ARTS FOR ACADEMIC ACHIEVEMENT

Models of Implementing Arts for Academic Achievement: Challenging Contemporary Classroom Practice

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PREPARED FOR
The Minneapolis Public Schools

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Executive Summary

The Minneapolis Public Schools' Challenge Grant from the Annenberg Foundation focused on the arts as a means for overall academic improvement. To accomplish this goal, schools were to increase integration of the arts into the core curriculum and develop strong partnerships with artists and arts organizations. The core of the Arts for Academic Achievement (AAA) project was "bottom up" innovation, with the precise nature of the intervention to be defined by the school and the arts partners working together.

Schools were at various levels of experience in working with visiting artists and arts organization partners, and therefore, developed a variety of approaches to implementation. The arts integration models in elementary schools varied by what core curriculum was taught in and through the arts, the number of disciplines (arts and non-arts) involved in the activity, whether the concepts taught during the activity focused on both the arts and non-arts areas, and what roles were played by the classroom teacher and arts partner. The five implementation models we observed are:

- *Residency Model*
- *Elaborated Residency Model*
- *Capacity Building Model*
- *Co-Teaching Model*
- *Concepts Across the Curriculum Model*

For this paper, the "residency" model involves the school or teacher bringing in one or more artists for a period of time to engage students in the resident artist's program. The purpose is usually to give students a wider range of arts experiences than the school staff can provide. The experience does not directly support the curricular goals of other non-arts disciplines.

An "elaborated residency" is fundamentally an arts experience, but this residency is intentionally tied to developing non-arts skills identified by the teachers. The artist is the primary teacher and it is their program, but the teacher is available to assist with carrying out the experience.

The "capacity building" model prepares teachers to use an art form in their own teaching. The artist's role is to instruct teachers, while the teacher participates with the intention of learning the process and products of the art form. Teachers may work alone, directly with the artists, or with colleagues to identify ways to infuse the art form's skills and concepts with non-arts disciplines.

The "co-teaching" model involves teacher-artist pairs integrating concepts from the arts and non-arts disciplines that reinforce each other. At different points, students' experiences may focus more on the art form or on the non-arts subject, while at other times the arts and non-arts instruction appear seamless. The teacher and artist create lessons that guide the artist during sessions that focus on the arts, and clarify what the teacher will do when the artist is not present.

We define the "concepts across the curriculum" model as involving three or more people who select a unit of study in which their disciplines have common concepts. Though teachers and

artists plan together, each discipline instructs students separately using the common concepts. The projects that fit this model involved arts and non-arts teachers employed in the school selecting an art form that would further reinforce the concepts in the unit of study.

Over the three years of the project, schools either increased depth or increased breadth in their use of the arts. Some schools selected a model and worked within the model over the entire funding period. Other schools put their toe in the water of arts integration by starting in a limited way (often with a single unit in an "elaborated residency" program), and adding more teachers, artists, and art forms, expanding to include multiple disciplines, grade levels and arts specialists.

Key conclusions were: (1) The models that we have identified are "real" in that they are derived from observation; (2) The role of arts specialists on the school staff was supported rather than undermined by the presence of outside artists; (3) Partnerships involving a visiting literary or theater artist and the non-arts disciplines of reading and writing proved the easiest to implement, having borders between the disciplines that are less distinguishable; (4) All of the models changed the classroom practice of the regular classroom teacher; and (5)The AAA program was truly a teacher-led initiative whose success was not dependent on active principal involvement.

Introduction to Arts for Academic Achievement

Minneapolis Public Schools (MPS), in partnership with the Perpich Center for Arts Education, received a $3.2 million dollar Challenge Grant from the Annenberg Foundation.[1] Minneapolis Public Schools' proposal focused on the arts as a means for overall academic improvement. To accomplish this goal, schools would increase integration of the arts into the core curriculum and develop strong partnerships with artists and arts organizations. The district's vision was that ultimately every child in the Minneapolis Public Schools would experience and learn from the richness, diversity, and life changing truths that are found in theatre, music, visual arts, and other art forms.

To carry out this initiative, Arts for Academic Achievement (AAA) used a three-part implementation and research structure: 1) school-based projects, 2) district-initiated professional development and technical assistance, and 3) continuous research, assessment, and correction.

This paper focuses on the school-based projects, examining what happened in elementary schools over a three-year implementation period. Our emphasis is on the core objective of the AAA proposal: improving the content and methods of instruction by incorporating the arts in as many classrooms as possible.

The Schools in AAA

Schools applied to become involved in AAA. Forty-six schools applied in the first round during spring 1998; thirty-one schools were accepted. By the end of the project, the goal of involving at least 50 schools was met. During the first year, schools, on being accepted, received $2000 for planning and up to $10,000 for visiting artists (artists not employed by schools as arts specialists), professional development, planning time for arts/staff teams, materials, and other needs.

Schools had to meet several conditions in order to participate. They needed a school team composed at least two teachers, at least one arts partner, a commitment to developing a multiyear plan, and demonstrated willingness to participate in an active program of training and sharing sessions. However, the core of the AAA project was "bottom up" innovation, with the precise nature of the intervention to be defined by the school and the arts partners working together. The project team in the district provided pressure and support, but encouraged variety and imagination. Thus, the type of work the project supported is as varied as the schools and partnerships they represent, and the AAA implementation story is equally complex.

[1] This grant was part of the Annenberg Foundation's $500 million commitment to improving urban and rural public schools.

First Steps

Schools began the AAA project at various levels of experience in working with visiting artists and arts organization partners. In advance, the project defined three developmental stages to help schools assess where they were in their commitment to the arts. Schools in the "exploratory stage" had limited exposure to arts integration, but were beginning to select, choose, and plan active involvement. In the "committed stage," schools were working to integrate arts across curriculum areas and had developed systems and processes for planning more extensive use of community cultural resources. "Deep partnership" schools had developed long-term partnerships with arts organizations, businesses and the community, and had coordinated planning, professional development, assessment, and research. Irrespective of previous experience (some of the funded schools were already arts-rich magnets) the schools faced challenges of trying something new.

Because of the variety of school-based plans—initially great, but increasingly more variable with several years of implementation—we abandoned our initial hope of providing a comprehensive list of "implementation guidelines" derived from studying successful schools. While successful schools—and most were successful to some degree in getting the arts into the core of classroom instruction—had some characteristics in common, when we attended sharing sessions of the school's teacher-coordinators we began to understand that the practical wisdom from the AAA effort could be better focused on helping to define what an arts-integrated school change strategy could look like.

Regularity Within Variability

The primary purpose of this paper is to describe various types of school-based arts integration projects supported by the Arts for Academic Achievement program in elementary schools. The middle and high school projects were insufficient in number to define patterns of implementation at the secondary school level. Only two middle schools, with quite different experiences, were involved in the project for multiple years. Two high schools involved only ninth grade teams in their projects; experiences of the teams from one of these high schools are analyzed in another paper (Freeman & Louis, 2001).

