

Arts Achieve: Impacting Student Success in the Arts

Summary of Outcomes

Background

In 2010, the Arts Achieve: Impacting Student Success in the Arts project received two federal grants, an Investing in Innovation (i3) grant and an Arts in Education Model Development and Dissemination (AEMDD) grant. The project brought together the New York City Department of Education's (NYC DOE) Office of Arts and Special Projects (OASP) and five premier cultural arts organizations in NYC: Studio in a School (lead partner; visual arts), ArtsConnection (theater), the Weill Music Institute at Carnegie Hall (music); the Dance Education Laboratory at the 92nd St. Y (dance), and the Cooper Hewitt Smithsonian Design Museum (technology).

Through the Arts Achieve project, arts teachers in more than 40 NYC DOE public schools participated in in-service professional development on the use of balanced assessment, data driven instruction, and the integration of technology. The project was grounded in the theory that if arts teachers participate in sustained and intensive professional development that includes being members of professional learning communities and embeds the use of action research in their classrooms, the quality of their arts instruction will improve and, in turn, their students will improve their arts learning.

Implementation

Year 1: 2010-2011

During Year 1, teams of experienced arts educators, cultural partners, and assessment experts developed sets of Benchmark Arts Assessments to be used with students in fifth grade, middle school, and high school. The development of these assessments was a key aspect of the Arts Achieve project, as they enabled the measurement of student learning in the arts. They were also the natural next step for the DOE following the development of the NYC DOE *Benchmarks for Teaching and Learning in the Arts*, which articulate what students should know, understand, and do in each of four arts disciplines.

Years 2-4: 2011-2014

In each of Years 2-4, all participating arts teachers were provided with a set of supports that included:

- *Formal workshops.* At least three formal training sessions were offered per year. Sessions focused on the use of formative and summative assessment strategies and the integration of technology. Participants learned from experts in the field and had opportunities to meet in school and PLC teams (colleagues teaching in the same arts discipline and grade level) and to discuss the instructional implications of their student data.
- *Inter-visitations.* Arts teachers participated in at least one inter-visitation per year, where they observed one of their colleagues from within their PLC, discussed student work, and shared best practices.
- *In-class support.* In-class support occurred through the partnership between the participating arts teacher and a “facilitator” (a teaching artist from the partnering organizations). The facilitator worked closely with the arts teacher over the course of 20 days during the school year to model, co-teach, or observe instruction. The team focused on the teacher's action research, the appropriate use of formative and summative assessment strategies, the use of data to inform instruction, and the integration of technology in instruction and assessment.
- *Technology bundles and support.* Arts teachers were provided with technology bundles that included iPads, speaker/projectors, wireless connector tools, classroom apps, and more. iPads were intended to be used as both instructional and assessment tools. Support was provided to teachers on the use of these tools over the course of the grant. Additionally, the Arts Achieve partners set up a social networking site through Ning. This allowed for the arts teachers to share best practices and resources with each other in an ongoing way.

Evaluation Design

Arts Achieve was guided by three over-arching goals: 1) to improve student achievement in the arts; 2) to enhance arts teacher practice; and 3) to integrate technology into arts classrooms. Metis Associates, an independent research and evaluation firm, conducted a rigorous cluster randomized control trial study of Arts Achieve in order to examine its impact on participants.

Sample. NYC DOE public schools that met basic eligibility requirements were recruited and those that volunteered were randomly selected to participate. The selected schools were then randomly assigned to treatment or control groups using a cluster randomized process. The clusters were based on arts discipline (dance, music, theater, or visual arts) and school level (elementary, middle, or high).

| | Treatment (Arts Achieve Participants) | | | Control | | |
|-----------|--|-----------------|------------|-----------|-----------------|------------|
| | N Schools | N Arts Teachers | N Students | N Schools | N Arts Teachers | N Students |
| 2011-2012 | 43 | 44 | 2,046 | 34 | 35 | 2,020 |
| 2012-2013 | 47 | 48 | 2,189 | 36 | 37 | 2,186 |
| 2013-2014 | 44 | 45 | 2,842 | 34 | 39 | 2,894 |

Data Sources.

