons, with an overall pre score of 2.63 compared to a post measure of 3.40, which was a statistically significant difference. A leveling off of the quality of the lesson plan occurred, as shown by the post to follow up comparison in Table 3, except for the significant decline of two items. Examples from the arts and other disciplines were used," and "the artistic processes of creating, performing, and/or responding were incorporated." However, this decline was not substantial enough to erase all the improvements in the delivery of the lesson plan over time (Table 3). As with the change in instructional practices over time (Table 1), this decline may be due to similar reasons, e.g., reverting to previous teaching habits when no artist in residence is co-teaching and/or teachers maintaining a only portion of what they learned to integrate into their lesson plans.

**Table 3: Overall Means of Pre, Post and Follow Up Implemented Lesson Plan Measures**

	n	Pre	Post	Follow Up
Students were informed of the learning objectives of the lesson	37	3.05**	3.51**	3.41
Meaningful connections were made between/among disciplines	31	2.29*/*	3.23*	3.03*
Activities were age- and grade-level appropriate	39	3.67**/**	3.97*	3.92**
In-depth learning was promoted, e.g., “Big Ideas” were addressed	37	2.55*/*	3.16*	3.27*
Examples from the arts and other disciplines were used	35	1.97**/**	3.37*/ <sup>††</sup>	2.71**/ <sup>††</sup>
Terminology was appropriate	39	3.69**/**	3.95**	3.92***
The artistic processes of creating, performing, and/or responding were incorporated	39	2.08*/*	3.80*/ <sup>†</sup>	3.10*/ <sup>†</sup>
Assessment was ongoing throughout the lesson, with appropriate feedback provided	39	2.90**/**	3.49*	3.41**
There was a final evaluation of student learning	36	2.22	2.58	2.50
Students had an opportunity for reflection	38	1.92*/*	2.82*	2.71*
<b>Overall Average of Lesson Plan Quality</b>	<b>39</b>	<b>2.63*/*</b>	<b>3.40*</b>	<b>3.21*</b>

\* or <sup>†</sup> Significance found at  $p \leq 0.001$

\*\* or <sup>††</sup> Significance found at  $p \leq 0.01$

\*\*\* Significance found at  $p \leq 0.05$

Repeated Measures Multi-Variate Test was performed

Scores on a scale of 1 to 4 with 4 = strongly agree; 3 = agree; 2 = disagree; and 1 = strongly disagree.

### **Arts Integration Implementation**

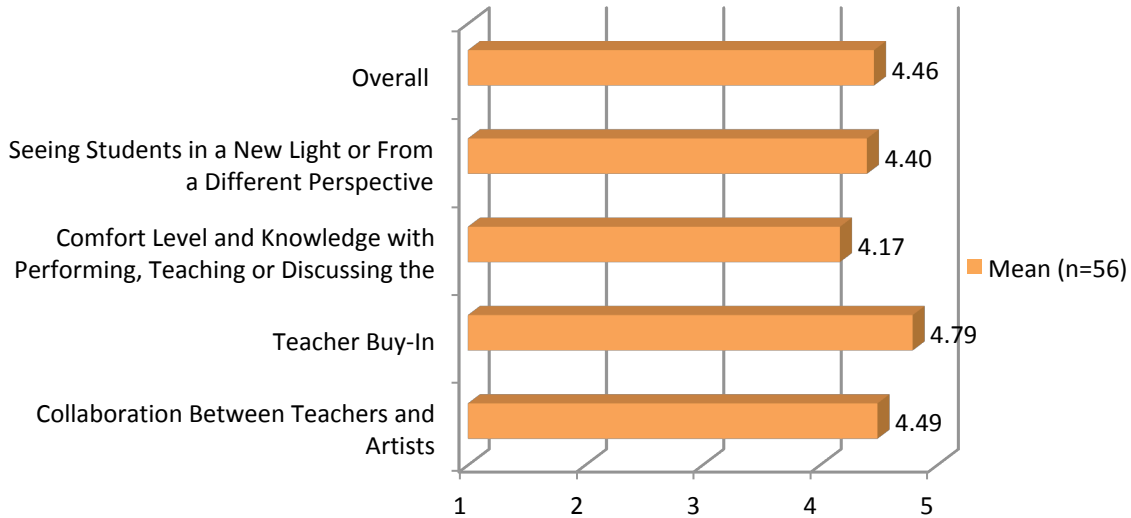
Other areas of success of *Arts Integration* pertain to the practices put in place during implementation. First and foremost, the collaboration and ongoing communication among members of the Advisory Team were critical in making sure that any problems/issues were immediately addressed and there was a commitment to continually improve as the program evolved over time. There was thoughtful reflection about the different components of the program being implemented and what needed to change to ensure successful outcomes. The most relevant example of this was the change in requirements regarding teacher and artist participation in the graduate course as a prerequisite to having an artist residency. After the first year, the Advisory Team realized that, without the foundational knowledge provided by the graduate course, the success of the artist residency would be jeopardized. It was evident during this first year that both teachers and teaching artists were struggling to collaborate and develop quality arts integrated lesson plans without this foundational knowledge. While they had the coaching of the *Arts Integration* arts specialists during their planning phase in this first year, this was not sufficient