The arts integration models in the elementary schools vary by what core curriculum was taught in and through the arts, the number of disciplines (arts and non-arts) involved in the arts integration activity, whether the concepts taught during the activity focused on both the arts and non-arts areas, and what roles were played by the classroom teacher and arts partner. Some models involved an entire grade level or entire school with the same visiting artist(s) or art form; while others involved one teacher with a visiting artist; or teachers and school arts specialist(s) with visiting artist(s). The implementation models, which will be illustrated with case-rich descriptions, are:

- ***Residency Model***
- ***Elaborated Residency Model***
- ***Capacity Building Model***
- ***Co-Teaching Model***

- ***Concepts Across the Curriculum Model***

While the models are not intended to represent a continuum, they are ordered in a rough sequence based on the degree to which arts and non-arts concepts were integrated. Appendix 1 presents the differences between the models in chart form, while a narrative definition of each appears in the sections below.

The Arts and School Reform

Before defining and describing models of arts integration, we wish to present a justification for the importance of implementing arts integrated classroom practice in urban classrooms. In many schools across the nation, and particularly in urban settings, children often come to school ill prepared to learn (Crosby, 1999), and fall further behind the longer they remain in school (Education Trust, nd). There are many reasons, including parental and community poverty, and teacher burnout (Byrne, 1994). At the center of this lack of student engagement and teacher burnout is a strong need for an approach to teaching and learning that not only engages students in learning, but also teachers in teaching (Louis & Smith, 1990).

Some researchers believe that arts integration, using concepts from an art form to teach overlapping concepts from a non-arts form, might be a way to not only reach low achieving students, but replenish teachers as well (Catterall, 1995; Hanna, 1992a). In the past, theorists such as Dewey (1938) and Gardner (1993) have argued the merits of using an integrated or enriched curriculum because it provides multiple avenues for students to access concepts and connect their learning to multiple areas of the curriculum. Recently, the Cognition and Technology Group at Vanderbilt (1993) asserted that the integrated curricula also provide students with rich experiences that motivate them to learn. For example, they state, "The good news about this approach is that opportunities to explore topics in depth can be more motivating to students and help them learn to think more deeply about issues" (p.34).

Diamond (1988) found that brain enlargement is a result of use and interaction with an "enriched" environment. Diamond asserts that, "The findings of more widespread changes in the brains of enriched rats than those of rats trained to learn a specific task supports the claims of numerous educators, from Dewey on, that providing a large variety of experiences to the growing child enhances intellectual development," (p. 162). Caine and Caine brought these findings to the education community by publishing several articles on brain-based learning (Caine & Caine, 1995; Caine & Caine, 1994; Caine & Caine, 1990). They stated, "In brain-based learning, students use stories and complex themes to link information and understanding" because it allows students to test many of the relationships and ideas they will need outside of school (p. 43, 1995). Teachers, when presented with these ideas, typically respond with "I knew this intuitively" and see it as a justification for good contemporary classroom practice.

The ideas advanced by Diamond have entered the practitioner literature with considerable fanfare. The entire November 1998 issue of *Educational Leadership* was devoted to brain

research as it related to education. The issue covered topics from "What do We Know from Brain Research" (pp.8-14), which outlined the most recent findings in brain research to "Art for the Brain's Sake" (pp.31-36), which advocated the importance of the arts in education. One of the articles ("The Brains Behind the Brain") gave a transcript of interviews with the five most prominent educators and researchers noted for their commentary on brain research: Diamond, Wolfe, Sylvester, Caine, and Jensen. Jensen (1998) maintained, "Students need the arts because they are part of the foundation of learning, part of the developing brain. . . . Math and science tend to be stronger in students who have a music or an arts background" (p.25).

The merits of the argument about whether the arts will raise student achievement in other areas are still debated and will be addressed with data from this project in a forthcoming paper. A primary concern of the project is the intermediate effects of arts-integrated classrooms, e.g., whether teachers' instructional practices change as a consequence of working closely with arts integrated curriculum. The question of whether teachers actually implement changes in practice is a critical one, because the evaluation and school reform literature firmly concludes that, unless programs change the classroom, they will have little long-term effect on students (Newmann & Associates, 1996, Spillane, 1999). The conundrum of how to change practice in many classrooms is further exacerbated by the conclusion that fundamental changes in classrooms are extremely difficult to produce due to the enduring "sameness" of institutionalized educational settings (Sarason, 1996; Rowan & Miskell, 2000). We know that teachers' "mental models" about what constitutes good teaching (Toole, 2001; Louis, Jones, and Anderson, forthcoming) affects the degree to which they accept or embrace any proposed change in classroom practice. Data from this project show that teachers individually and in teams did adopt new approaches – involving the arts – when designing lessons for their students (Werner and Freeman, 2001).

In addition to our interest in change in teaching practice by individuals and teams of teachers, we were also concerned with how schools go about reinforcing non-mandated, bottom-up reforms in many classrooms at once. We know that teachers tend to view their work as largely solitary and intuitive (Lortie, 1975), and that significant changes in practice do not, therefore, spread easily, even within a school. Therefore, in this paper we are primarily concerned with the ways in which different schools developed consensus around strategies for integrating the arts with their non-arts curriculum.

Methodology

This paper is based on data collected over a three-year period during the evaluation of the AAA project. The data include individual teacher interviews, annual group interviews with project teams, classroom observations, observations of project meetings, and individual school's annual reports.[2] Eight schools were studied in depth (case study sites), while the remaining schools participated in the evaluation less intensively. In previous reports we have noted that the implementation patterns varied quite sharply between elementary and secondary schools. In this paper we use data only from 32 elementary schools (including K-8 schools, which are common in Minneapolis) that had been in the project from one to three years as of fall 2001.

[2] The evaluation project also collected survey and student achievement data, but these are not used in this paper.

The research design evolved substantially over the course of the project, based on both the research team's commitment to developing grounded theory that reflected changes in both our own and the schools' understanding of the effort (Glaser & Strauss, 1967), and also on changes in the program's design (Ingram & Louis, 2001).

The complete AAA school team or a representative sub-set of each school team participated in group interviews in the springs of 1999, 2000, and 2001. The teams consisted of teachers, the AAA coordinator, and in some cases visiting artists. The interviewers guided teams in reflection on their implementation processes and asked them to share lessons learned over their years of implementation. All interviews (both group and personal) were recorded and transcribed verbatim. All interviews and annual reports were read by research staff for the overall design of schools' project implementation and for specific examples of arts integration activities. Researchers attended all project meetings, in which representatives from each school met to discuss implementation issues. Research team members also observed most professional development activities during all three years. Extensive interviews and observations were conducted with individual teachers in six of the elementary schools that served as case sites.

The framework for this paper emerged over the course of the qualitative data analysis, which occurred primarily in team meetings with the research staff and exploratory analysis meetings with the project staff from the two funded organizations, the school district and the Perpich Center. As working hypotheses emerged from work in individual schools, they were presented to the group and discussed both in terms of the focal school and other schools. At several points in the project we attempted to classify schools according to different implementation models, but discovered that many schools changed their approach to implementation over time (see Appendices 2a and 2b). Thus, this paper presents a snapshot of how arts integration is working in the Minneapolis Public Schools, but clearly represents a work in progress.

