Arts for Academic Achievement

A Compilation of Evaluation Findings from 2004-2006

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INTRODUCTION

This report summarizes results of the first two years of a three-year evaluation of the Arts for Academic Achievement (AAA) program conducted by the University of Minnesota's Center for Applied Research and Educational Improvement (CAREI).

Background and Previous Findings

In 1997 the Minneapolis Public Schools and the Perpich Center for Arts Education received a four-year grant from the Annenberg Foundation to develop the Arts for Academic Achievement program. Although funding from the Annenberg Foundation ended in 2002, the program continues in Minneapolis Public Schools today, with support from the school district as well as local and national funders.

As part of the Annenberg Foundation-funded work, the Minneapolis Public Schools, as fiscal agent for the grant, contracted with CAREI to evaluate the program. Key findings from the initial study were as follows:

- **Teachers' instructional strategies and perceptions about student capacity**
  Data from annual interviews with teachers and artists at each AAA school and mini-case studies in six AAA schools indicated that AAA was a powerful professional development model for teachers. AAA, through its support of in-depth inquiry into the teaching and learning process in individual classrooms, brought about substantial change in teachers' instructional practice and their role in improving schools, both of which are pre-requisites to any lasting change in student achievement. Teachers readily described how AAA helped them to discover new strategies to make learning more engaging for their students, such as making instruction more child-focused or having students critique their peers' or their own work-in-progress. Arts integration also allowed teachers to see unexpected strengths in students and discover new options for assessing student learning; this made teachers aware of change and learning in students that they might have previously overlooked.

- **Student-Student interactions**
  Data from mini-case studies in six AAA schools showed that during arts-integrated instruction the range of possible interactions between and among students widened. The major areas of change observed by the evaluators included the following: improved communication in groups, the emergence of unlikely leaders, the blending of special needs children with their peer group, and improved student teamwork to accomplish a goal.

- **Student achievement**
  During the 1999-2002 program years, the CAREI study examined the relationship between the amount of arts-integrated instruction as reported by teachers on an annual survey and gain scores on the *Northwest Achievement Levels Test* (*NALT*) in reading for students in grades 3, 4, and 5. In the final year, 2001-2002, the study

found a significant positive relationship between the amount teachers said they had integrated the arts and growth on *NALT* scores for 3rd, 4th, and 5th grade students. The achievement analyses were limited to grades 3, 4, and 5 because, at that time, growth data on the *NALT* reading test was available only for those grade levels. The study also examined achievement in mathematics, but these results were less consistent than was found for reading achievement.

Current Report

When the Minneapolis Public Schools, at the request of the AAA program manager, contracted with CAREI again in fall 2004 to further evaluate the program over a period of three years, the major objectives of the second study were to 1) examine student learning, as measured by standardized tests, in a larger set of grade levels, and 2) measure student effects not otherwise captured by standardized assessments.

Findings from the first two years of the current evaluation are provided within this report, which includes the data from the following evaluative designs:

A. Alternative Assessment Approaches

B. Standardized Achievement Measures

C. Perspectives of Teachers, Artists, and Students

Overall, the result from the three sets of evaluation data described above provide insight into the dynamics involved in integrating arts into non-arts disciplines, with the ultimate focus always on student learning.

PROGRAM OVERVIEW

Program Goals

The goals of Arts for Academic Achievement are as follows:

- To improve student achievement and engagement.
- To improve teacher practice by making arts-based and arts-integrated learning an integral part of classroom instruction.
- To change schools, including school climate.
- To change communities, including connecting families to schools.

To accomplish these goals, AAA provides schools a structure, resources, and support for collaborative projects between teachers and artists. The purpose of the projects is to increase the amount and quality of arts-based and arts-integrated learning by students. In applications to participate in AAA, school principals describe the intended collaborative projects as well as a school-based assessment process.

AAA program staff then assist school personnel with honing project ideas; this may include recommendations regarding artist selection and alignment of the collaborative project with

student learning goals. A designated site coordinator manages the work of the AAA team, including management of the artist's visiting schedule. Funds provided to participating schools by the AAA program are apportioned by a team of teachers at the school among teachers who have expressed interest in partnering with an artist. Many schools implement multiple projects over the course of a year, sometimes one project for each grade level; other schools implement just one or two projects. The intent is that through the collaborative project teachers will learn new strategies they can continue to use after the project is completed and the artist is no longer available. In this way, AAA aims to influence the effectiveness of instruction not just during an AAA project but throughout the school year and beyond.

Arts for Academic Achievement Project Planner

The AAA team in each school, consisting of participating teachers and artists, is expected to develop an instructional plan to integrate the arts by "planning backwards" from the desired results of student learning. AAA program staff ask each project team to use a template, the *Arts for Academic Achievement Project Planner*, to assist them in planning, documenting, and reflecting on their collaborative work. The desired results of student learning must be consistent with the school's improvement plan, but teachers are encouraged to identify areas within those broad goals that are particularly relevant to their students. For example, a school improvement goal might be "to close the gap in reading test scores between white students and student of color." Under that broad goal, the AAA project team examines school data to identify a specific area of focus, such as literal comprehension skills. Unlike some reform initiatives that specify a curriculum or a set of instructional strategies to be implemented, in AAA the learning experiences for each project are to be developed by the collaborative teacher-artist team. As a result, Arts for Academic Achievement projects encompass a wide range of instructional practices under the broad term *arts integration*.

Critical Friends Study Group

The primary mechanism for teacher professional development in AAA is the collaborative work between teachers and artists. However, in 2004-2005, AAA also provided professional development to teachers through "Critical Friends" study groups that were facilitated by peer coaches. The coaches were teachers or artists with experience in arts-integrated instruction and teacher-artist collaboration. Each group met for a total of eight hours during the year and the teacher who served as the coordinator of the AAA project at each AAA school was required to attend. The coordinators were also encouraged to bring one other person from their school to each meeting.

Peer Coaches and Lesson Study Meetings

To increase the level of professional development to collaborative teacher/artist teams in 2005-2006, AAA provided peer coaches who facilitated on-site planning and reflection meetings with each AAA-funded project for a minimum of six hours[1]. The coaches were teachers or artists with experience in arts-integrated instruction and teacher-artist collaboration. In addition, the AAA school-based coordinator and other teachers involved in AAA projects at each school were encouraged to attend AAA Critical Friends Lesson Study

[1] Schools new to AAA in 2005-2006 were expected to participate in a minimum of eight hours of planning and reflection with a peer coach.

meetings. These meetings provided an opportunity for teachers to experience and analyze an exemplary arts-integrated lesson.

EVALUATION DESIGN AND METHODS

The evaluation plan was developed to answer the following questions:

1. How is implementation of AAA, and arts-integrated instruction in general, related to student learning?

2. Is the relationship between student learning and implementation of AAA, and arts-integrated instruction in general, stronger for various subgroups of students (i.e., students from high poverty homes, students of color, and students in English Language Learners programming)?

3. What do students learn in AAA, and arts-integrated instruction in general, that is not captured by standardized assessments?

Over the first two years of the study, three different designs were used to address these questions (See Table 1). In 2004-2005, or Year One, the evaluators began a three-year effort to work with teachers and artists involved in a small number of AAA projects in order to develop and implement measures of student benefits from AAA projects other than the existing standardized tests. This was Design A. In that same year, Design B included an analysis of results from standardized tests for all AAA schools serving students in grades K-8.

Due to insurmountable difficulties to compare student performance (e.g., student mobility, teachers moving to different buildings, etc.) and upon discussion among the AAA staff and the evaluators, the work on alternative assessment measures (Design A) was discontinued in Year Two. It was replaced by collecting from teachers, artists, and students, in a sample of projects, their perceptions of how students benefited from AAA projects. This was Design C. This section of the report describes data collection methods used in each of these designs.

Table 1
Overview of Evaluation Designs

Design	Data Sources	Scope of Data Collection
A. Alternative Assessment Approaches	Evaluator works with teachers and artists in each project to develop and implement alternative assessment approaches	4 projects in 2004-2005
B. Standardized Achievement Measures	Teacher survey Standardized test scores	27 AAA schools that served students in grades K-8 in 2004-2005
C. Perspectives of Teachers, Artists, and Students	Interviews with teachers, artists and students	14 projects in 2005-2006

Design A: Alternative Assessment Approaches

The first design focused on 4 AAA projects. For each project, an "alternative assessment work group" was formed to work with the evaluators with the following tasks:

- narrow down the desired results for student learning in the project,
- define one of the desired results in measurable terms,
- identify an existing tool or develop a new tool to measure this result, and finally,
- use the tool to collect data.

The work groups included the teachers and artists involved in a project and the AAA site-level coordinator and the principal at each project school. The intent was to work with these groups over the three years of the study to gather data, other than standardized test data, about how students benefited from participation in an AAA project.

The time-intensive nature of this design meant that only a small number of projects could be included. The four projects were selected in consultation with the AAA program manager, and the foremost selection criteria were as follows:

1. The extent to which the teachers and artist in each project had worked together previously. If this were not possible, either the teachers or the artist should have prior experience in designing and implementing an AAA project.

2. The willingness of the teachers and artists to work with the evaluators to develop some alternative assessments of student learning and then, in subsequent years of the study, use the assessments within their AAA project.