- *Program documentation*, including professional development materials, participant attendance, and observations of trainings, was collected and analyzed. Implementation logs also on in-class implementation and teacher practice.
- *Arts teacher surveys* were administered to collect information on arts teachers' experience and perceptions of their knowledge and instructional skills. Using Likert-scale and open-ended questions, the surveys measured treatment and control teachers' use of the *Blueprint* standards, formative and summative assessment strategies, and technology strategies prior to the start of implementation (baseline) and at the end of (post) of each school year. *Arts teacher focus groups* were also conducted at the end of each school year to learn more about implementation in the school and teachers' perceptions of the impacts of the program.
- The *Benchmark Arts Assessments* were used to measure students' arts achievement. The assessments consist of multiple components, including performance and written sections, and include activities that address content knowledge, transferable concepts, and skills in the designated arts disciplines. Students are asked to analyze masterworks and create their own works of art. The assessments were administered to all students in the treatment and control groups in the fall (pre) and spring (post) of each school year.
- *Secondary data* were collected from the NYC DOE on students' characteristics, including demographics (i.e., gender, race/ethnicity, English language learner status, special education status, free/reduced priced lunch status), and average daily attendance. These data were used as covariates in the analysis models. Students' scores on standardized tests from the year prior to participating in Arts Achieve (baseline) also were collected and used as a measure of student academic achievement.

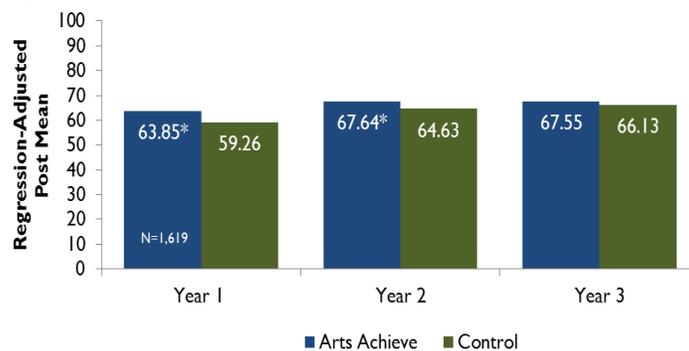
Data Analysis. Three-level hierarchical linear modeling (HLM) was conducted to measure the impact of the Arts Achieve project on students' arts achievement as well as on teachers' instructional practice. Additionally, multiple regression analyses were conducted to measure the impact of the Arts Achieve project on arts teachers' use of technology. Potential confounding factors that have a relationship with the treatment or outcome (e.g., student characteristics, ELA achievement) were included in both the HLM as well as the multiple regression analyses to reduce threats to the study's internal validity.

Findings for Goal 1: Improving Student Achievement in the Arts

Across all arts disciplines and grades, treatment students outperformed control students in arts achievement in Years 1 and 2.

In each year of implementation, students in the treatment schools made greater gains in their arts achievement than participating students in the control schools. The results of HLM analyses indicated that participating students in the treatment schools made significantly greater gains in their arts achievement than participating students in the control schools, after controlling for student, teacher, and school background characteristics in Years 1 and 2 of implementation. The gains between the students in the treatment and control schools were not statistically significant in the third year of implementation. The effect Year 1 effect size was 0.28, the Year 2 effect size was 0.20, and the Year 3 effect size was 0.09.

Figure 1: Arts Achievement across Disciplines and Grades

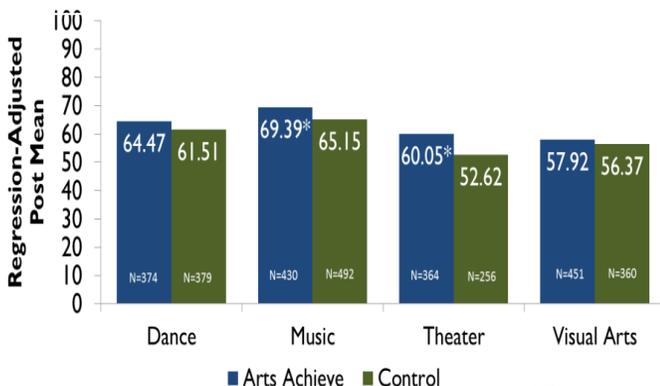


* $p < .05$.

By discipline, treatment students outperformed control students in music in the first two years of implementation and in theater in the first implementation year.