To help explain the variety of ways that teachers have designed arts experiences for students and integrated the arts with other non-arts disciplines, five models of implementation were identified. This paper will define these models and give examples of projects from schools that used the model.

The school names used in this report are pseudonyms. We recognize, however, that most educators in Minneapolis will be able to recognize the schools highlighted in the cases. In order to ensure both accuracy and lack of harm to a school or any individual we have therefore attempted to ensure their accuracy by sharing them with the AAA project staff. It is not possible to hide the identity of the participating arts organizations or artists, since each occupies a unique niche in the city's cultural landscape.

Illustrating the Implementation Models

Each of the five models will be described, and illustrated by one or two cases of schools that represent imaginative use of the model. Additional cases are available in Appendix 3.

Residency Model

The term "residency" is commonly used by teachers and visiting artists to refer to most types of arts experiences provided by a visiting artist, unless it is a one-time performance for an audience. For this paper, a residency will be more narrowly defined as when the school or teacher brings in one or more artists for a period of time to engage students in the resident artist's program. The main purpose is usually to give students a wider range of arts experiences than the school staff can provide. The experience does not directly support the curricular goals of other non-arts disciplines. A number of the project schools had a history with traditional artists-in-residency before this project. Many of these schools continued to have traditional residencies as part of or in addition to their arts integration initiatives. Other schools without prior experiences with arts residencies began their project implementation by arranging for traditional residencies.

Art Adventure in Highland K-8 School. Parents in a number of schools have teamed up with the Minneapolis Arts Institute to go into classrooms with a program called "Art Adventure." The Art Adventure program, which uses a "residency model" with trained parents as the residents, is intended as stand-alone art activity, not intentionally related to any other non-arts discipline. The crux of the program is to have students learn how to view a piece of art.

Parents are taught how to engage the students in really looking at an image and in enjoying it even though it may not have been something they would have been attracted to had they viewed it on their own. Parents bring stories and history behind the artwork, such as how old it is, and who the artist was. Parents and teachers found the discussions lively, thought provoking, and quite deep in many respects, even at the kindergarten level. One parent reported, "Because there isn't a right or a wrong answer, everybody, without being asked, was participating verbally by the end of the month that we were with them."

During the first year, four parent volunteers worked with 125 students in their classrooms, and then worked with the same students on a trip to the Minneapolis Institute of Arts. The majority of the children had had little practice in viewing a piece of art and had never been to the Art Institute. Parents said that teachers were reluctant at first to give the parents time to come into their classrooms. However, teachers were very pleased when they saw how well it worked, and by the third year, there were 24 trained parent volunteers, and all teachers at Highland made time for parents to come in. The experience was also novel for parents because the school did not have a tradition of actively involving parents in classrooms.

Elaborated Residency

A number of schools created residencies to support specific curricular and achievement goal(s), most often in reading and writing, but also in math or science. We call this model of implementation an "elaborated residency." With this model, an artist or group of artists develops program activities (usually in cooperation with a school or schools). Though tied intentionally to other non-arts concepts, the experiences focus on the processes and products of the art form. The artist is the primary teacher during the arts activity though the regular classroom teacher is available to help students or assist with classroom management.

Arts for Students With Reading Deficiencies in East Bend Elementary School. East Bend Elementary directed its AAA project at upper level elementary students scoring below the 50th percentile on the district's standardized reading achievement test. The staff's principle aim was to improve reading comprehension and fluency. The targeted students and their teacher were scheduled into what the school called "Reading Rainbow" for extra assistance in preparing them for the state's reading test. But, instead of going to another reading class, the students were involved in a dramatic theater performance with an artist from the Mixed Blood Theater, a well-established local repertory group.

The artist asked the students to write a play about some of the challenges faced by early adolescents. The project lasted 12-weeks, and consisted of 45 minutes a day, four or five days a week. The artist read a story to them a few times and then started breaking the story down into the basic elements that make a play, including vocabulary and dialogue, set pieces, characters, and props. He asked students to elaborate the characters' objectives and to analyze how the set pieces and the props contributed to these objectives. The students developed a sense of the theater and acting demands, and then rewrote in play form the story line initially read to them.

The teachers said the students were so proud of themselves when they pulled the play together and got it all done. They worked for hours and hours on the script, even though they were "kids that did not enjoy writing." One teacher said,

> The whole idea was to sneak loving to read in the backdoor. Can you imagine these children being told, 'You have to go to reading again at one o'clock!' For the couple of months that the artist was with them, they were going to theater arts.

After working with the artist, the students wanted to act out every book they read in their regular reading class. When they were reading a novel, they acted it out after every so many chapters. When the teacher asked students to write an adventure story, she was surprised that they wrote it in the form of dialogue:

> It was all a script! That's what they were trained to do with the artist…. What's fun for me to see is this turnaround in their attitude about writing and to see how confident they are about reading something in front of their peers and performing in front of a group.

This example fits the elaborated residency model in that the experience was fundamentally an arts experience, but it was intentionally tied to developing non-arts skills in reading and writing. The artist was the primary teacher and it was his program. Though this experience sounds

superficially similar to the previous theater residency, it differed in that the artist and the teacher were consciously developing the students' vocabulary and giving them time to practice writing. The students saw the connection to their regular reading and writing class and wanted to use the techniques there.[3]

Capacity Building Model

The goal of the "capacity building model" is to prepare teachers to use a selected art form in their own teaching, and be able to generalize their initial learning to additional instructional strategies for teaching concepts in other non-arts disciplines. The artist is the primary teacher during the arts activity. The teacher participates with the intention of learning how to carry out the activity without the artist. Initially, the artist may start by having teachers be students of the arts experience, or they may start by working with students while teachers observe and help. In either case, the focus is on the processes and products of the art form. Depending on the arts partner, teachers may work alone, directly with the artists, or with colleagues to identify ways to infuse the art skills and concepts with the disciplines of reading, writing, math, science, and social studies.

School-wide Capacity Building in North City K-8. North City decided to provide all teachers at all grade levels with common experiences in the same art forms. The first year they chose drawing. Planning team members reported that they "shared a common language with which to broaden and deepen their practices of infusing and integrating the arts." One goal of the drawing initiative was to develop agreement among the staff about the importance of visual teaching and learning in achieving academic success for all and to increase skill and confidence in drawing among staff and students. One teacher said, "The power of the model is that it results in deeper insight by all of us in how arts can contribute to whatever it is you are undertaking."

The visual artist taught all teachers and the school's science specialist to do observational drawing. Every teacher had three lessons with the artist. The artist also gave two whole-staff workshops so that all the teachers received the same information. Teams of teachers worked together to plan the particular unit into which they would infuse the drawing. One grade level drew insects. Another drew bones in the hands. As one organizer said, "They all had an opportunity to participate as adult learners, as 'drawers,' as artists, and then to translate what they learned into the kinds of different things they could ask students to do."