3. The likelihood that the team would repeat the project in the subsequent two years of the study.

4. The principal's support for teachers' involvement in the study.

Other criteria used to select the projects to be examined in the evaluation study were the likelihood that the project would be implemented as well as variety in grade levels, curriculum areas, and art forms. Given the individualized nature of most AAA projects, it was not possible to select a sample that would be representative of the full range of AAA projects. Nonetheless, the intent was to offer illustrations of what is possible in AAA projects by providing information on how students in these four projects were affected.

The program manager approached the principal and AAA coordinator at each school about the possibility of including one of their projects. If they were willing to explore further, the program manager and evaluators met with principal and coordinator to determine which AAA project at their school best fit the criteria. Then, coordinator set up a time for the evaluators to meet with the teachers who would be involved in the selected project and invite them to participate. Each school was offered $1000 in additional funding per year from AAA in recognition of the extra time and effort that would be required of the participating teachers. The funds were given to the school and each school could make its own decision about how to dispense the funds.

The majority of the work during the first year centered on building a foundation for the alternative assessment tools that would be used in the subsequent two years of the study. As a result, the data included in this report were gathered in the process of identifying measurable results and developing/selecting the tools, rather than data from the tools themselves. The amount and type of data vary among the projects, in order to accommodate the diversity of art forms and non-arts content areas represented in the projects. The evaluators sought to maximize opportunities for data collection in each project, be it through observing instruction, interviewing teachers, artists, and students, or reviewing documents. The interviews were audio-taped, with the exception of instances where a quiet location for recording was not available. In these cases, the evaluators took written notes during the interview. The audio-recordings were transcribed and the content of the transcripts, along with the content of the evaluators' notes from interviews and observations were analyzed. In two projects, the teachers and artists provided the evaluators with data from student surveys or classroom assessments they had developed earlier.

Due to the great variety among AAA projects, it would be inaccurate to conclude that the outcomes reported from this design are representative of the outcomes of AAA projects as a whole. Instead, the data illustrate possible outcomes in AAA projects.

Design B: Standardized Achievement Measures

The second design included teachers and students at 27 elementary and middle schools that participated in AAA during the 2004-2005 school year. Although AAA also supported projects in 7 high schools, they were not included in this portion of the study. This is because, unlike most students in elementary and middle grades, high school students receive instruction from more than one teacher. In the analyses, the amount of arts integration that each student received was based on his/her teacher's report on a survey. Since high school students have multiple teachers and also because there are often multiple teachers within each discipline or content area, it was not feasible to construct an indicator of the amount of arts-integrated instruction each student received at the high school level.

Furthermore, this portion of the study is limited by the availability of standardized test data, which is available only in reading and mathematics, even though AAA projects target curriculum areas beyond those two areas. Finally, a decision was made to focus the study on student achievement in reading because the majority of AAA projects targeted reading instruction.

Data Collection Tools

Data were gathered from three primary sources:

- school district records of standardized achievement test results and student demographic information,
- a teacher survey, and
- planning forms completed by each AAA project.

Achievement Tests and Student Demographic Information. The following indicators of students' reading achievement were obtained from the district for use in the study:

- The *Total Literacy Scale*[2] *of the Kindergarten Assessments* that was administered in fall 2004 and spring 2005.

- The average number of words per minute that 1st grade students could read correctly. This test is part of the 1st grade *Oral Reading Assessment* administered in spring 2005.

- Scaled scores for 2nd grade students on the *Northwest Achievement Levels Test* (*NALT)* in reading from spring 2005.

- Scaled scores for 3rd-7th grade students on the *NALT* in reading from spring 2005 and spring 2004. The difference in these scores indicates the amount of growth in students' reading ability during the year of the study.

- Scores for 8th grade students on the *Minnesota Basic Skills Test (MBST)* in reading from spring 2005.

- Scores for students in grades 3, 5, and 7 on the *Minnesota Comprehensive Assessment (MCA)* in reading from spring 2005.

The district also provided information on students' ethnicity, their participation in programming for English language learners, and their eligibility for the free- and reduced-price lunch program, which was used as an indicator of family socio-economic status. Only students who had been continuously enrolled during the 2004-2005 school year in a school that received AAA funding were included in the database provided by the district.

Teacher Survey. In May and June 2005, the AAA coordinator at each of the 27 elementary and middle schools participating in AAA administered a survey to all teaching staff. The

[2] The Total Literacy Scale is computed from subscales of the Kindergarten Assessments, as follows: Total Literacy = (Alliteration x 2) + Concepts of Print + Picture Naming + Sounds + (Letter Names x 4) + (Rhyme x 2).

purpose of the survey was to gather descriptive information about how often teachers were integrating the arts into lessons to improve students' skills in reading, writing, and mathematics. Teachers chose from the following response options to indicate how often they integrated the arts into each curriculum area: Not at All, Very Little, Some, A Lot. Because Arts for Academic Achievement is only one source of support for arts-integrated instruction available to schools, and because teachers may integrate the arts on their own without additional support, the survey included all teachers, not just those that had participated in an AAA project.

The survey was developed in collaboration with AAA staff and was pilot-tested with 10-15 teachers in AAA sites. To encourage teachers to provide candid responses on the survey, the evaluators asked them to seal the completed survey in an envelope before returning it to their AAA coordinator. CAREI staff picked up the completed surveys at each school and the envelopes were opened at a later time at the CAREI office.

The response rate to the teacher survey was good. In the 26 schools administering the survey (one K-5 school did not administer the survey), 472 of 721 teachers, or two-thirds (66%), completed a survey.

In preparation for analysis of the student achievement data, the survey responses of teachers at a grade level within each school were combined to create a single score which was a composite of their survey responses. This single value for each grade level at each school was used in the analysis process. Determining a single score for teachers' amounts of arts integration was necessary because many students in Minneapolis elementary schools receive instruction from not just their homeroom or primary teacher, but from several teachers working at that grade level in their school. It was not possible, in most cases, to link the reading achievement score for each student with individual teachers in the array of teachers each student had. To do so would mean also assessing the percentage of time that each child had with each teacher (in a day, a week or a year), as well as accurately assessing the amount of arts-integrated instruction that each teacher provided.

As a result, the composite survey responses of 3rd grade teachers in school X were placed in the data file of each of school X's 3rd grade students, the composite responses of 3rd grade teachers from school Y were placed in the data file for each of the 3rd grade students at school Y, and so on. The composite teacher responses by school and grade level were then placed in each student's data file of achievement and demographic data

Arts for Academic Achievement Project Planner. The planner was developed by AAA program staff to assist teams in planning, documenting, and reflecting on their collaborative work. Each AAA project was asked to submit a completed form to AAA staff by the end of the school year. Program staff then provided copies of the relevant sections to CAREI for use in the evaluation study. These sections included the following information:

- number of student-artist contact hours,
- number of teacher-artist planning hours,
- length of the project in weeks,
- grade level of students, and
- a brief description and title of the project.

There were 78 planners available for analysis from projects in K-5 schools, K-8 schools, and middle schools. Seven planners did not contain sufficient information about which students participated in the project and they were dropped from the analyses. Many of the planners described projects that involved multiple grade levels within a school. For purposes of this study, the information was duplicated so it would appear in the database for each grade level of students involved in the project. For example, if a planner covered a project that involved students in grades 3, 4, and 5, then the information from that planner was copied and appeared in the database three times, once for each grade level at that school. These adjustments resulted in a database of 126 projects.

Data Analysis

The relationship between student achievement and arts-integrated instruction was examined by comparing standardized reading test scores among groups of students who received different amounts of arts-integrated reading instruction. The amount of arts-integrated instruction was based on the composite survey response of all teachers at a grade level within each school. The survey asked teachers how much they integrated the arts into their lessons to improve students' reading skills. If the amount of arts-integrated instruction is positively related to reading achievement, then statistical tests should indicate that students whose teachers reported more arts-integrated instruction have significantly higher test scores than students whose teachers reported less arts-integrated instruction.

Hierarchical linear modeling was used to test the statistical significance of the hypothesized model in which reading achievement was the outcome variable and the amount of arts-integrated instruction to improve students' reading skills was the explanatory variable. The model was tested separately for each grade level K-8. Students were nested within schools in the model because differences among the 26 schools included in the study would likely have a significant influence on reading achievement in addition to any potential influence of arts-integrated instruction. Hierarchical linear modeling statistically adjusts the relationship between reading achievement and arts-integrated instruction for these school differences.

Design C: Perspectives of Teachers, Artists, and Students

The third design, which was applied during the second year of the study, focused on a sample of the 139 projects that occurred in the 2005-2006 school year. The purpose was to collect information on how students (and, to a lesser extent, teachers) were affected by their participation in an AAA project, as gathered through interviews with teachers, artists, and students.

Due to the time-intensive nature of qualitative data collection and analysis, it was not feasible to include all of the 139 AAA projects that took place during 2005-2006 in the study. Hence, 14 projects were selected by the AAA program staff, based on criteria established by the evaluators. The primary criterion was the likelihood that the project would be implemented and provide substantial benefits to students. As a result, the sample intentionally included the most effective projects. This judgment was based, in part on whether the teachers and artists in a particular proposed project had worked together previously on the project. Previous experience would have provided them with time to develop a collaborative relationship and refine the instructional plan. The findings from the interviews are not

intended to represent the results of all AAA projects, but rather a selection of potentially effective ones. The evaluators also asked program staff to include a range of grade levels, non-arts areas, and art forms in the sample. Table 2 shows the art forms included in these projects and the grade level of students that participated in each.