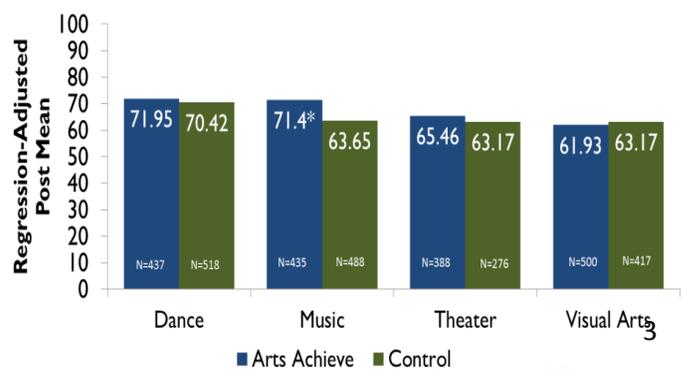
To determine if there were differences in the impact of Arts Achieve by arts discipline, separate HLM analyses were conducted for the appropriate subsample the each implementation year. At the end of the first year of implementation, after controlling for student, teacher, and school characteristics, the results indicate that students in the music and theater treatment schools scored higher on the Benchmark Arts Assessments than participating students in the music and theater control schools. The Year 1 music effect size was 0.28 and the Year 1 theater effect size 0.47. Similar results were evident in music in the second implementation year. After controlling for student, teacher, and school characteristics, there was a statistically significant effect of Arts Achieve in the music treatment schools, with an effect size of 0.47. In the third year of implementation, the gains between the students in the treatment and control schools were not statistically significant by discipline.

Figure 2: Arts Achievement in Year 1, by Discipline



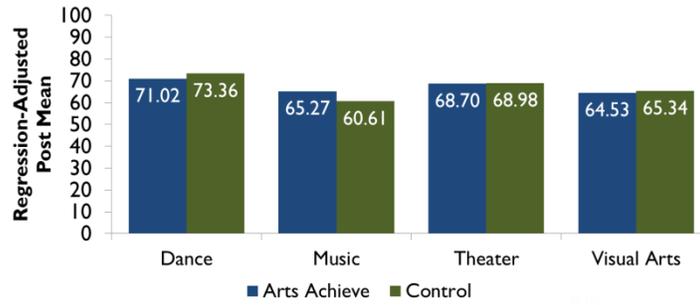
* $p < .05$.

Figure 3: Arts Achievement in Year 2, by Discipline



* $p < .05$.

Figure 4: Arts Achievement in Year 3, by Discipline



* $p < .05$.

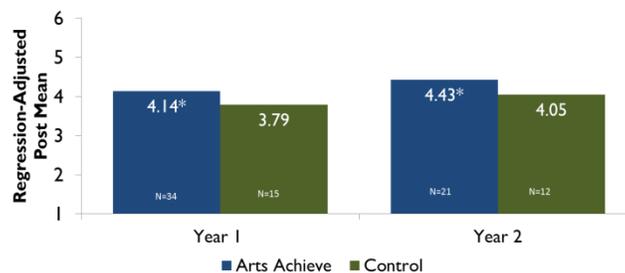
Findings for Goal 2: Enhancing Arts Teacher Practice

Arts Achieve teachers demonstrated greater growth in their instructional practice than arts teachers in the control group.

Arts Achieve aimed to improve arts teacher practice by increasing their use of formative assessment strategies to identify gaps in students' knowledge and skills, aligning their content with the *Blueprint*, and improving their use of technology for instruction and assessment. To measure whether change occurred in teacher practice, arts teachers completed annual pre/post surveys, through which they self-reported the frequency with which they used formative assessment strategies (i.e., teacher descriptive feedback, peer feedback, student self-reflection, and student self-assessment), taught the strands of the *Blueprint* (e.g., developing arts-based literacy, making connections through the art form), and used technology (e.g., iPads, Smart board) in instruction. Rating scales ranged from 1 (lowest use) to 6 (highest use). An average across items was calculated to create a composite measuring arts teachers' instructional practice.

Multiple regression analyses of the instructional practice data indicate that there was a statistically significant effect of Arts Achieve on arts teachers' instructional practice in both Years 1 and 2 of implementation. In Year 3 of implementation, although the arts teachers in the treatment schools made greater gains than the arts teachers in the control schools, these gains were not statistically significant. The analyses controlled for teacher background characteristics and also adjusted for lack of baseline equivalence between the treatment and control group. The effect Year 1 effect size was 0.53, the Year 2 effect size was 0.59, and the Year 3 effect size was 0.27.