There were teachers (and students) who initially felt inadequate in drawing, but by the end of the year all students and teachers were drawing. Part of the teacher workshops with the artists taught teachers how to be drawing coaches to students. Student drawings related to their specific units were displayed in the hallways. There were a series of drawings that older social studies students did of explorers. Younger students used their drawing skills in another unit called "Know

[3] By the third year, the school added a dancer to work with a low-level fifth grade math class. The plans developed by the math and dance teachers added dance to the math and math to the dance. This math-dance project fits the "inter-disciplinary model" discussed later in the paper, and shows how schools often moved from an elaborated residency to closer collaboration between teachers and artists.

Ourselves," which had always involved students doing self-portraits at the beginning of the year and at the end of the year to show how they had changed and grown.

Teachers believed that the use of drawing increased student achievement. After this training, teachers saw a great difference in ability to draw self-portraits and to pay attention. Math teachers said students were much more able to recognize, discuss, and manipulate shapes, and that drawing fit nicely with students' journaling in their math classes. One teacher made the case that drawing developed a habit of attention to detail that is required to develop good reading skills.

Over the three years, drawing was integrated into many school activities. The school's art teacher changed the way she teaches drawing, as have other specialists – the gifted and talented teacher, the science teacher, and the music specialist. The music specialist, when working with Minnesota Sinfonia on fairy tales and the Magic Flute, had the students do drawings to represent particular compositions after they had studied them. Those drawings were used as illustrations on an overhead when the Minnesota Sinfonia played a concert, and then later, those same pieces of work were displayed at St. Mary's Basilica in an art exhibit.

North City K-8's model was "capacity building" in several ways. First, all teachers increased capacity in using the specific art form of drawing to support goals in their regular curriculum. Second, teachers increased their insight into ways the arts can contribute to whatever discipline they might be teaching. Finally, teachers increased their comfort and willingness to try other arts areas they might not have strength in doing—the second year's training in storytelling produced similar participation and enthusiasm.

Co-Teaching Model

The fourth model is the "co-teaching" model, which involves teacher-artist pairs integrating concepts from arts and non-arts disciplines. Several or all of the teachers from a particular grade level or team may work with the same artist, but the artist will engage with each teacher's students separately. The teacher and the artist plan together, select art and non-arts skills or concepts that reinforce each other, and then teach together during the time the artist is working with the students. Arts and non-arts disciplines are usually considered co-equal, though planning may be stimulated by either the artist or the regular classroom teacher—or by both brainstorming the potential for integrating their disciplines. At different points, instruction may focus more on the art form or on the non-arts subject, and sometimes the activities will bring the arts and non-arts disciplines together seamlessly. The collaboration may involve one unit of study for a few days or might involve several units of study throughout a school year.

Co-teaching of the Literary Arts in Frederick Elementary School. From the beginning of the AAA project, teachers in Frederick Elementary chose to work with theater artists to support their goal of teaching students to read, understand, and interpret texts. In particular, they focused on story telling and writing plays in order to develop vocabulary and comprehension. The school started the year with an artist-led workshop that focused on different aspects of the theatre arts: acting; story drama; and making meaning. Each grade level had a theater artist who worked with each teacher for a total of 20 hours spread throughout the school year. Each grade level met

regularly with their artist to plan for the artist's time in the classroom, and each artist-grade level team had a unique focus to its collaboration, from movement and improvisational activities, to story acting and play production. Teachers felt they could better meet their reading goals by integrating the arts component into the reading curriculum. At the end of the first year, the planning committee felt they were at a stage where the reading curriculum and the theater arts activity were starting to work together. One teacher said, "We're not just doing the arts piece and doing the curricular piece, we're really merging the two of them."

The big shift for many teachers—and what distinguishes this activity from the elaborated residency at East Bend Elementary described above— was the level of co-planning and co-production. One teacher said, "The teachers, and the artists also, have to realize that it is not a residency, that it IS an actual integration of the arts into the classroom where we need the cooperation of teacher and artist." The teachers felt that the second and third years of working with artists were much better collaborations because the teachers knew more about how to plan with the artists and could participate more in the artistic activity. Teachers were convinced that infusing theater arts improved reading comprehension. One teacher said,

> A lot of kids struggle…You can re-read it and re-read it and it still doesn't make sense to them. I've discovered if we act it out, we bring the characters out and we say, 'what's going on,' suddenly it all makes sense… They understand not only the story line, but they understand character, and they understand how characters are FEELING in those situations.

Teachers began to experiment with using theaters arts when teaching other content areas, such as social studies and science. The coordinator noted that the arts were so engaging for students that teachers were more likely to use them. She said, "It's not burdensome. It's just the way that they are going to teach a particular unit." One teacher commented,

> It has been incredibly rewarding for me to have a repertoire of activities, of ways of teaching to draw from. Because I've done them together with an artist, I feel so much more comfortable doing them, that they have become mine in the process.

Teachers learned an important lesson about classroom practice, reinforcing the need for students to learn by doing. A teacher who had a difficult special education class, said, "When things aren't going well with kids, I just ask myself, 'What can the kids be DOING right now to get them involved with this lesson?' And that's the art of education—how do we involve the kids in the process."

Dance-math in West Branch Elementary. A community school that had already made a commitment to being "arts-focused" decided that math was the non-arts area that had little arts integration and that dance was the art form that was missing in the school's curriculum. They started with three teacher-dancer partnerships the first year and expanded to six the second year. While the school's initiative was focused in the areas of dance and math, implementation was diverse. With so many teachers (at different grade levels) and five dancers involved, the focus in both dance and math concepts varied widely between classrooms. Partnerships also varied in the emphasis placed on dance standards as opposed to math standards.

During the first year, one teacher-dancer team created several lessons aimed at infusing dance and math, with the emphasis on math. When the same teacher paired with another dancer in the second year, her new partner looked at the lessons and said that they involved movement and not dance. The pair shifted to creating lessons that gave the disciplines equal importance. The dancer spent an hour a week all year with the class, and the teacher and dancer spent an hour a week planning. The teachers taught the math concepts during math class (without the artist), and the dancer's time in the classroom was spent on movement or dance skills designed to reinforce the math concepts being taught during that time.

Over the course of the year, many math concepts were incorporated into dance-math lessons in different classrooms. A few examples are: students being asked to move their body 90 degrees to the right to help understand drawing a 90 degree right angle, students making a shape and having other students dance around the perimeter, students counting by 5's or 2's when counting the beats for their dance phrase, and students creating a three part dance phrase (beginning, middle, and end as in stories) with a specific number of beats in each part and then writing the number model (e.g. 12 + 4 + 8 = 24). One partnership found that hip-hop was very conducive to space and shape, geometry, and angles.

In these two examples of the co-teaching model, the teachers and artists had time to plan together and they taught together while the artist was in the classroom. Co-teachers selected the non-arts and arts skills and concepts they wanted to work on, usually from state standards or other core math concepts, and they created lessons to guide the artist in working with students and to clarify what the teacher would teach before and after the arts integrated lesson. Thus, artists shared an understanding of the instructional objectives in the non-arts discipline. Typically, when the focus was on the non-arts subject, the classroom teacher instructed without the presence of the artist. The teacher and artist co-taught during sessions that focused on the arts concepts.