for them to gain the level of expertise needed to develop quality arts integrated lessons and instructional practices.

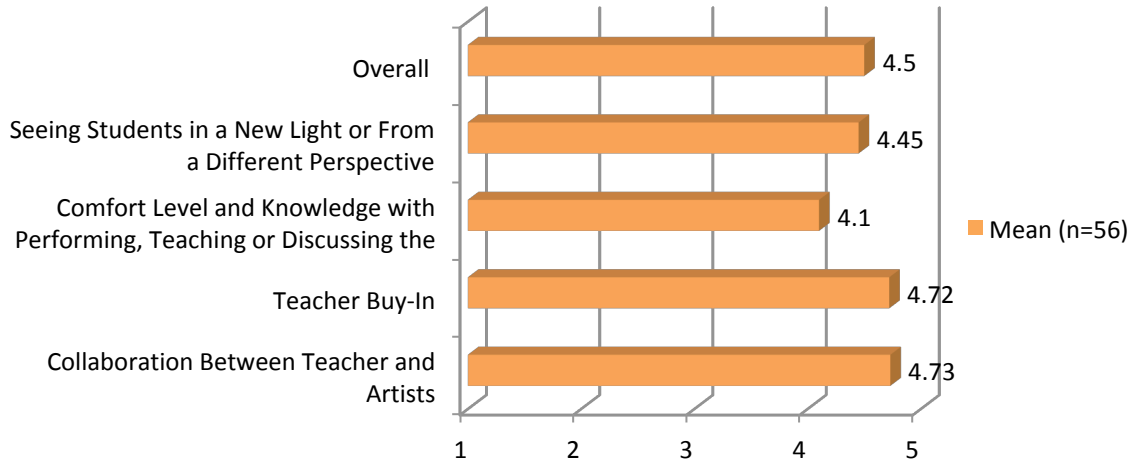
**Teacher and artist feedback.** Feedback with respect to how the *Arts Integration* project worked or didn't work came from the Teacher Attitude Survey and Artist Attitude Survey. The surveys asked the teachers and artists to reflect on the artist residency and assess the impact it had on the teacher (from the teachers' own personal reflection and from the artists' perspective about the impact on their residency teacher). Figures 6 and 7 show the mean scores for teachers and artists. Overall, the satisfaction of both teachers and artists was high—4.46 for teachers and 4.50 for artists.

**Figure 6: Teacher Attitude Survey Means**



Scores on a scale of 1 to 5 with 5 = strongly agree; 4 = somewhat agree; 3 = not sure; 2 = somewhat disagree; and 1 = strongly disagree.