Figure 5: Arts Teacher Instructional Practice Scores in Years 1 and 2



Data from interviews with arts teachers provided evidence to support the positive gains shown in the analyses. One teacher explained that the project allowed her to *perfect her craft as a teacher*. Another teacher explained that through his review of the data, *he knows where his students' weaknesses are*, and they are aligned with the instructional areas in which he did not place focus on over the course of the year. Yet another teacher summarized that because of Arts Achieve she now has a better understanding of formative assessment, which has allowed her to teach in such a way that her *students have become more responsible for their own learning*. Overall, teachers were most positive about the PLCs that they participated in through the project, as well as having the facilitators, who served as

“critical friends” in their classrooms. They explained that the project addressed the commonly felt isolation that arts teachers feel and often catapulted them to being leaders in their buildings, as the work was aligned with the most current educational discussions about performance assessment, using data to inform instruction, formative strategies, and assessing the Common Core.

Observation data indicates arts teachers have been able to maintain many practices.

A set of post-implementation observations of participating arts teachers was conducted in the fifth and final year of the project. Data from these observations indicated that many of the arts teachers were continuing to use formative assessment and technology practices that they learned through the grant. While most teachers were not able to maintain their connections with their PLC groups, several had spread the practices they learned to all classes they teach and were able to turnkey learnings to other teachers at their schools. Many also were involved in other arts initiatives and were continuing to improve their knowledge and practice.

Findings for Goal 3: Integrating technology into arts classrooms

Arts Achieve teachers increased their use of technology for instruction and assessment in each year of the project.

Arts Achieve teachers received technology bundles to use in their arts classrooms. Teachers were expected to use the iPads in various ways, including: taking pictures of student work; taking video to record students’ performances and reflections; and using applications for instruction. The use of technology over the course of the three years of implementation was tracked using the implementation logs, which the facilitator and arts teacher pairs completed together during each school visit. The pair indicated if technology (i.e., iPad, desktop/laptop, Smart Board, video camera, still camera, sound system, projector or other device) was used in a given lesson.

According to data gathered through the logs, technology was used during 60 percent of the lessons in the first year of implementation. The percentage of use increased to 74 percent of lessons in the second year and 76 percent in the third year. Data were also analyzed for use of the iPads specifically, which were distributed to the Arts Achieve teachers in the winter of the first implementation year. By the end of that year, iPads were used for instruction during 24 percent of lessons, with percentages increasing to 46 percent the second year and 57 percent in the third.

Figure 6: Technology Use in Arts Achieve Targeted Classes

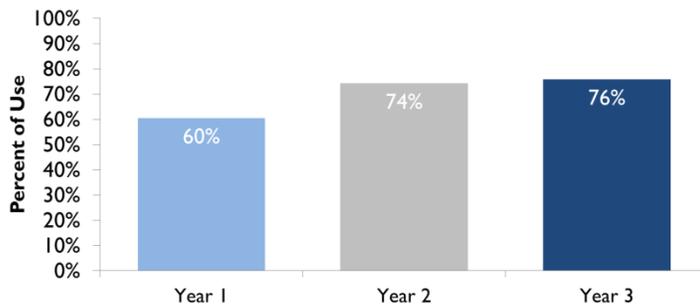
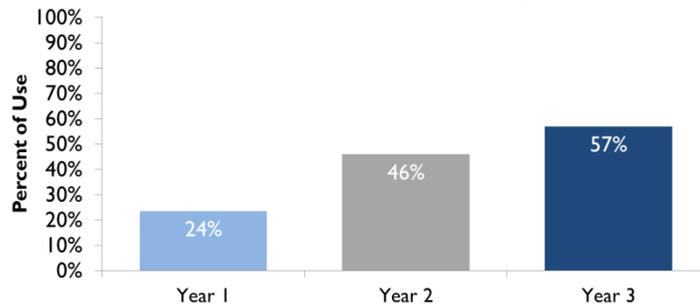


Figure 7: iPad Use in Arts Achieve Targeted Classes



Focus group data support findings that the arts teachers increased their comfort with technology and perceived that it increased student motivation.