Many teachers involved in co-teaching teams believed they could transfer what they learned about classroom practice from watching the artists teach to other concepts and disciplines in their curriculum. For example, in the case of dance-math, teachers felt capable of using movement to convey general concepts to students in other subjects, although they would not claim that they were teaching dance.

Concepts Across the Curriculum Model

In our definition, the "concepts across the curriculum model" (CAC) involves three or more people (usually one or more of each of classroom teachers, school arts specialists, and visiting artists) teaching separately. A project that fits this model starts with the team of three or more arts and non-arts teachers selecting a unit of study in which their disciplines have concepts in common. Each discipline instructs the students separately using the common concepts, though other members of the team may be present (especially with the visiting artist) to assist with classroom management or carrying out the lesson. In the AAA project, the CAC team members employed in the school identified an art form not taught in the school that would reinforce the concepts involved in the unit of study, and they brought in a visiting artist.

Clay Boats, Balance, Motion, and the Arts in Jackson Elementary. Jackson Elementary is a community school that is identified as focused on math, science, and technology. It was not surprising, therefore, that their arts integration teams involved not only the teachers at that grade level (who taught both science and math) but also a visiting multi-media artist (who focused here on computer-generated art), and the school's arts specialist. The first grade team began their arts integration planning by making two columns with "science" on one side and "art" on the other. They took some of the math and science terms from the "motion and balance" unit, such as triangle, rhombus, circle, rectangle, square, balance, symmetry, and motion. They talked about how balance in science was like a scale, and balance in art could be either the symmetry of something or an asymmetrical thing that still had balance because of where the objects were placed. All teachers came to understand how other teachers were using a concept in their discipline.

For one example, the computer artist related the science concept of motion to the computer drawing skills he was teaching the students. The students had read a story about meatballs rolling off a table. He taught the students how to illustrate the story. They talked about the art part of illustrating a story, but also the physics, or motion, part of it when the meatball rolled off the table, making a diagram showing how a meatball would roll off the table and fall onto the floor. Concepts of motion and balance were reinforced in physical education, where students learned why football players get down low, why they press their legs in and get symmetrical. In visual arts, the students made patterns to illustrate symmetry and asymmetry. The art teacher said the students made patterns that amazed her. She said, "We have a display on the wall I never want to take down, it was so wonderful."

The formal arts partner, the multi-media (computer) artist who had not worked with first graders before, was "slightly amazed" at how well these first graders picked up relatively difficult concepts. "To see that level of understanding at that age was most impressive." For the students' final product using the computer, they made four drawings for a slide show. Two drawings were on balance and two were on motion. They learned what to do to set up the slides and then record them onto videotape. The multi-media artist said, "It was a marriage of the arts and sciences. These were creative drawings they produced to reflect their understanding of these science concepts." The grade level teachers also related the students' reading and writing activities to the science and math concepts being studied during the time period.

The next year, the project expanded to the second grade team, which decided to use the science unit about clay boats for their arts integration project. The science concepts were height, width, depth, sink, and float. In science, the clay boat unit started with a lump of clay and students were asked to make the clay into some shape that would float. The teachers and students talked about round things that float, flat things that float, and groups of students created shapes and tested them in the water. If the boats sank, students went back to their desks to figure out a different way. Teachers reported that the level of scientific inquiry was excellent because it wasn't that easy for them to get the boat to float initially. They were learning the skills of observation and prediction.

For math, students graphed their data and learned to interpret graphs. This activity also tied into geometric shapes that are part of the math standards – three-dimensional shapes and two-

dimensional shapes. On the computer, students learned Claris Works draw and spreadsheet programs. They used spreadsheets to record and graph their observations of their clay boat experiments. They put the story they wrote onto the computer, learning how to set it up on pages, and later binding their work.

The art teacher focused on drawing two-dimensional and three-dimensional shapes. When the students drew pictures for the story they wrote about boats, the art teacher was surprised at the perspective the students, seven- and eight-year-olds, could show, and how they could portray three-dimensional space, placing themselves in the boat with the boat floating. "Normally," she said, "when kids that age draw boats, they just draw a flat view. They don't draw the inside. They had learned in science that the inside surface had a lot to do with the success they were going to have with the boat floating."

Teachers were convinced that students understood the concepts better because they got excited about the activities, and because they were reinforced throughout the unit. If they were not grasping core concepts in language arts, they were getting them in math. If they were not getting them in math, they were getting them in technology. One outcome from these two units was a plan to create a scope and sequence for development of technology by grade level. Teachers saw what students were capable of doing and how they could grow and build on what they knew from previous years. Teachers felt that they were much better able to meet district standards by working together to reinforce students' understanding of concepts. Now there are arts-integrated units involving several disciplines at every grade level (Derby, 2001).

Implementation Over Time

The examples of the different implementation models discussed above have hinted at the fact that most schools engaged in a learning process that deepened their commitment to arts integrated classroom practice over time. We have not, however, emphasized the developmental process in the models. As we look across the 32 elementary schools involved in AAA we also see two distinct patterns in the process of implementation. Irrespective of the level of knowledge and expertise available in the school when funding was first obtained, schools fell into two general categories: *Increasing depth* or *increasing breadth.*

Increasing depth: Some schools selected a model that felt appropriate to their school, and worked within the model over the entire funding period. Expansion, where it occurred, involved increasing the number of teachers involved, and deepening the relationship between the school and the artist and/or art form. Of the schools described above, East Bend would be a clear example, in which the extended theater residency for low skill readers in the upper elementary grades was tweaked and perfected over the entire three years during which we collected data.

Increasing breadth: Other schools put their toe in the water of arts integration in regular school classrooms by starting in a limited way (often with a single unit in an "elaborated residency" program), and adding not only more teachers but more differentiated activities over the AAA

project's life. New artists and art forms were added, or the initial program was expanded to include multiple disciplines, grade levels, and specialists.

But not attending to the process of implementation makes the outcomes of the AAA project appear too simple—too easy to transfer into a different city or setting. Each school's story is unique. Thus, in order to give a clear flavor of the degree of planning and commitment that are necessary to carry out a change in classroom practice of the magnitude demanded by the project, we will present the stories of two schools—one in each category—in more detail. We have selected these schools based on the availability of longitudinal data over a three year period, their status as schools that were not designated by the district as "arts magnet schools," and the fact that they were relatively successful in embedding significant arts-integrated lessons—e.g., changing standard teaching practices—in a large number of classrooms. Their selection does not reflect any analysis about the impact of their efforts on student achievement, either in the arts discipline or the non-arts discipline.

Going Deeper in the Oak Grove School.

Oak Grove is a K-8 magnet school that focuses on environmental education. Located in a stable residential area of Minneapolis, the school attracts a relatively affluent student body compared to the city as a whole (42% of the students are classified as coming from high poverty homes compared to 67% districtwide). Known as a well-run school that scores much higher than most on both district and state tests,[4] its involvement in the AAA project deepened significantly over the course of its three-year involvement. In the following description we focus on a single grade level in order to develop a coherent story about implementation. By the end of the three-year AAA grant period, all grade levels were engaged in similar experiments with new classroom practice.