Table 2
Project Characteristics

Art Form	Number of Projects
Theater	5
Visual and Media Arts	5
Dance	2
Literary Arts	2
TOTAL	**14**
Grade Level of Students	Number of Projects
Kindergarten & 1st	1
1st & 2nd	1
3rd & 4th	1
4th	1
5th	1
6th	1
7th	1
9th	2
11th & 12th	2
Mixed grades with an ELL teacher	3
TOTAL	**14**

Across the 14 projects in the sample the evaluators interviewed the following:

- 22 teachers
- 15 artists
- 3 coordinators
- 12 students.

This report also includes analysis of the comments made by a number of students who were led in discussion by their teacher. The evaluators asked interview respondents about their expectations of the AAA projects, what the projects entailed, and how students and teachers were affected by the projects. The interviews were primarily conducted in spring 2006, with one taking place fall 2006. In most cases the interviews were audio-taped and transcribed. In cases where it was not feasible to make an audio-recording, most often because a quiet location was not available, the evaluators took notes on the interview. The content of the transcripts and interview notes was analyzed to identify themes.

The variety of respondents produced a rich picture of the effects that AAA projects are actually having in the schools. However, given the individualized nature of most AAA projects, the data from this sample are not intended to be representative of all the AAA projects.

FINDINGS

During the 2004-2005 school year, 34 schools K-12 were AAA program sites. In the 2005-2006 school year the number of schools increased to 37.

The findings from the first two years of the current study are summarized in this section. The findings will first be presented using the three different evaluation approaches described earlier. Following this will be an analysis of findings across the years.

Design A: Alternative Assessment Tools

Design B: Standardized Achievement Measures

Design C: Perspectives of Teachers, Artists, and Students

Findings from Design A: Alternative Assessment Approaches

This section of the report first presents a brief description of the activities and intended outcomes in each of the four projects and then summarizes the results in the following areas:

- Students' non-arts learning
- Students' arts learning
- Other student benefits
- Teacher change

Jefferson Community School

At Jefferson Community School, two second grade teachers worked with a storyteller to help students learn a step-by-step process for creating an oral story. The artist led students through a process of drawing eight pictures, one to represent each stage in an oral story. He also showed them how to use body movements and sounds to engage their audience. On the storyteller's last day in the classroom, each student presented his/her story in front of at least one other person.

The artist spent an hour in each classroom for five consecutive days. Second grade students in a 1st/2nd grade split classroom joined one of the 2nd grade classrooms when the artist was present so they could also participate.

After the artist's time in the classroom was completed, the teachers worked with students to write down their oral stories and create illustrations. The students then visited the Minnesota Center for Book Arts (MCBA) where they published their stories by making an accordion fold book to hold their story and illustrations.

The teachers had one planning meeting with the artist and they remarked that it was helpful to use the AAA Artful Planner in that process. Neither teacher had previous experience with this artist; one of them had never worked with an artist before.

Students' Non-Arts and Arts Learning

The Minnesota standards in English Language Arts and the standards in Fine Arts both contain elements of the principal art forms in this project – oral storytelling and writing. This overlap makes it difficult to separate the data into evidence of learning in non-arts and evidence of learning in the arts; hence, the categories were combined in this summary.

The project data reveal numerous examples of student learning. For example,

- All students were able to create an oral story, write a story based on their oral story, and make a book with their written story and illustrations.

- Teachers noticed students became more comfortable with writing after the work with the artist.

- The evaluators observed a reflection session one teacher did with her students after they had visited MCBA and completed their books. The teacher walked them through the various parts of the project and asked what they recalled. Students recalled details of the stories the artist had told them six weeks earlier. At a few points in the discussion the students spontaneously repeated body motions and phrases from the artist's story. The teacher noted later that she was surprised students remembered details from stories the artist told in his first and second day with them.

Later in the year, the evaluators also met with each teacher to review the work of students. The evaluators commented that the students did a good job of writing from the perspective of the character in the story. For example, they seemed to really think about what it would be like to be shrunk or turned into a dog and unable to get on the school bus. One teacher responded that *"their imaginations were really engaged and they really put themselves in the place of the character that had been changed."* She also thinks the creation of the oral story, and the artist's emphasis on thinking sequentially, helped students later on when they were writing their story.

Other Student Benefits

The data also suggest that at least some students learned to work cooperatively with their peers, perhaps developing compassion or empathy. The teachers remarked that students who usually wouldn't work well together were able to do so during their work with the artist. One also noted that when students were paired with a student with a Developmental Cognitive Disability (DCD) the cooperative work was successful as well.

One teacher gave an example, which she heard from a parent, of how a student developed a sense of ownership for his learning and pride in his work. As the teacher told it, the student tried to read his story to his mother at home but she was doing something else at the time. The student said he wanted her full attention; it wasn't okay to read it while she was doing

something else. He wanted her to sit knee to knee as he had done in class, so she stopped what she was doing and listened to his story. The parent realized that her child was feeling very proud about his effort.

Several of the teachers' comments reflect insight into how the arts-integrated instruction may have benefited students:

- All students could be successful; there are a variety of ways to succeed.

  One teacher noted that she saw all students being successful, adding details to their stories as they worked on them. She saw everyone feel good about what they could do.

  A teacher remarked, *"I like the fact that with [artist name] everyone had a piece done and they felt good about it. Even Cindy[3], who got hers done a week and a half after book celebration, was elated. She could participate in the celebration with a stapled black and white draft because she hadn't finished her book yet. But it was a way even for her to participate."*

  Teachers said it allowed those who liked art [drawing] to use those skills, those who had lots of writing experience to write more, and those who struggle with language to experience a sense of accomplishment.

  One teacher recalled that several students who have lower achievement in reading and writing did well with oral storytelling because they have strong imaginations.

- As one teacher noted, *"Students got sparked by the story [artist name] told them. Their imaginative juices were flowing; they're motivated and they decide what they want to be in their story."*

- Breaking down the story creation process into steps helped students from being overwhelmed.

  A teacher remarked, *"Before the project the concept of writing a story was so out there [so far away from what students think and experience] and students could get stuck trying to get it on paper. Now it came more from within. Students experienced that they could create the story from their ideas."*

  The same teacher explained further, *"Second graders still don't have an idea yet that writing is word for word what you would speak. But having a picture first is a nice first step to understand that you need to write word for word what you would speak. It was a natural thing to flow from storytelling and speaking to writing, and that story was special already because they'd done it and practiced so much, they knew there was value to it because we'd had them practice so much. So having it preserved was important. And having special trip to make the book to put their story in was important. I valued it more too."*

[3] Student names have been changed throughout the report.

Teacher Reflections on Applying the Process to Non-Fiction Writing

Later in the year, teachers intentionally applied the oral story creation process they had learned with the artist to the writing of a research report about an animal. They felt that the artist's process of drawing a picture for each step in an oral story would be helpful for students' non-fiction report writing as well. The different information sources for a story versus a non-fiction report based on research seemed to limit the utility of the process in the new situation. One teacher noted that students had trouble understanding this difference:

> *"The pictures for the* [artist name] *story were fictional, came from students themselves versus the pictures for the animal paper had to be factual. With* [artist name] *stories, the drawings could be any way because it was their imagination and this project it had to be true to the facts and not where their mind pictured the duck to live. And that difference was hard for some kids."*

The teacher also noted that it was easier for students to add more detail to their written fictional stories than to the non-fiction report because the details had already been developed in the fictional oral story they created.

In contrast, one teacher noted that the pictures seemed to help students organize their non-fiction writing. As the teacher and the evaluators reviewed the work of a few students, it became apparent that the pictures also helped kids organize their writing. The teacher remarked, *"They had to say everything they wanted to say about one photo in a paragraph; they couldn't wander around and drop in more on babies later, for example."* The picture seemed to give students their topic for each paragraph and helped make it clear that only in that paragraph would they discuss a particular topic. The same teacher thought students understood the connection from the story to the animal report. She said they hope that by repeating strategies like this, it will help ingrain those strategies as a tool students can use for other writing through the years.

Teacher Change

Both teachers articulated multiple ways that their teaching had benefited from the AAA project. For example,

- One teacher noted that a student she didn't think would be able to create and tell an oral story was able to do so.

- Both teachers noted that some students were slowed down by having to write their story versus tell it. In other words, they recognized that some students "may have stories in them" but they may have difficulty expressing them if their only option is a written format.

- The teachers thought it was helpful to have students draw the parts of the story before they began to write; so in a later assignment to research and write a report about an animal, the teachers asked students to draw pictures based on their research before they began to write. The teachers intentionally tried to use parts of the artist's process in having students write down their oral stories and later in preparing their non-fiction reports.

- As one teacher concluded, *"This is an uncommon way to start writing. It hasn't hurt anybody and if it helps some kids, why don't we do it more? We teach five ways to do math. They don't all learn the same way; we have to find other teaching strategies. They'll get the other ways again and again because that's how it's been commonly taught. But if we do this several times during the year maybe they can have a tool that they can use when they're asked to write in the future."*

Sanford Middle School

At Sanford Middle School the sixth grade mathematics teacher worked with a theater artist to help students visualize story problems about area and perimeter and overcome their general fear of solving mathematics problems through the creation and performance of brief skits. The teacher and artist had worked together during the previous year and they noticed that some students struggled with mathematics problems and often gave up without even trying. They wanted to give students a strategy for visualizing math story problems and they hoped students would use this strategy any time they encountered a difficult math problem. They also wanted students to become aware of what goes on in their brain when they encounter a mathematics problem and give them strategies for not giving up. The project addressed mathematics standards, and was not intended to teach theater standards.