**Figure 7: Artist Attitude Survey Means**



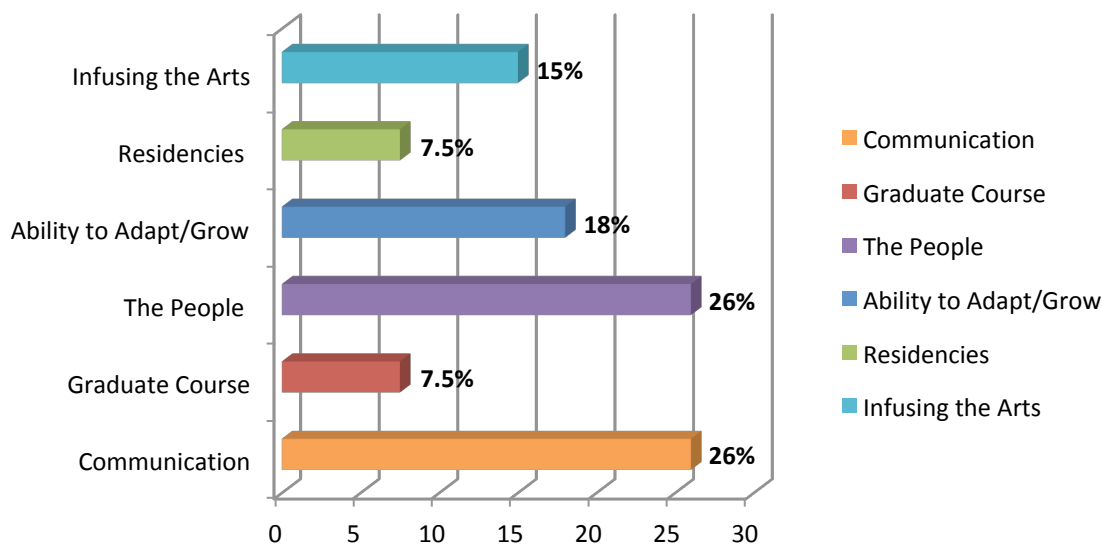
Scores on a scale of 1 to 5 with 5 = strongly agree; 4 = somewhat agree; 3 = not sure; 2 = somewhat disagree; and 1 = strongly disagree.

Teacher “buy-in” and “collaboration between teacher and artist” were rated the highest by both teachers and artists, although artists did have a more positive perception about the level of collaboration (4.49 for teachers vs. 4.78 for artists). The item rated the lowest by both teachers and artists was “comfort level and knowledge with performing, teaching and discussing the arts” (4.17 for teachers and 4.1 for artists). Regardless, a score of 4 and above is quite positive and reflects a high level of satisfaction for those teachers and artists that participated in *Arts Integration*.

Additional feedback to assess the quality of the implementation of *Arts Integration* and suggestions for improvement came from the qualitative input of the participating core teachers, the project director, project manager, art specialists, and evaluators. The open-ended questions asked respondents to address strengths and challenges of the program over the years; how challenges were addressed; and any additional recommendations regarding the project’s implementation.

**Arts Integration strengths.** The content analysis of the responses revealed some insightful reflections about the program’s successes and challenges, viewed through the critical lens of these individuals. Figure 8 shows the categories of responses and the frequency in which they were mentioned, with respect to the strengths of *Arts Integration*. The areas of strength most frequently cited were in communication (26%) and the people (26%) involved.

**Figure 8: Strengths of Arts Integration Program (N=21)**



The following are typical comments that capture the essence of each of these categories, some of which overlap in more than one category:

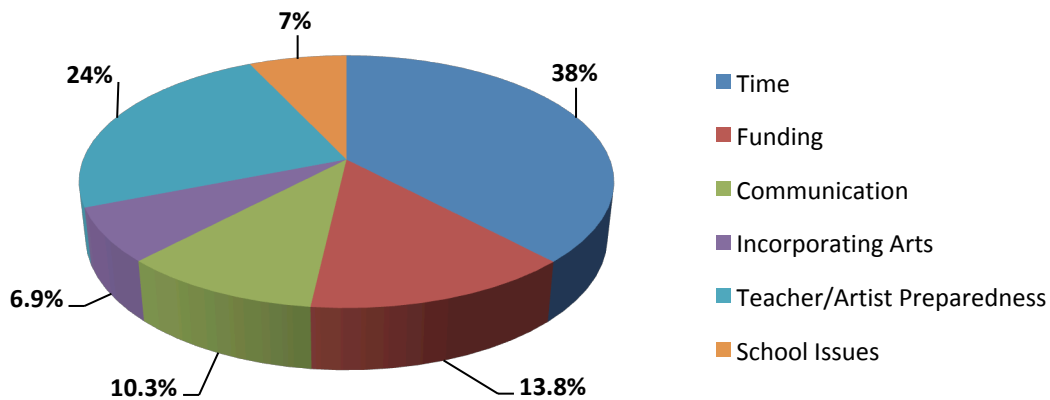
- **Communication:** *The strengths are with respect to the on-going communication between the implementation team and the recognition that there needs to be continual reflection about what is happening and what needs to be changed to improve it.*
- **People:** *Program strengths include the people (teaching artists, teachers, administrators, and planning team members), [and] the residency planning process (although it could be made less complicated). Strong core and advisory teams. Incredible human capital.*
- **Ability to Adapt/Grow:** *Ability of the individuals to work together and make changes based on feedback.*
- **Infusing the Arts:** *Arts Integration gave my students meaningful engagement in their learning. It gave an opportunity to tap into other realms of learning that gave some students a chance to*

show their strengths in a new area. It also gave students an opportunity to work on social interactions to come up with an end learning product.