The first year in Oak Grove Elementary School, the planning committee brought in artists to work with two grade levels that were willing to be "guinea pigs." The fifth grade project involved the fifth grade science teacher, the music teacher, the art teacher, and a visiting dance artist, creating a team that was maintained across the three years. The team chose to spin their development work off a science unit, "variables," which they felt was a concept found in all the disciplines. Their arts integration goal was to have students learn new science concepts and then transfer their understanding to similar concepts in music, art, and dance. Team members hoped students would be able to recognize the commonalities of the concepts across the disciplines of music, art, dance and science.

The team used several graphic organizers for their own planning and with the students. The first activity was to use a goal-planning sheet to make sure they were all using the same words. They prepared a matrix the students would fill in as they studied the concepts in each discipline. The students were assessed by a rubric and scoring sheet filled in by each of the teachers—in other words, multiple teacher assessments for the same concept. The first year each teacher introduced the concepts individually in each of the two sections of fifth graders.

[4] The district identified it as a "beating the odds" school, whose test scores exceed expectations.

During the second year, based on their positive assessment of their work, the AAA committee aimed even higher. Their proposal to introduce the unit to all students together with all the 5th grade teachers was positively received by the involved faculty. The team thought it was important for students to see that all these teachers were part of the unit and that they were going to have interaction with all the different subjects. At that time, they also told the students what the goals were, went over the matrix they were going to be using, and showed them the form teachers would use to assess them. The teachers felt this opening activity helped students start looking for connections across the disciplines.

The concepts were introduced first in the science classes. Students used the matrix to describe the initial condition (that corresponded with the activity they were doing) and then talked about all the variables they would be able to change. This led students to exploring the design of controlled experiments. For example, with the pendulum activity, the beginning condition was that of a 12-centimeter length of string with one penny at the end of it. The beginning release position was at a particular spot, and students counted how many swings back and forth they would get using that position. Then string length, weight, and release position – variables – could be changed. Students were to determine which of those variables affected the outcome. In order to figure that out, they learned that they could not change all the variables at one time, otherwise they would not know what affected the outcome.

Instruction in dance, which was the arts partner's discipline, paralleled what students were learning in music – theme and variation. The dancer introduced students to a dance movement, a theme movement. Then he would give them different problems to solve, such as a change in tempo or different facings – standing and facing in different directions. Different dance "problems" were solved in small groups: tempo, different facings, repetition (repeating a certain movement over and over), and proximity (being far away or close together) were "variables" to be controlled. Another example was to give students a walking phrase, and each group was asked to come up with variables or variations on walking, whether it was skipping, rolling, jumping, crab walks, or knee walks. All of these concepts were incorporated into a final dance performance.

When these students came to music class, they saw the same vocabulary words as they used in science and dance. To meet the state music standards, students must learn various elements of music, such as meter and tonality. In the context of this unit, the music teacher taught about these elements quite differently than in previous years. She demonstrated a music theme, and asked the students to use the various music elements as variables to change that music theme. The music teacher remarked that she didn't have to teach what variables were because they were familiar with the concept from science and dance. Because students were experimenting in science, she had them do a "controlled experiment" in music. They had a lab, and they did three different variations. They would pick a music theme, pick a variable, and change it. The music teacher reported, "They'd say, 'oh, this is just like science'….We got into augmentation, and we got into syncopation. We were talking [at a high level] about middle school [music concepts], because they had the foundation…."

In art, students were involved in a computer-assisted art project. They created a standard design for a shirt. Then each student figured out what variable they would change on the standard design to create their own shirt. Some of the students had different colors, or they changed the arm position or the leg, or they did the hair differently. They had a number of variables they could change using the computer design/drawing program. Each student's shirt was his or her final exam for art.

The assessment strategies were part of the learning process, requiring students to evaluate their own progress using the core concepts being taught. The performance of the dance composition discussed above, with students wearing their shirts is one example. The teacher-created scoring forms included rubrics, so students could keep track of how many concepts and skills they were mastering. Students and teachers both filled out scoring rubrics in science, art, music, and dance, and they discussed any discrepancies in their scores in order to deepen student's understanding of critical concepts.

In science there was additional assessment. There was a performance test for which students were given little model forms of a whirlybird, and they had to put it together. They had to come up with a beginning form and then figure out what the variables were. They tested the different variables, and their final project was to fill out the matrix used with experiments. There was also a written test that asked questions designed to assess whether students understood the concept of variables.

Assessment also included a reflection sheet and a discovery sheet that students periodically completed. It had a description of activities, what they were doing in science or art or music, what they learned from that, what they liked best, and what they would change. It helped teachers understand what connections students were seeing. For example, students used the word tempo in science, because they made the planes go fast and slow, just as they could change the tempo of a song in music. After this unit, the science teacher saw that the students were so familiar with variables that by the time they got to the fourth and last science activity, students said, "We really don't have to do this, you know, we really do understand." "So, by the time they got to the whirlybirds," the teacher said, "and the performance package, they had no problem, they could whip out that matrix."

All teachers thought they got higher quality work in their disciplines because students knew the four teachers were going to see what they did in science, in music, in dance, and in art. One teacher said, "We really felt that students understood in great depth the concepts that we were teaching, and they really got theme and variation, they can hear it, they can do it." The dance artist felt that this project was not what he usually experienced in schools. He said,

> It almost seemed like the science was enhancing the art rather than the art enhancing the science. It seemed to be the reverse of my whole take on what the Annenberg program is, but it's working, it's working. We were using science and applying it to music; usually you learn a concept in music and you apply it to science.

By the third year, the fifth grade teachers were making deeper connections to other disciplines that they had not made before. Teachers felt the collaboration, including the graphic organizers, supported by the rubrics, supplemented by a common language across disciplines, increased

student understanding. One teacher said, "Now, students see [the variables] in everything. You won't believe the comments that we got from the kids. 'Wow, I learned that I can go and I can find variables in everything.'" Another stated: "Kids were more engaged because we were all connected so well. They saw us as a group at the beginning. They were going to receive feedback from a team of teachers and that increased their attention to detail and to quality."

Achieving Breadth in Multiple Disciplines: Music, Math, and Media Performance Package in Portland Elementary.

This is the story of experiences in making dulcimers that began as an artist-designed residency, with some attempt to connect math concepts (elaborated residency), and, by the second year, became a standards-based unit involving music, technology, and mathematics. Teachers developed a performance assessment package (which met the state's high achievement "show what you know" criteria) called "Fretworks: Dulcimers Across the Curriculum." The content standards covered by the performance package include: artistic creativity, performance, and expression in Arts and Literature learning area; technology skills in the Resource Management learning area; and shape, space, and measurement (partial) and number sense (partial) in the Mathematical Applications learning area.

During the first year of the AAA project, the fifth grade worked with Ross Sutter on the dulcimer project. The artist, a former math teacher, taught students how to make and play the dulcimer instrument. The fifth grade teachers were intrigued and thought about making the unit more integrated. They had some planning time at the beginning of the year, but they later said it wasn't the kind where they really sat down and looked at what the teachers would be teaching in the classroom while the arts project was going on. The teachers thought about tying it to math, but that did not happen in advance of the residency.