The teacher reported having completed a total of six hours of planning with the artist. The artist was in the classroom with students for seven hours – one hour a day over five days and then back for two more days before the *Minnesota Comprehensive Assessment (MCA)* in mathematics. The artist worked with students in all sections of the teacher's course.

Students' Non-Arts Learning

In her final reflection report to AAA the teacher said,

- *"A team of students were able to create and perform skits that accurately represented story problems concerning area and perimeter so the audience of other students was able to write a formula and solve for an answer. All students, with the exception of two students, increased the number of correct answers on the post-test compared to the pre-test. The learning strategies transferred to taking the MCA test."*

- *"I was pleased to see so many students using their formula sheets accurately throughout the unit, as well as during the MCA test."*

In an interview with the evaluators, the teacher noted that when the skits were completed and she turned to the textbook to begin the unit, the students didn't realize how much they had learned [about area and perimeter] by doing the skits. She also noticed how easily students started using the vocabulary of area and perimeter. She really liked having the artist there at the start of the unit because then both the students and the artist understood the math terms and started talking in the math vocabulary.

The teacher also noted students became more intentional and less passive when taking math tests. As she described,

- *"Also on the test, I'm comparing it to my 8th graders. The thing we tell them to do first off is take the formula sheet out but some leave it in their test books. Whereas this time, even before I said to do it, all the kids tore the formula sheet out. That pleased me."*

The teacher was disappointed with students' performance on the standardized mathematics test, however. She said that in order to pass the *MCA* students need 75% correct, but only about 50% of the students got that. She noted that she had kept her focus on the *MCA* all year so she was disappointed that scores weren't better.

Students' Arts Learning

The teacher noted that the skits were creative. When asked how they were creative, she explained,

- *"One group had a garage and they wanted magnets to cover one wall so the limo would stick to the wall. At one point in their skit they stopped and said, 'To be continued; now solve the problem.' Then, they finished up the skit by parking the limo in the garage."*

- *"One group did a dance studio and they needed to measure a mirror for one wall. In their skit they walked over to the wall and did some stretches and ballet moves."*

In her final reflection submitted to AAA staff, the artist wrote the following about skits students developed to explain what happens in their brains when they encounter a mathematics test, *"Students created superb skits that represented the 'no' and 'yes' brain during a test. When students took the post-test I am told that there was little to no moaning and groaning, as there was during the pre-test. Perhaps they made steps to overcoming 'math fear.'"*

It is important to note once again that the project didn't aim to increase student learning in theater. As the artist said, *"We weren't concentrating on theatrical values in the skits, but it was a way to get things physicalized and get the students up and out of their chairs. I think there was pretty good success in them grasping how to do it [the skit] and doing it from problem to problem."* When the interviewer asked the artist to say more about what she means when she says they weren't concentrating on theatrical values she replied, *"I wasn't giving them theatrical goals like character or staging or blocking. Some students have a natural affinity; some just stood and said a few words. The theater is a tool to get at something else."*

Other Student Benefits

Students benefited from the AAA project in other ways as well.

<u>Risk-Taking:</u>

The artist noted students taking risks and gaining courage from each other. *"The energy would start to pick up as the students talked about their plans. Someone would take a chance with an outrageous room and someone else would then be energized to create or talk about an outrageous room themselves. I saw quite a few get more nerve about what they would do in skits. I saw leaders emerge. At first it's only the real extroverts and the kids who are used to moving around and others just stand around and look nervous. But*

once you see some skits it becomes easier for everybody to come up with an action, to come up with a prop from the room, to not be obsessed with will they look silly or will I be laughed at. Things become much looser and creative as we go."

Students' Pride in their Work:
The artist noted that students were proud of the plans for their mansions and rooms. She said, *"They would carry their plans around with them and at the end of class want to show me their plans. This is not a thing they would do* [usually in math class, hang around afterwards and want to talk about their math problem]."

The artist noted how both students and the teacher may benefit from including some theater in mathematics instruction, *"I hear this a lot, that teachers see students in a different way. The skills in the classroom are really focused on the academic world and kids who are good in theater have been misbehaving and, then you do some theater and all of a sudden they get to be a big deal."* She goes on to describe an example, *"Another student demonstrated he could not only act brilliantly but direct a group and stage a skit and keep them on task. And he was another who wasn't participating in any other way in the school. And his work for me was brilliant. He was not only keeping a group together and leading it and coming up with most of skit content and keeping people happy enough to keep doing it. And then he became his own kind of cult leader because everyone knew his skits were best. The other students wanted to be in his group because they knew the skit would be good."*

In sum, the artist noted, *"It's a chance to reach kids who aren't being reached by anything else. I noticed a lot of increase in their willingness to engage with the math. I saw some of them who had been reluctant, then start to grapple with 'How do you solve this thing?'"* The artist noted how the opportunity for students to create their own mansion and room, and the lack of judgment, seemed to energize many students.

Marcy Open School

At Marcy Open School two classroom teachers, one in a $4^{th}/5^{th}$ split and another in a $5^{th}/6^{th}$ split, worked with an artist from the Neighborhood Bridges program of the Children's Theatre Company. Neighborhood Bridges (Bridges) was developed to help students do the following:

- develop their abilities to write, speak, and think clearly;
- recognize their capacity to become storytellers of their own lives;
- achieve state and national standards for theater; and
- improve their achievement in reading and writing.

Bridges consists of 31 two-hour classroom sessions, one session per week. At Marcy School, each teacher teaches Bridges in her classroom without the artist on alternating weeks; both teachers have worked with Bridges for several years. The artist had 31 hours of planning with the teachers, one hour of planning for each two-hour classroom session.

Given the length of the program (over most of the school year) there was more opportunity in this project than the other two to collect information about student learning. A sample of five students was interviewed, in addition to the interviews with teachers and artist. The artist also made student surveys available that had been administered as part of the program.

Students' Non-Arts and Arts Learning

Although theater is part of the Minnesota Academic Standards in Fine Arts, in Neighborhood Bridges it is so closely linked with storytelling and speaking, which are part of the English Language Arts Standards, that it is difficult to disaggregate this data. Therefore, comments about acting will be included with speaking and oral storytelling in this analysis, even though acting is part of the Academic Standards in Fine Arts rather than the English Language Arts standards.

The teachers and the artist remarked on students' learning in acting, storytelling, and speaking almost as often as in the area of writing:

Acting, Speaking, Storytelling:

- *"He grew in his ability as a storyteller. When we gave him specific feedback he was able to incorporate it into his story."*
- *"Students developed a sense of timing. They were able to project their voice and be confident physically while speaking or acting."*
- *"A sense of telling the story together rather than as individuals, students being full participants in the play, really reacting to things that were happening."*
- *"An English Language Learning (ELL) student went from following the conversations to leading activities and practically being the star of the play. She had great comic timing and had mastered getting her face and body 'into character.'"*
- *"[Student name] has the natural ability to be physically expressive, but she grew in being able to repeat it. That's the trick of theater; you have to repeat it and mark it and set it."*

Writing:

- *"Students learn how to develop a story in their writing."*
- *"Students realize they have important things to write about and they become more comfortable revealing themselves in their writing."*
- *"The amount of writing increased and the content improved. For example, one student went from three-quarters of a page and a weak story to 2, 3, 4 page stories that made sense. Most students as 4th graders think of stories as a paragraph – five sentences – but many of my kids are writing chapter books right now."*

- *"Some students are writing more but still need to work on their clarity."*

Students most often described learning related to acting and speaking, followed by learning related to writing. Details appear below.

Acting, Speaking, Storytelling

- *"I learned how to stay in the middle of the stage, not go off to the sides and act."*

- *"Speak really clearly and loudly and project to the audience."*

- *"Using descriptive words, making it funny, stuff like that."*
  Question from interviewer: What kinds of things have you learned about how to make it funny?
  "Add it from multiple perspectives, like different people's perspectives; it will make it a bit more funny."

- *"I had put about a fourth of a sentence [written in Bridges notebook] and then I was chosen to go up and tell a story and basically I improvised the whole story."*

Writing

Students noted that they wrote more easily and wrote more. For example,

- *"A couple years ago I really hated writing. I couldn't, I wouldn't, I hated it a lot. And now, I don't like it that much still, but I can, I'll write and I can write longer stories now than I used to."*

- Question from interviewer: Do you write on your own ever, outside of school?
  "Sometimes, if I have nothing else to do."

Others noted an increase in their creativity in writing. For example,

- *"I write more. I write more creatively; not just 'She walked to the store' like 'She walked to the store, it was a pretty long walk and she got a bag of goldfish.' Something like that; more detail, longer."*

- Another student said Bridges had influenced writing she did outside of school – *"some little stories and stuff."* She said Bridges helped her include different characters in her stories and better lines for the characters. Students noted differences in the writing they do in Bridges and other writing in the classroom.

Other Student Benefits

The teachers and the artist described additional benefits to students beyond non-arts and arts learning.