- **Graduate Course:** *The professional development for teachers and artists is vital. I believe we have seen a major difference by requiring teachers to take the course to get a residency.*
- **Residencies:** *[The] diversity of experiences in different residencies provided rich areas of learning. Longer residencies periods seemed more successful.*

**Arts Integration challenges.** While there were many favorable comments regarding the *Arts Integration* program, as a group of individuals educated in the skill of critical reflection, the respondents provided well thought out and reasoned reflections about the challenges experienced as the program unfolded over the years. Figure 9 summarizes the areas of challenge.

**Figure 9: Arts Integration Program Challenges (N=21)**



The following are typical comments that capture the essence of each of these areas of challenge, some of which overlap in more than one category:

- **Time:** *The time to meet each day with the artist to prepare subsequent lessons. Teachers have so little time to get things done during the school day.*
- **Teacher/Artist Preparedness/Professional Development:** *The disconnect between the artists and teachers with respect to how art can be infused in the lessons with respect to math and reading. The lack of preparation for some of the teachers (i.e., they had not taken the college course and/or participated in the other PD sessions).*
- **Funding:** *Lack of professional development funding needed in training artists who don't have a background in education, not enough tech funding. re much lower than budgeted amount in grant application.*
- **Communication:** *The biggest challenge was clear communication and a clear understanding of policy and procedure. These have all greatly improved.*
- **School Issues:** *The closing of 2nd District and having to change the school for 2011-2012--also finding another control school. And, the commitment of Union City for this project. Lack of building administrator visibility in residency space.*
- **Incorporating the Arts:** *Teachers that did not take the graduate class did not have the same understanding and seemed to be less enthusiastic in integrating the arts into the classroom on a more regular basis past what the residency provided.*

The feedback from teachers and artists included suggestions for addressing the challenges. Improving communication was cited most frequently as the means to resolve the issues (31%), although many recognized that there were no solutions to some of the issues (25%). For the most part, the responses cite the need for more planning time, improving communication, clarifying roles and

responsibilities, and providing professional development that provides the foundational knowledge for the participants.

When asked about any final comments regarding the implementation of *Arts Integration*, the respondents expressed a high level of satisfaction overall (38.5%) or indicated the need to move forward (38.5%). As one teacher commented:

*I have grown as an educator because of the implementation of the arts into my teaching. I have seen/accomplished such amazing things with young kids that I never knew was possible. I am forever indebted to this WONDERFUL program. I have changed my teaching and that in turn has changed my students learning and understanding.....the effects/influence that this program has had are endless. Great program.*

### **Recommendations**

Although *Arts Integration* has completed its programming in the schools, it is important to reflect on the experience to gain insight into the lessons learned and how future art infusion efforts may benefit from the recommendations identified below. These recommendations are not necessarily listed in any order of priority. For the most part, they are an overarching set of recommendations that are considered most important with respect to improving the impact of programs similar in nature.

**Recommendation 1.** Require a greater level of commitment from the schools and their leadership as a prerequisite for their participation in a program to infuse art into their curriculum. Without this commitment, it is more difficult to solicit the teachers to participate in the program and have the planning time they need and for the schools to meet the requirements to provide student data for the evaluation.

**Recommendation 2.** Require both the participating teachers and artists to complete the necessary training and education before they implement a residency in a classroom. While this lesson was learned in the first year of *Arts Integration*, there were still situations where the teachers and/or artists were taking the graduate class in the same term as their residency. Establishing this foundational knowledge is essential to provide the teachers and artists with the tools and skills they need to develop an art-integrated lesson that will have a positive impact on the students' learning.

**Recommendation 3.** Carve out more time for the teachers and artists to do the residency planning. While the parties involved—teachers, artists and art specialists—all have other “jobs,” making it difficult to find the time to get together to do the required planning, knowing that this is a requirement for the residency should be made very clear. Without this time, it is difficult to feel confident about the lessons prepared and delivered in the classroom.

**Recommendation 4.** Have longer residencies. The *Arts Integration* residencies did have the advantage of having the teacher and artist working together to develop art-infused lessons. The intent was to develop the skill set of the teacher so that art-infusion can happen in the classroom, even when there is no resident artist. But, to get to that point, the more practice that the teacher has in doing this, particularly in tandem with an artist, the better able the teacher will be at applying this new skill set on their own.