On one of the first days of the residency, the artist had been in one fifth-grade classroom working on the dulcimers, and he came to the other fifth grade teacher and said the students in the previous class really had trouble with fractions. The teacher said,

> The artist didn't have a plan to teach fractions, and he didn't have time to teach it. He was coming in my room next. I had 15 minutes between lunch and the kids arriving during which to make a lesson plan. So I had them quickly dissect an inch. We looked at the fractional equivalencies, at halves and three-fourths and four-eighths. When he got there that day, they actually could do it. It was easier for students to make their dulcimers. Later, when I went back to teaching fractions, they still had it.

The dulcimer performance that first year was far beyond what teachers had expected. The music teacher reported,

> They were all so nervous, but they were just amazing. There were kids who don't normally want to perform, but there was nobody who didn't want to take part. Kids who might normally cause problems were totally involved. They were trying duets with their friends, and they were helping each other measure.

Teachers were also convinced of the power of the arts experience to increase learning of non-arts concepts.

The second year of the AAA project, teachers intentionally beefed up the math component of the fifth grade unit with dulcimers and used their planning time to coordinate across disciplines. All of the fifth grade teachers connected dulcimers with the district curriculum on concepts of measurement and fractions. Using an existing dulcimer board (fret board), the math teachers had students measure the placement of the frets and determine the equivalent fractions. For the media part of the performance package, students did research on the dulcimer and prepared a hyper-studio program with four cards on it to show what they did. With one button, they could click on the song they performed on the dulcimer. They could click on their picture with their completed dulcimer. Another button clicked on the song the student notated.

The music teacher laid the groundwork for the dulcimer project during the first semester with folk songs and singing concepts and skills – including improvisation and accompaniment. By the time Ross Sutter, the dulcimer artist, came in February, students had the background they needed for working with Mr. Sutter and completing the performance package.

During the year, writing also became part of the effort. For the unit, teachers prepared a packet of information that included the students' dulcimers journal with a cover and a graphic on it and the rubrics for the performance package, including both student and teacher assessments. Then there were the math pages that gave the directions for the measurement. After they worked with dulcimers each day, the writing component was done in each of the three homerooms. Students would write, "Today I." Teachers found that students wrote a lot when they were writing about something that they were interested in. One teacher said, "Every student kept this journal for the entire two weeks [of the dulcimer unit]. It was very successful."

The school's fine arts planning committee called the changes they made in how they integrated the arts "a major paradigm shift." One teacher said,

> From the beginning when [an earlier arts enrichment program] started, it was the UFO model – just dropped in – and now there's a universal desire among the teachers that the arts be embedded in the curriculum. Now, when we look at residencies, we ask how it fits in the curriculum, and in looking at the curriculum, we see where we need to have arts projects to strengthen the curriculum.

One issue the teachers confronted during development of the dulcimer unit was whether one project could meet standards in multiple disciplines. Their answer is "yes, it's working."

Conclusion

Of course the implementation story of the AAA project is not 100% successful. Even among the schools that we have highlighted in this report several struggled at various points to achieve what they hoped for – or changed what they hoped to do in quite dramatic ways. We have chosen to focus on projects that are successful to illuminate some of the themes that have emerged from our cross-site analysis.

Some key conclusions can be drawn that supplement what we have presented. *First, the models that we have identified are "real" and not theoretical, and they are derived from observing practice*. No professional development or other systematic conversations promoted a model or even several models for arts integration: Minneapolis teachers invented what we have described here. We have examples of all of the models, implemented school-wide (as some of our cases indicate), by grade level teams, or by individual teachers who have been captured by the passion of integrating art with other disciplines.

Second, in most cases, *arts specialists on the school staff were involved with whatever implementation model was used*. While some arts specialist teachers took on significant leadership roles in their schools, others played more supportive roles. The narratives that we have woven suggest that using arts partners—artists who have no teaching credential—supplements and enhances the role of specialized art teachers. In many schools, the amount of planning between the school arts specialists and the grade level teachers has increased a great deal and is now expected by the principal. Arts specialists usually said they had always wanted to coordinate their curriculum with other content but this project set up the structure and increased the awareness of teachers. This pattern is clearest in the capacity building and concepts across the curriculum models, but can be found within every model. This finding is important, because the role of the specialized art teacher in the program was initially unclear and, in most cases, the arts specialists had no more prior experiences with arts integration than did the regular classroom teachers.

Third, *partnerships involving a visiting literary or theater artist and the non-arts disciplines of reading and writing proved the easiest to implement*. The borders between the arts discipline and the non-arts discipline were less distinguishable, which enhanced the likelihood of co-teaching. When visual arts, dance, music, multi-media or other art forms were involved, the implementation process was often somewhat slower, as both artists and teachers struggled to make sense of how their disciplines were related. However, some of the "odd partners" cases, such as those we have described in West Branch (dance and math) and Oak Grove (multiple arts and science) had the most profound effects on teachers' way of thinking about classroom practice.

If we exclude the residency and elaborated residency models (which we have defined as focusing primarily on the arts discipline and the artist-as-teacher) planning may begin either by teachers identifying non-arts skills they want to support with the arts or by teachers identifying an artist to work with and then looking for non-arts skills that can be supported. Either the non-arts or the arts discipline may dominate. The model does not determine the degree of balance or of integration, which depends on the people involved and the degree to which they are able to align concepts.

Fourth, although we have labeled one model as focused on capacity building, in reality *all of the models changed the classroom practice of the regular classroom teacher*. The teacher teaches most of the non-arts curriculum when the artist is not present – although well-funded, the AAA grants did not permit having the artist in their classroom for the amount of time it would take to teach the related arts and non-arts concepts for the entire unit. Teachers necessarily taught the related non-arts concepts as much as possible in order to conserve resources for the arts work.

And, in all cases teachers learned a great deal about the related arts concepts in order to carry out any of the arts integration that we observed in this program. Many of the school projects expected (or hoped) that the teachers would learn to use the art form without the artist. In contrast, in only one case did the school try to train the artists in the non-arts curriculum, but even then not for the purpose of the artist teaching the non-arts subject. [5]

Fifth, *the AAA program was truly a teacher-led initiative.* That is not to say that principal leadership and support at the building level was not important to the implementation process or to the quality of the partnership. But the case narratives that we have provided are surprisingly silent on the role of the principal. Over the entire sample of elementary schools we found that both schools with stronger principals and schools with weaker principals have arts specialists and teachers who planned excellent units and partnerships. Part of this finding (which runs counter to much of the literature on innovation in education) may be due to the very strong role played by the district, which provided a strong foundation of support and pressure to the school teams (including persuading schools that were making little progress to opt out).

The relative implementation success of AAA as a district-wide reform initiative is thus attributable to a variety of factors, but these may be best summarized as:

- Catching the imagination of teachers and artists;
- Providing both teachers and artists with time to plan for real pedagogical innovation;
- Providing a three-year window for unfettered development allowed many schools to move from an initial "toe in the water" residency to a more elaborated model (see Appendices 2a and 2b);
- Encouraging leadership at the grass-roots building level; allowing leaders to emerge rather than nominating positional leaders;
- Creating an environment of thoughtfulness about classroom practice and arts integration; and
- Treating implementation like an art product—not an event, but a process that unfolds over time.