They provided examples of how Bridges had helped some students take risks and develop confidence. For example, the artist recalled about one student,

- *"She made a brave choice to go down on her knees one day; she pushed the choices beyond the safe choices. In a story her character was angry and instead of just raising her hands above her head she fell to her knees. It was very powerful."* A teacher remarked, *"Susan usually put her head down when she spoke, but she was able to say the last line of the play in the class's spring performance. Jackie never wanted to share during the year, but she did share a family recipe aloud at the end of the year during the unit on family stories. She had noted on her evaluation that she's not naturally comfortable talking in class."*

Working collaboratively with peers is a major emphasis in Neighborhood Bridges and the artist and teachers noted gains in this area. A teacher described one small group's struggle to work together:

- *"Elise and Frank both want to be in charge and they fight about it. They had to work on recognizing that if you're going to argue your play group is losing its rehearsal time. It took weeks and tears for them to get that. You can only intervene so much; they need to be one of the skit groups whose skit flops and then they understand. One day instead of performing, each group had to stand up and say what could be better. Frank was perceptive about group dynamics. He said, 'We have to listen and hear; we can't just say our ideas.'"*

The teachers and artist also noted the benefits of Bridges for ELL students:

- *"So much is told in intonation, which words you draw out. They're really getting the emotional energy of the story as the words come out. It cues students to which words are important and their meaning."*

- *"All cultures have stories, so maybe it levels the playing field. It's something they all have in common."*

Data from the student interviews indicate that, along with the development of skills and understanding in non-arts and theater, students recognize growth in their confidence acting or speaking in front of their peers. One student remarked, *"I learned to work together more and share ideas. There's no wrong idea so you can share whatever you want."* Another said that although it was tough to work together with *"kids that you hardly even know,"* he thought *"actually that really pulled our class together."* One student noted that she likes working in small groups and thus Bridges provided an opportunity to learn the way she likes.

- *"I actually love working in small groups instead of being independent. I don't know why. I always have. I enjoy being with my friends and stuff and it's fun picking who's gonna be what and telling the story."*

Additional illustrative comments about growth in confidence are as follows:

- *"You stand up and tell a story that you write. I've done it a couple times and you get nervous before cause you think people might not like it, but then when you start telling it gets easier."*

- *"I usually don't talk much and it helps me speak up more. It was comfortable to speak up, even when I wasn't in Bridges class*."

Teacher Change

In this project at Marcy Open School, the concept of teacher-artist collaboration and co-teaching is somewhat different than in many other AAA projects because an expectation of the Bridges partnership is that the teachers will provide instruction in Bridges alone, without the artist present, on alternating weeks. In teaching the program on alternating weeks, the teachers are developing and demonstrating their skill in the program's strategies.

Lyndale Community School

At Lyndale Community School the visual arts specialist teacher worked with a visual and media artist on a project, where the goal was to help students better understand the components of non-fiction materials. Each student created their own non-fiction book that incorporated writing, drawing, and digital photography along with the common structures of non-fiction books such as an index, a table of contents, and chapters. The team chose "My Hands" as the topic for the books because they felt students' interest in their hands would serve as a motivator. The student learning goals developed by the Lyndale AAA team were:

- Students will think and communicate orally with clarity and precision.

- Students will think and communicate in writing with clarity and precision.

- Students will understand the structure/components of non-fiction.

- Students will understand how to use non-fiction as a resource for their lifelong learning.

The arts specialist, the artist, and one of the 2nd grade teachers, who was also an AAA site co-coordinator, met for a total of seven hours to plan the project. The project included students from 5 classrooms, which spanned 2nd - 4th grades. The artist spent eight hours with each classroom of students over a period of several months during their regularly scheduled time with the arts specialist.

The artist taught students about their hands, such as the names and functions for parts of their hands, and asked them to explore the many things their hands do. He also helped students make observational drawings and digital photographs of their hands. Classroom teachers helped students with the writing for their books as part of their regular writing instruction. The role of the classroom teachers in this project was distinctive because they did not work directly with the artist as is typical of AAA projects. Instead, students took a folder back and forth between art class and their regular classroom instruction so that

classroom teachers could work with students on incorporating the vocabulary they had learned with the artist into their writing done during classroom instruction. The teachers also provided instruction on the components of non-fiction books and how to use them. This was also addressed by the media specialist.

Students' Non-Arts and Arts Learning

To measure change in students' ability to communicate in writing with clarity and precision, teachers and evaluators compared writing samples that students had prepared at the start of the project with samples from the end of the project[4]. Samples from both time points were available for 22 third grade students.

The writing samples from the end of the project showed that students were able to communicate in writing with clarity and precision. The samples indicated that students understood the meaning of many vocabulary words and could demonstrate that understanding in their writing. Because the list of vocabulary words didn't exist when the first writing sample was done, caution is needed before concluding that this is a pre-post measure of growth in students' ability to communicate in writing. The data collection did not include a measurement of growth in students' skills in drawing or photography.

Other Student Benefits

The AAA site co-coordinator, whose 2nd grade students were involved in the project noted that students wouldn't have learned as much about their hands if they hadn't worked with the artist. She said, *"They may have spent a day or two on the topic, but with him the students focused for an extended period of time on learning about their hands."*

Teacher Change

The arts specialist teacher noted that taking on the interdisciplinary instruction with the artist during students' visual arts' class time helped her learn what is age appropriate in terms of teaching vocabulary, and in having students do journals and other writing.

Any effect on the classroom teachers is unknown because, given their limited role in the project, they were not included in the evaluation interviews.

Findings from Design B: Standardized Achievement Measures

This section summarizes results from school year 2004-2005 that examined the relationship between arts-integrated instruction and student learning as indicated by standardized tests in reading for grades K-8. Although AAA projects target curriculum areas beyond reading, this portion of the study is limited by the availability of standardized test data, which is available only in reading and mathematics. A decision was made to focus the study on student achievement in reading because a greater number of AAA projects target reading instruction than mathematics instruction.

[4] The evaluators, the arts specialist teacher, the 2nd grade teacher who was also an AAA site co-coordinator, and a teacher on special assignment who is a member of the AAA program staff met to compare the writing samples.

Arts Integration and Reading Achievement

Overall, the current results provide mixed evidence for a relationship between arts-integrated instruction and reading achievement. The analyses indicate that for grades 3 and 4 there is a statistically significant positive relationship between the overall level of arts integration reported by teachers and growth in students' reading achievement (from spring 2004 to spring 2005) as measured by the *Northwest Achievement Levels Test* (*NALT)* in reading. The more that teachers report they integrate the arts into their lessons to improve reading skills, the higher their students' growth scores on the reading test.

In contrast, the analyses of the 5th grade data show a statistically significant negative relationship between arts-integrated instruction and growth in reading achievement as measured by the *NALT* reading test. The more teachers report that they integrate the arts into their lessons to improve reading skills, the lower their students' growth scores on the reading test. There is also a negative relationship in kindergarten between arts-integrated instruction and growth (from fall 2004 to spring 2005) on the *Total Literacy Scale of the Kindergarten Assessments*.

The study also includes analyses based on achievement measures for which data is available from one point in time, spring 2005. When interpreting these results it is important to remember that students' achievement levels before they received arts-integrated instruction may have been significantly different. If students of teachers who frequently integrated the arts had higher achievement levels to begin with, then the analyses may overestimate the positive relationship between achievement and arts integration. Conversely, if students of teachers who frequently integrated the arts had lower achievement levels to begin with, then the analyses may underestimate the relationship.

The analyses indicate there is a statistically significant positive relationship between arts-integrated instruction and 7th grade students' scores on the *MCA* (*Minnesota Comprehensive Assessment)* in reading. There is also a statistically significant positive relationship between 8th grade students' scores on the *MBST (Minnesota Basic Skills Test)* in reading. The relationship between arts-integrated instruction and reading achievement did not reach a level of statistical significance for students in grades 1, 2, or 6.

Arts Integration and Reading Achievement for At-risk Students

Results of analyses that compared the relationship between arts integration and reading achievement among student subgroups also show mixed results. In some cases a negative relationship is more moderate among a subgroup, such as students of color, than among another group (e.g., White students). In other cases, the relationship is positive for a subgroup, such as students eligible for the free- and reduced-price lunch program, and negative for others (e.g., students not eligible for the lunch program). These inconsistencies make it difficult to synthesize the results and identify implications for future programming. However, further study may illuminate characteristics of arts integration and partnering that are especially helpful for the students whom many teachers are challenged to reach.

Findings from Design C: Perspectives of Teachers, Artists, and Students

AAA Project Characteristics in General

Selection of the Artist and Planning

Teachers selected their artist with the help of the on-site AAA coordinator, although in a few cases, teachers drew on their past experiences with artists to select an artist with whom to work. Teachers typically met two or three times with the artist prior to the initiation of the classroom instruction. Planning meetings usually included the team of teachers participating in AAA at the school, the AAA school-based coordinator, the artist, and the AAA coach. Early in the project this planning time included a discussion of teachers' goals for the project, as well as deciding on a focus such as literacy, selecting a topic such as habitats, or selecting texts to use in the project, based on the curriculum being taught.