**Recommendation 5.** Have greater clarity as to the roles and responsibilities. While having the strong planning team that continually communicated and engaged in problem solving was seen as a plus, there was still some confusion as to roles and responsibilities that resulted in delays. Again, as in any new program, it takes time for processes and systems to be put into place and to work out all the kinks. Therefore, as much as possible, clarity at the beginning is essential, as long as there is on-going communication regarding the implementation and the recognition that flexibility and adaptation might be necessary to improve the program's implementation and outcomes.

### **Lessons Learned**

There are many lessons learned from the *Arts Integration* project and its evaluation. First and foremost, it is essential to incorporate an evaluation design that provides more comprehensive evidence about the outcomes of the program, as well as the assessment of its implementation. If this evaluation had assessed and only reported the Government Performance and Results Act (GPRA) measures (i.e., proficiency in math and reading as measured through standardized test scores) as required under the federal grant, it would appear that the program had very little success. However, the project level data, as

gathered and reported, provided a more comprehensive assessment of program success—detailing the varying levels of impact, not only on the students with respect to their achievement in math and reading, but as well in the areas of engagement and their learning habits. The data also provided evidence regarding the impact on the quality of teaching, which in the logic model, is an intervening factor that must show improvement if there is to be an impact on student achievement. Finally, to have any insight as to what worked and didn't work, the qualitative data gathered from teachers and artists, as well as other stakeholders, was essential. Without this feedback, the evaluators would not have been able to provide any useful recommendations for improving the programming.

Another lesson learned is with respect to the involvement of the evaluators from the onset of the program and the role they played with the Advisory Team throughout the project's design and implementation. While it is a given that evaluators need to remain objective and engage in their evaluative tasks with integrity and report the data without bias, it is important to recognize the value they add to an advisory team that often faces numerous challenges as a project is being designed and implemented. Evaluators offer insight and add value to advisory/planning team discussions with respect to:

- Theories of change and how programs should be designed and implemented with fidelity to a given logic model.
- The challenges of data collection and establishing the right processes and procedures to ensure the timely collection of data.
- The red flags that surface as data are being analyzed, which may require “course changes” in either the design or implementation of a program.

These contributions of evaluators are just those that were paramount in the evaluation of *Arts Integration*. Additionally, in regard to early and routine engagement of evaluators with the project's key staff and implementers, they were seen as an integral part of the project's delivery, rather than as “outsiders” who were to be viewed with skepticism and suspicion and heard from only when they had to deliver evaluation reports. When relationships are established early and have routine, two-way communication, the contributions of evaluators are perceived as more valuable and useful to the all stakeholders involved, ultimately leading to better design and outcomes for the program being implemented.

As a final reflection, *Arts Integration* did produce a number of positive outcomes for the students, as well as teachers and artists who participated in the program. This evaluation documented a number of these positive outcomes. However, because the program was time-limited and the level of exposure was not sustained over the long term for individual students, the long term impact of art-infusion on student learning cannot be definitively determined. Previous research (Burton, Horowitz & Abeles, 1999) has substantiated that arts instruction and integration within the curriculum must be rich and continuous, administrators supportive, and teachers enlightened for the full impact to be realized. Only in these schools will the arts add the kind of richness and depth to learning and instruction that is critical to healthy development.

Regardless, the evidence from the evaluation of *Arts Integration*, despite its limited implementation, does support the potential for arts-infusion to improve the quality of teaching, engage students in the learning process, as well as build their competence in 21<sup>st</sup> century learning skills. Given this, it is likely that with sustained exposure to such teaching practices, student cognition would improve in the long term. For this reason, to realize the real potential of art-infusion in the schools, there needs to be a commitment to support the full integration of arts into the development of lesson plans and instructional practices. The policy implications of this research are profound, particularly as they impinge upon in-school arts provision and teacher education. Parents, teachers, and other stakeholders should recognize the value of art-infusion and advocate for its implementation in the schools at the level in which its full potential can be realized.

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<sup>2</sup> The questions on Student Cognitive, Social and Personal Development Survey were adapted from Horowitz, R. (2005). Connections: The arts and cognitive, social and personal development. In B. Rich (Ed.), Partnering arts education: A working model (pp. 32-48). New York, NY: The Dana Foundation.

<sup>3</sup> Standardized test used in this evaluation study is the Pennsylvania System of School Assessment (PSSA) administered to public schools in the state of Pennsylvania. Students in grades 3-8 are assessed in reading skills and mathematics.