In focus groups in the final year of implementation, arts teachers described their use of iPads for instruction, including using them for peer feedback and self-reflection. One teacher explained that it was useful to be able to document the students' performance work and show parents changes in students' learning, during parent-teacher conferences. Another teacher reported, "I found them to be an incredibly useful tool, not just for art making and for doing formative assessments, but it's almost like that little magic box that can motivate kids just a little bit more."

Lessons Learned

Arts Achieve was an extremely ambitious project that served an important unmet need in arts education. The project was designed not only to enable the NYC DOE to take the next step following their development of the *Blueprint* standards—to assess whether students are meeting these standards—but also to provide professional development and intensive supports to arts teachers so they might identify the gaps in student learning and have the instructional tools to fill them. The project was highly successful in many ways, including the development of high-quality, valid and reliable Benchmark Arts Assessments that may be used by arts teachers throughout NYC and beyond; and exemplar formative assessment practices, unit and lesson plans, and professional development models. Furthermore, data from the rigorous experimental design also indicate that the project had significant impact on the instructional practices of participating teachers and the arts achievement of their students. While the first two years of Arts Achieve show extremely strong results, the data indicate that the effect in Year 3 was not as strong. There are many possible explanations for the lack of significant findings in the final year of implementation. For example, it may be due to the greater amount of time that teachers and facilitators spent on documenting the *Arts Achieve* work in the final year as compared to the first two years. Though these efforts were extremely useful for replication efforts, several arts teachers and facilitators reported that it took away from implementation efforts. Additionally, it may be that the lack of findings regarding teachers' instructional practice is due to low response rates. Survey data collection from the participating treatment and control teachers was often challenging, becoming more so over time.

The project also produced a number of important lessons learned that may inform the field moving forward:

- *Serving in the role of a facilitator was challenging for teaching artists, but one in which they became more effective at with proper support.* The teaching artists who participated in this project generally struggled initially in their role as facilitator or a "critical friend" to school-based arts teachers, as they were not accustomed to playing this role and were unsure how to affect change in teacher instruction. The project team found that it was important for facilitators to have a strong support group amongst themselves and to provide ongoing professional development in how to carry out this distinct role. They also found that it was important to select facilitators with aptitude and skill in implementing formative assessment, using instructional technology, and working with adult learners.

- *Considerable time and resources must be allotted for supporting arts teachers in the use of technology for instruction and assessment.* Arts Achieve provided participating arts teachers with a trove of technological resources for instruction. Teachers needed more support initially, however, in effectively using the technology with their classes. They struggled initially, for example, in using the iPads with students in small group formats. They were also challenged by lack of knowledge in best ways to save and share materials. The project addressed these concerns by ramping up the technology support given to the arts teachers as the project progressed. Cooper Hewitt, the technology partner, provided in-school supports to all of the participating schools, administered surveys to assess knowledge gaps, and implemented webinars for training purposes. Additionally, they hired a retired DOE teacher as a consultant to assist with instructional questions.
- *Conducting research while concurrently developing the project was an ongoing challenge.* Arts Achieve used a rigorous evaluation design to examine impacts, as required by the federal grants that funded it. This was advantageous in that it allowed the project to add to the knowledge base of what works in arts education. However it also proved challenging due to the fact that the program was simultaneously being developed. The first year was overly ambitious in its plan to develop, pilot, validate, and revise the Benchmark Arts Assessments, as well as to plan the project implementation. Furthermore, in order to use the assessments as the ultimate measure of student achievement in the arts, it was necessary to use them summatively, which limited the project team's capacity to use them instructively.
- *Lack of capacity to enforce participation and implementation.* Arts Achieve benefited from a project team comprised of, among others, high level NYC DOE staff from the Office of Arts and Special Projects. However, even with close attention and oversight by top DOE staff, the project team was limited in its capacity to enforce compliance with project activities. A number of schools dropped out of the project or experienced turnover in key project staff. Furthermore, across the three project implementation years, only one component of project implementation, the facilitator school visits (which was the only component over which the project team had ultimate control), was implemented with fidelity.
- *More time and resources were required to assure inter-rater reliability.* The performance aspects of the Benchmark Arts Assessments were highly innovative. Developing the rubrics and achieving inter-rater reliability was a key challenge, however, and something that needed greater time and resources devoted to it. Arts Achieve addressed this concern by ramping up training hours in each project year.