Much of the planning time later in the project happened between the artist and an individual teacher "touching base" about how class was going. Sometimes teachers asked the artist to include specific types of content, and sometimes the artist asked the teacher to distribute or collect certain materials for the art project. Teachers often accomplished these things between artist visits, so that the art project continued to progress even when the artist was not present. One artist said, *"we were bouncing ideas off each other about the direction and where we were going."*

Number of Students Involved

AAA projects took different forms in all the schools, and the number of students involved varied correspondingly. In some schools an individual teacher responsible for a specific discipline such as English language arts or science, or an ELL specialist conducted an AAA project with one or more of their course sections. In some of the elementary schools, all teachers across a grade level participated. The number of students participating per school varied from 22 to 200, with the average being around 75.

Art Integration Projects

Teachers were asked to describe the arts-integrated projects that took place in their classrooms. The most time intensive project involved the artist visiting the classroom 3 times a week for 8 weeks. Typically, artists visited classrooms to conduct the arts-integrated instruction once or twice a week for four to eight weeks.

A typical artist visit to the classroom started with the teacher leading a discussion about a given content topic or concept, such as shadows, environment, or Jack and the Beanstalk. The artist then led the class in an activity incorporating an art practice such as puppetry, drawing, dance, or stop-motion animated filmmaking. A common thread in all projects was the introduction of a medium that was not usually used in the classroom.

A trusting relationship between teacher and artist seemed to be an important factor in a positive outcome for the arts-integrated project. A teacher explained, *"because I've worked*

with her, I trust her ideas and we've always been able to bounce things off of each other, things have always worked out OK."

Teacher Role in Classroom Instruction

The teacher's role in the instruction when the artist was in the classroom was primarily to observe and learn strategies for integrating the arts in their teaching. The aim of the arts projects was that, by the end of the project, teachers would be able to carry out a similar project without the artist present. Besides observing, teachers also assisted the artist where necessary. One teacher explained, *"I was pretty much reinforcing what everyone else was doing."* Teachers helped with behavior management. Teachers did not report much co-teaching. Teachers instead backed up the artist by making sure students (in small groups or whole class) were participating. One artist mentioned that the teacher modeled how to do something in class, and another artist noted that the teacher's enthusiasm was a catalyst for the children's engagement.

As noted earlier, teachers often moved the project forward in between artist's visits by working with students on portions of the project that didn't necessarily require the artist to be present.

Student Benefits

Teacher expectations of student benefits

Most teachers interviewed anticipated that the AAA project would yield non-arts benefits for their students. For example, one teacher hoped that the project would increase student fluency in reading, and help them to *"really understand the story and context."* Another teacher envisioned that the AAA project would help the students realize science curriculum outcomes, such as describing what a food chain is.

Teachers also had other expectations for the students: A couple teachers hoped the project would be new and novel and noted that less advantaged children need more opportunities for new experiences. Yet another teacher anticipated that the arts-integrated project would instill social skills and abilities for different kinds of self expression.

Teacher views of how students were affected

Teacher views of how students were affected varied somewhat by the art form integrated into the classroom. Where the art project required students to work in groups, such as with drama and video production, teachers reported that students developed teamwork, *"They walked into the room 32 separate people, and by the time they walked out, they were in 10 teams."* In contrast, teachers who worked with visual artists were more likely to say that students learned to express ideas in new, *visual* ways, such as biology students who expressed science themes through collage on the cover of their science notebooks, or elementary students who created clay animation videos to demonstrate their understanding about Martin Luther King, Jr. and his work.

With some benefits of arts integration, however, the art form seemed to matter less than the fact that the integration was occurring at all. Regardless of the art form used in their

classroom, teachers said that the AAA project introduced something new and different into the class, and this novelty helped capture the students' attention. It also broadened students' perspectives; as one teacher put it, *"ninth graders have such a small world view – me, myself, and I. This project opened them to other parts of their world."* Teachers reported that through the AAA project, students developed empathy, perseverance, diligence, patience, and willingness to try new things.

Teachers spoke of the AAA project making the classroom more fun, and the fun leading to greater student engagement. Teachers, regardless of the art form, noted that the AAA projects broadened modes of self expression for students. The greater variety in ways of communicating resulted in more children participating in classroom activities. Students who were typically shy raising their hand in class were able to, for example, dance or manipulate a puppet. Several teachers noted that this diversity of forms of expression was especially beneficial for non-native English speakers, and for students from diverse cultures, noting that these children tended to participate more fully during the arts project. A teacher observed that *"troublemakers … were some of the ones who did the best work; and so they're pulled into it, they're so engaged with what they're doing, it's amazing."*

Teachers also reported that students learned in non-arts areas. One teacher said, *"I see them when we're reading a story and we come to an opposite. I'm not even teaching it to them, and they'll say, 'oh, that's the opposite of down.'"* In this case the students had worked with a theater artist who asked them to act out a song she sang about opposites. In an AAA project incorporating poetry, a teacher remarked, *"we didn't do a lot of pre-teaching about what the poem means…they really came up with some deep interpretations of the poems."*

Artist expectations of student benefits

Several artists anticipated that the art project would develop students' non-arts skills, such as reading comprehension or spelling, and another artist expected that the art project would deepen students' non-arts knowledge. One artist mentioned wanting the children to have fun, and expected that the art project would get them more engaged, explaining, *"the liveliness of movement just adds life so that words come to life in a sense for kids."* Another artist spoke of reaching more children than teaching without the arts integration, because the arts project introduced additional ways of teaching and learning. Several of the artists hoped children would develop fundamental learning skills, or what the AAA program staff call "Habits of Mind", such as discipline and perseverance. One artist hoped that children would learn the technical aspects of a particular art form, in this case, stop frame animation.

Artist views of how students were affected

The evaluators asked artists how they thought the students had in fact been affected by the project, if at all. The artists were limited in their knowledge of the students, by the amount of time they had spent in the classroom. As a result, they deferred to the teachers to answer that question. Artists did note, however, that the students had learned more avenues of expression. The artists also reported that students seemed to learn content more deeply, overcame shyness, learned to work together, and finally, that they had had fun. Several artists observed that students developed pride in their accomplishments in the art projects. One artist reported that some students improved in

their oral reading, and another noticed children with behavior problems developing an interest in reading.

Student views of what they learned

The student reports of what they learned reflected the demystification of the creative process that the artist aimed for. One student put it, *"it was really cool to watch how just itty bitty steps can create a whole film."* Students said they developed skills in research, planning, and using technical equipment such as digital cameras. They learned to write haiku, and recited the rules about syllables per line for that form of poetry. They said they learned to be patient and to persevere. Students reported a sense of accomplishment, and ascribed this partly to the encouragement of the artist: *"If you say, 'I can't do this,' he would push you to keep going and keep working and then you'd be glad you did that 'cause you would feel good about yourself that you actually completed something."* Students did not volunteer that they learned about working in a group, but when pressed about group work, one student remarked that it was "pretty hard." It is important to note here that student views were only collected from twelve students involved in four of the projects (with the exception of one school, where more students participated).

> *"How some poets set up a poem differently and how it doesn't have to rhyme."* – Middle school student
>
> *"To share, to contribute to the group, to like, be responsible and respect other people."* – Elementary student
>
> *"I made something that meant something to me. Shows I'm smart and have an artistic side, too. There hasn't been a lot in my life that I've made and been proud of."* – High school student

Teacher Benefits

Teachers named a variety of ways that they were affected by their participation in AAA. Some teachers developed a new or renewed interest in using art in the classroom. One teacher was reminded of the importance of art in the curriculum, while another said, *"I'm considering doing a doctorate in arts education."* Several teachers valued the technical skills they developed related to the art form used in their AAA project. Other teachers appreciated the "extra hands," and the assistance with teaching and discipline brought by the artist. One teacher appreciated that the AAA project increased opportunities for have informal conversations with students.

Artist views of teacher benefits

The artists' chief hope for teachers was that they would have the capacity to reproduce the art project without the artist present in the future. All artists expressed this wish. A related hope of one artist was that the teacher would *feel* able to carry out the project.

Artists believed that this expectation had come to pass, to some extent. A few artists reported that they thought the teachers had learned some techniques for teaching a non-arts subject through the arts. One artist observed a teacher improve her overall instructional skills, and another said he had been pleased to hear that the teacher had carried out the art project again, later, with a new group of children.

DISCUSSION

This report summarizes results of the first two years of a three-year evaluation of Arts for Academic Achievement. The evaluation plan was developed to answer the following questions:

1. How is implementation of AAA, and arts-integrated instruction in general, related to student learning?

2. Is the relationship between student learning and implementation of AAA, and arts-integrated instruction in general, stronger for various subgroups of students (i.e., students from high poverty homes, students of color, and students in English Language Learners programming)?

3. What do students learn in AAA, and arts-integrated instruction in general, that is not captured by standardized assessments?

Three different evaluation designs were used over the first two years of the study:

A) Alternative Assessment Approaches

B) Standardized Achievement Measures, and

C) Perspectives of Teachers, Artists, and Students.

Overall, the results from the three sets of evaluation data illuminate several aspects of the complex relationship between student achievement and arts-integrated instruction. The results also illustrate the challenges in evaluating the effects of the multi-faceted relationship between teaching and learning in the context of arts-integrated instruction.

Review of Findings

When non-standardized measures of student effects were used to gather information in a sample of projects, the evidence was overwhelmingly positive. The teachers and artists who participated in AAA projects envisioned that students would benefit from the arts-integrated instruction in a wide variety of ways. Teachers and artists reported that many of these benefits came to pass.

The following is a summary of how AAA projects affected students overall:

- Students learned in non-arts areas, both in terms of content and skills.
- Students were more engaged in the instruction during the AAA project.
- Students learned new ways of expressing themselves.
- Students developed empathy, perseverance, diligence, patience, and a willingness to try new things.
- Students who typically participate less than other students were more likely to get involved in the AAA project.
- Students developed pride in themselves and their work.

In addition to information on how AAA projects affected students, the data drawn from non-standardized measures of student effects also point up some strengths of arts-integrated instruction. For example, the data from the first hand experiences of teachers, artists, and students provide evidence of students' emerging Habits of Mind.

AAA projects can provide students with an opportunity to demonstrate skills or strengths they haven't had a chance to show in the classroom before. As a result, the teacher, the student him/herself, and other students may alter their beliefs about this student's abilities. Given the relationship between teacher expectations and student learning, it may especially benefit students when their teacher develops a more thorough understanding of their capacities.

The projects can offer students an alternative route into the non-arts content of the project and this may make the non-arts subjects more appealing to and approachable for some students. For example, students at Sanford who developed skits that involved the need to measure area and perimeter may have found that portion of their mathematics curriculum more intriguing and useful than they would have by approaching the topic strictly through the textbook.

Arts-integrated instruction may be more likely to motivate students because it offers them a chance to make choices, express part of themselves, and make authentic connections between their lives and the content of the lessons. Arts-integrated instruction isn't the only vehicle for providing students with these opportunities, but they are characteristics often found in arts-integrated instruction that may explain its greater appeal to many students.

Teachers also described constraints they had experienced in integrating the arts. Teachers were able to insert curricular content into the AAA project and thus not lose momentum in their classroom teaching. However, they did feel at times that the narrowly defined expectations for classroom instruction related to attaining higher test scores interfered with the more expansive characteristics of the teaching within the AAA project. Teachers

explained that they felt district pressure to emphasize non-arts at the exclusion of other things. A teacher noted that when district people come in to the classroom to observe, they are not looking for arts-integrated instruction, but rather "drill and kill," with a strict focus on math and reading. This teacher explained, *"I don't see that the arts are valued."* Another teacher said, *"Integrating the arts is not one of the things they are looking for."* A third teacher noted that a reading grant cramped the scheduling for the AAA project; *"There are only so many things that you can and cannot do during that block of time."*

The data contained in this evaluation report portray student learning and teacher experiences in a sample of AAA projects. These effects are not quantified and should not be understood as representative of all AAA projects. Still, these benefits to students participating in AAA projects can be viewed as outcomes of such projects.

When standardized measures were used to examine the relationship between reading achievement and arts-integrated instruction in reading across 27 K-8 AAA schools in 2004-2005, the results were mixed. The data provided evidence for a significant positive relationship in four different grade levels. A positive relationship means that the more frequently the teachers reported that they integrated the arts into lessons to improve students' reading skills, the more their students' tests scores increased from year to year, or the better their students performed on a single test given once a year. Significant positive outcomes are noted for the following achievement measures and grade levels:

- The change in 3rd and 4th grade students' scores on the NALT reading test from spring 2004 to spring 2005.
- 7th grade students' scores on the MCA reading test in spring 2005.
- 8th grade students' scores on the MBST in reading in spring 2005.

At the same time, there was evidence of a significant negative relationship in two grades. A negative relationship means that when teachers reported a greater frequency of integrating the arts into lessons to improve students' reading skills, the less their students' test scores increased from year to year. The significant negative relationships occurred as follows:

- The change in kindergarten students' scores on the Total Literacy Scale of the Kindergarten Assessments from fall 2004 to spring 2005.
- The change in 5th grade students' scores on the NALT reading test from spring 2004 to spring 2005.

Results from analyses of the relationship between reading achievement and arts-integrated instruction in reading among subgroups of students were also mixed. In some cases the negative relationship was not as strong among a subgroup, such as students of color, than among another group (e.g., White students). In other cases, the relationship is positive for a subgroup, such as students eligible for the free- and reduced-price lunch program, and negative for others (e.g., students not eligible for the lunch program).

It is challenging to draw implications for future programming from a complex set of findings such as these. In addition to considerations of the evaluation data themselves, it is important to consider other factors that might have influenced the results. The next section describes factors that may help explain the mixed findings from Design B, which was employed during 2004-2005.

Potential Explanatory Factors

Program Design and Implementation Factors

During the 2004-2005 school year AAA funded 126 projects in grades ranging from K-8. AAA program staff report that students were actively engaged in the arts-integrated lessons; yet the outcome results of the present study are inconclusive. A number of factors related to the nature of the AAA program help to explicate the ambiguous outcome findings.

Implementation Strategies

The broad definition of arts-integrated instruction in Arts for Academic Achievement and the wide variety of projects that are implemented may, in part, explain the inconsistent results. As noted earlier, AAA is not intended to be a unitary, pre-determined intervention. Rather, it is created from the ground up by teachers and artists within each AAA project. AAA program staff do not specify a curriculum or model for teacher-artist collaboration, or a set of instructional strategies to be implemented, nor do they stipulate which arts and non-arts disciplines should be included in a project. Teams are required to link their goals for student learning to their school improvement plans, but within each school's general goals the focus of a given AAA project is determined by the data driven needs identified by the school's teachers. As a result, the AAA projects that are implemented vary widely. In other words, not all students receive the same intervention, even within the same school or in classrooms at the same grade level across the schools.

Some projects may be more closely linked to the skills measured on the standardized reading tests and therefore are more likely to affect student achievement on those tests than other projects that are not closely connected to the test content. Also, some projects may be more effective than others in providing teachers with strategies they can continue to use when their AAA project is completed. Because the immediate student learning goals and the instructional activities of the various AAA projects are so project-specific, it has not been possible to identify measurable criteria for quality arts-integrated instruction. As a result, in the analyses of the achievement data all projects are treated equally regardless of characteristics of such quality, such as how well the instruction is aligned with the project's learning goals and the school improvement goal the project seeks to address. It's highly likely, then, that instances of effective practice are obscured when data from so many diverse projects are merged.

Alignment of Project Outcomes and Standardized Measures

Projects may be successful in meeting the desired results of student learning that each project team is asked to identify in their planning process and yet, there still may not be a visible effect on the standardized reading tests used as indicators of student learning in this study. This could be due to several factors. AAA teams are not required to align their projects to a standardized test, and even when teams do so, the project may address just a

small part of what is tested. If an AAA project addresses only a small piece of the reading curriculum, and if different AAA projects address different small pieces of the reading curriculum, a relationship to reading achievement may not be evident, even on the strand scores of the *NALT*. When all the projects are combined in the analysis the projects that did focus on, say, literal comprehension, may get diluted by the projects focused elsewhere. Moreover, many of the AAA projects did not target the outcomes under study. Fifty-four percent of the kindergarten projects and 47% of the fifth grade projects focused on reading, writing, or literacy. This suggests that the student learning targeted in the AAA projects wasn't aligned with the indicator of achievement used in the study: the standardized reading tests.

Teacher Professional Development

Arts for Academic Achievement offers teachers several forms of professional development, but the primary source is the interaction between the teacher and the artist as they develop and deliver a series of arts-integrated lessons. A key assumption of AAA is that, by working with an artist, teachers will learn new strategies they can continue to use in the classroom even after the partnership has ended. Given the small number of hours most artists are in the classroom with students, the teacher's ability to learn new skills and apply them beyond the scope of the partnership is limited as a potential ingredient to expanding the reach of the partnership. The amount of teacher-artist interaction, the primary source of professional development for teachers, simply may not be sufficient to transform teaching practice.

Teachers were also offered professional development outside of their work with the artists, but because participation in such opportunities was voluntary, and it often occurred after school, there was no consistent training that all teachers received. The AAA coordinator at each funded school was asked to attend eight hours of Critical Friends study group meetings. They were encouraged to bring another teacher to each meeting and it was hoped that when each school hosted a meeting, which were rotated among the group members' schools, all AAA teachers from a given AAA project at that school would attend. However, not all projects were featured in a Critical Friends meeting.

District Context Factors

During the 2004-2005 program year, Minneapolis Public Schools experienced a number of changes and pressures which doubtless affected AAA teams and their efforts. There was the hiring of a new superintendent which was accompanied by a period of administrative and programmatic change that teachers and AAA program staff believe may have delayed or even diluted AAA program implementation.

Budget Cuts and Teacher Mobility

Like most, if not all, urban school districts, Minneapolis Public Schools endured tight budgets during 2004-2005. Reduced funding resulted in teacher realignment, which meant that some teams of teachers that had worked together on AAA in the past were disbanded. The knowledge base of how to work with artists and integrate the arts may have been diminished or even lost in many buildings. Also as a result of funding cuts, the AAA program lost some experienced coordinators.

Teacher mobility also created a related complication: A teacher who was previously actively involved in AAA may now be working in a new school and not receiving funding for work with an artist. Such teachers would be classified accurately on the survey as having little or no participation with an artist during 2004-2005, yet those same teachers may be integrating the arts in their classes based on experiences with an artist in previous years. Although the teacher's capacity to carry over skills from one year to the next is an asset to the program, it makes it difficult to isolate how working with an artist might affect student achievement in a given year or in subsequent years.

Federal Accountability Legislation

The Federal legislation of "No Child Left Behind" has created a focus on achievement in reading and mathematics, and the sanctions for schools not making adequate yearly progress have led many principals to limit or eliminate the teaching of subjects other than reading and mathematics. Some principals even specify that arts integration cannot occur during the reading instructional block. The emphasis on reading and mathematics over other curricula means that teachers have less room in their day for arts integration, not only with an artist during an AAA project but also to continue using any of the strategies on their own after the project ends.

Other District- or School-Level Initiatives

Several AAA schools are involved in a major district-wide initiative to improve reading instruction and student reading achievement which is not related to AAA. Thus in analyzing and comparing student achievement outcomes, the influence of AAA on these may be small or get lost in the other program's analysis. Also, some teachers felt they couldn't use arts-integrated strategies because it wasn't allowed as part of the reading initiative and instruction was monitored. Because there may be other arts integration initiatives at the school level, such efforts may make it difficult to isolate the AAA program as a "driver" of student achievement outcomes.

Measurement Factors

The inconsistencies in the results, both for subgroups of students and students as a whole, may be due, in part, to several challenges presented when attempting to measure a broadly defined program such as AAA.

Student Achievement Measurement Challenges

The first challenge in an experimental design is to identify an appropriate comparison group of students who were not exposed to AAA or arts-integrated instruction. A comparison group is necessary in order to use statistical tests to determine how much AAA was related to achievement. Simply describing the test results of students whose teachers did an AAA project would not provide sufficient information to determine how strongly AAA is related to achievement. Instead, it is necessary either to compare achievement results for students who received the program and students who didn't, or to compare outcomes among

students who received different amounts of the program (i.e., a "dosage" study). In the context of this study, identifying a "clean" comparison group of students who did not receive arts-integrated instruction is extremely difficult for several reasons:

> 1) Teachers who did not participate in an AAA-funded project, or did not work at an AAA-funded school, may still have had an opportunity to work with an artist because there are multiple sources of funding available in Minneapolis for arts partnerships.
>
> 2) The AAA theory of action assumes that teachers will continue to integrate the arts even after the AAA project has ended in order to improve instructional effectiveness beyond the scope of the AAA project. Therefore, any measure of the implementation of AAA must take into account not only the extent to which a teacher worked with an artist, but also how much the teacher integrated the arts beyond the AAA project itself. The longevity of Arts for Academic Achievement in the district presents additional challenges. Teachers who didn't participate in AAA during the years of the current study may still have provided arts-integrated instruction to their students during that time based on the teachers' earlier involvement in AAA. Hence, information on a teacher's involvement in an AAA project in any given year is not a sufficient indicator of how much the teacher may have integrated the arts during that year.

Teachers' Instruction Measurement Challenges

The scope of AAA involves a large number of teachers. Due to that factor, a written survey was needed to determine how much arts-integrated instruction students received.

The necessity of combining individual teacher's responses within a grade level for each school may have obscured important differences in the level of integration students received. As was noted earlier, in preparation for analysis of the student achievement data, the survey responses of teachers at a grade level within each school were combined to create a single score which was a composite of their survey responses. This single value for each grade level at each school was used in the analysis process. Determining a single score for teachers' amounts of arts integration was necessary because many students in Minneapolis elementary schools receive instruction from not just their homeroom or primary teacher, but from several teachers working at that grade level in their school. It was not possible, in most cases, to link the reading achievement score for each student with individual teachers in the array of teachers each student had. To do so would mean also assessing the percentage of time that each child had with each teacher (in a day, a week or a year), as well as accurately assessing the amount of arts-integrated instruction that each teacher provided.

As a result, the composite survey responses of 3rd grade teachers in school X were placed in the data file of each of school X's 3rd grade students, the composite responses of 3rd grade teachers from school Y were placed in the data file for each of the 3rd grade students at school Y, and so on. The composite teacher responses by school and grade level were then placed in each student's data file of achievement and demographic data. The consideration of aggregating the responses of individual teachers into the responses from a group of

teachers at one grade level, however, reduces the size of the study sample and thereby reduces the statistical power available to detect significant differences.

During the design stage of the evaluation, there was extended discussion with the AAA staff about if or how to quantify the amount of time that teachers integrated the arts. In the end, it was agreed that determining a meaningful scale for teachers of quantifying arts integration, such as percentage of time or number of hours per week, was not feasible.

An additional challenge is that teachers may have interpreted the term *arts integration* differently. Although the survey contained a definition of arts integration, the definition is broad and the primary purpose was to distinguish arts integration from arts education[5]. The definition also does not attempt to distinguish *the quality* of the instruction. As a result, their responses may include well-intended means of arts integration that were not as effective for improving student learning. For example, the instruction reported on the survey may have varied in the strength of the connection between arts and reading skills. In some cases, the connection may not have been sufficiently close to improve students' reading skills as measured by the standardized tests used in these analyses. Because the design of the study did not include a measure of the quality of arts integration, the results of the less effective practices may hide the potential of other more effective ways of integrating the arts into reading instruction. The precision of future analyses could be improved by incorporating an indicator of the quality of the arts-integrated instruction. Third, the drawback of a written survey is its reliance on self-report, which is less accurate than data collected by an outside observer.

What has been learned about student outcomes is descriptive, based on observations and first-hand accounts from teachers, students, and artists. Due to the individual nature of the teacher and artist partnerships this study does not have an experimental design with a treatment group and a randomly assigned control group. All findings are based on the perceptions of participants. Perhaps a final explanation for the challenge of evaluating AAA lies with the nature of art itself. Precision is not a common feature of art, yet it is precision that is needed to measure the inputs of arts integration that produce the quantified outputs of standardized test scores.

CONCLUSIONS AND IMPLICATIONS

Data drawn from the first-hand experiences of teachers, artists, and students presents consistently positive evidence of how arts-integrated instruction affects students. Growth in reading scores was statistically significant and positively related to arts-integrated instruction for two grade levels during 2004-2005. In addition, there was a statistically significant, positive relationship between arts-integrated instruction and 7th and 8th students' scores on state mandated reading tests in spring 2005. These findings should not be

[5] The survey contained the following definitions: *Arts integration* is instruction in which arts-related concepts and activities are infused into one or more academic areas. Some call this arts infusion or education *through* the arts. *Arts education* is instruction in which the arts are treated as a separate discipline. Others may call this education *in* the arts.

overshadowed by the lack of statistically significant findings for some grades and the statistically significant negative relationship between arts integration and achievement shown in two grades

Although a goal of AAA is to improve student achievement in non-arts disciplines, perhaps more weight should be given to findings that were not statistically significant. A non-significant result on a statistical test, as was found for grades 1, 2, and 6, means that students' scores were equal regardless of how much arts-integrated instruction they received. Yet, the students who participated in arts-integrated instruction received an enriched instructional experience.

Several implications arise from considerations discussed in this report which the district and AAA program leaders may wish to consider:

- √ Focus AAA program resources on fewer teacher-artist partnerships and provide more intensive coaching. The ability of teachers to learn new skills and apply them beyond the scope of the artist's time in the classroom is a key ingredient to expanding the reach of the partnership and thereby increasing the potential to improve student learning. To increase the probability that teachers will continue to use effective arts integration strategies beyond the boundaries of the partnership, AAA may need to provide a greater amount of coaching by AAA staff over a longer period of time.

- √ Strengthen the alignment between the learning goals of individual AAA projects and the achievement goals for the overall AAA program. Since one of the program goals is to improve student achievement as measured by standardized test scores, then individual AAA projects must be aligned with the larger program goals. Although projects focused on other areas of the curriculum may benefit students, they may detract from the overall program's influence on standardized test scores.

- √ Individual project outcomes should be better quantified, perhaps by a more rigorous administration and collection of the planning tool currently being used by teachers. This, along with better alignment to the overall program goals could help program staff identify promising arts integration approaches that could be replicated elsewhere in the district.

- √ Develop measurable criteria for the quality of arts-integrated instruction and use this information in analyses of the outcome data.

Possible Next Steps in Evaluation

In order to integrate arts more deeply into their teaching, teachers might benefit from a clearly articulated logic model that spells out the hypothesized (and grounded in existing research) links between the first visit of the artist to the classroom and the child's learning in the arts and non-arts disciplines.

A major expectation in AAA is that through their participation in an AAA project, teachers will have greater capacity to continue using the project's instructional strategies after the

collaboration with the artist has ended. Determining how the integration of arts-infused instruction may persist over several years in a teacher's instructional repertoire may be useful in assessing the truly long-term outcomes of AAA.

If students learn different skills from projects that integrate different art forms, as was described earlier, it will be useful to explicate more of these links. For example, are students more likely to develop certain "Habits of Mind" when involved in a project integrating drama, while other "Habits of Mind" may be gained when the collaborative project involves visual arts?

Challenges to AAA

An important component of accomplishing AAA goals is to spread the nature of the teaching and learning that occurs within the confines of an AAA project to the instruction that takes place beyond it. Financial support is limited, especially because the district wants as many students and teachers as possible to have access to AAA, which spreads available resources more thinly than if they were concentrated in just a few schools.

Another challenge includes prescriptions from the district or the principal on how to teach reading and mathematics and for how long each day, not including any integrated instruction. Overcoming this barrier will require some extended conversations among district administrators, principals, AAA leaders, and teacher representatives about ways to maintain the integrity of the district expectations while addressing the benefits of arts-integrated lessons.