[5] Of course, when the artist is a literary artist, it is hard to separate, if it can be done at all, the arts from the non-arts work. And there were also rare occasions, such as the dulcimer-fractions lesson where the artist already had a disciplinary background in the non-arts discipline.

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Appendix 1:

Models defined

	Residency	Elaborated Residency	Capacity Building	Co-teaching	Concepts Across the Curriculum (CAC)
Discipline emphasized	Arts experience with little or no integration	An arts experience intentionally tied to non-arts content or social skills	Focuses on process and products of the art form	Aims for equal emphasis, though arts or non-arts may be emphasized	Concepts in common taught separately by teacher or artist trained in that discipline
Degree of Co-planning	N.A.	Limited to identifying non-arts concepts. Artist develops the instructional activity	Artist or others guide teachers in identifying ways they can use the art form with non-arts curriculum	Very high: Teacher and artist collaborate and develop curriculum units together; both understand non-arts and arts concepts	Very high: All teachers and artists identify concepts in common and share information about how they teach them
Degree of Co-teaching	N.A.	Teacher may assist artist	Artist-teacher may co-teach to demonstrate an arts concept in common with non-arts concept	Artist-teacher pair teach together during arts activities; teacher teaches alone during non-arts activities	Each discipline taught separately (other team members may be present to help or observe)
Degree of Integration (seamlessness)	N.A.	Non-arts skills are included in the arts experience by the artist	Teachers add use of the art form to their repertoire of teaching strategies	Varies. Literary arts more likely to be seamlessly integrated. Usually non-arts concepts are taught before and after arts experiences	Students aware common concepts are being taught in each separate classroom
Duration of experiences	Limited	Limited	Limited to time teachers need to learn the art form and perhaps practice using it with one unit	Varies from one unit to many units over a full year	Usually one unit for a given team
Number of partners	No partnering	No partnering	Usually many teachers focusing on one art form; several art forms may be learned over time	Teacher-artist pairs	Three or more teachers and artists (three or more disciplines)

Appendix 2a.

Number Of Schools Using Each Model By The Number Of Years Schools Have Been In The Project.

Year in project	*Residency*	*Elaborated residency*	*Capacity building*	*Co-teaching*	*Concepts Across the Curriculum*
During school's first year in the project	10	8	5	7	2
During school's second year in the project	4	4	3	11	5
During school's third year in the project	4	2	3	9	5

Notes:

Schools were added to the project each year. A total of 23 elementary schools were in the project for three years.

Some (Austin, Keystone K-8, Weiland) were district-wide arts magnets or arts-focused community schools, and it was hard to determine a single model for the school. Therefore, the activity that the AAA money seemed to be most responsible for was analyzed, even though resources were pooled.

Appendix 2b

Schools by Model by Years the School was in Program

	First year in project	Second year in project	Third year in project
Residency Model	Bergen Greencastle Grayling Hatfield Highland Kirtland Phillips Porter Springfield Winde	Bergen Grayling Hatfield Kirtland	Bergen Grayling Kirtland
Elaborated Residency Model	Austin Barko East Bend Ford Green Arbor Portland Rayburn Sanderson	East Bend Greencastle Highland Porter Rayburn	East Bend Porter Rayburn
Capacity Building Model	Keystone North City Washington Weiland	North City	North City
Co-Teaching Model	Dean Frederick Garfield Manitou Spencer Stone river West Branch West Hill	Dean Ford Frederick Garfield Manitou Phillips Springfield Stone River Washington Weiland West Branch West Hill	Dean Frederick Garfield Greencastle Hatfield Highland Phillips Weiland West Branch West Hill
Concepts Across the Curriculum (CAC) Model	Jackson Oak Grove	Austin Jackson Keystone Oak Grove Portland	Austin Jackson Oak Grove Stone River

Appendix 3

Illustrating the Models of Implementation

1. The Residency Model

Theater experience in Bergin Elementary. By the third year of involvement at Bergin Elementary, Red Eye Collaborative, a community theater company had worked with almost every grade level. The theater project gave all the students who participated a chance to explore all the different aspects of creating and performing a play. The theater group came with specific methods for taking the students through the process of creating and performing a play, creating a story, writing a script, designing the sets, and perhaps creating a video and composing a song.

This theater experience was developed by the artists and was brought into the school to give the students an additional arts experience. The experience was not specifically tied to any curriculum being learned by the students in other disciplines. Students left their classes once or twice a week for several weeks to do the part of the play production they had selected to work on – set design or script writing, for example.

During the theater's third year in the school, the fourth grade teachers made a step toward tying the theater experience to their social studies curriculum. The fourth grade students created their play about Minnesota. This school is beginning to think about moving beyond the "residency model" to a model that includes more arts integration.

Book Arts in Phillips Elementary. In Phillips Elementary school, the art teacher decided to have all students learn to make books. During the first year of the grant, the classroom teachers did not want to take time out of their reading period, so the art teacher had the book arts artist teach the students during the art period. Though students did continue making books in their regular classroom, it seemed like a separate art activity. By the second year of the grant, the classroom teachers planned with the art teacher, the book artist, and a visiting author to tie the entire activity to the writing curriculum. This book arts activity began as a "residency model" but became closely integrated with the academic curriculum.

2. Elaborated Residency

Respect Through Theater Arts in Barko Elementary. One school had a number of partnerships with arts organizations – St. Paul Chamber Orchestra, Children's Theater, Young Audiences, and Minnesota Opera – to provide arts related experiences for students. They began their first arts integration experience with a partnership with Climb Theater, choosing their non-arts goal from their School Improvement Plan – to increase respect within the school. This focus tied into the "responsive classroom" program (a program of classroom management strategies) the school had adopted. All the teachers and classrooms at all grade levels were involved with Climb Theater. Climb Theater started by doing a teacher in-service to help teachers become familiar with the artists' format and to experience some of the techniques the artists would use with students. They also hoped to build teachers' capacity to use some of the techniques with students on their

own. Climb's classroom activities focused on behavior, including role modeling. For example, in first grade classrooms, they incorporated songs, poems, role modeling, and developed short plays with students that all showed the idea of respect in a concrete way. One first grade teacher said, "The kids just really got it at their level." This project fit the "elaborated residency" model because the experiences were essentially theater arts experiences designed by the artists but tied intentionally to a goal of the school unrelated to the arts or another academic discipline – to improve behavior.

Neighborhood Bridges – Storytelling and Writing in Multiple Schools. The Neighborhood Bridges project is an example where story telling and writing, both literary arts, come together as a self-contained unit. The teacher and the artist do not connect this unit with other academic curriculum in the teacher's program – though of course many of the skills are taught in the reading and writing programs of the teacher. Neighborhood Bridges, a theater arts workshop project created by 1997 by Peter Brosius, artistic director of the Children's Theatre Company of Minneapolis, and Jack Zipes, Professor of German and Comparative Literature at the University of Minnesota, is based on students creating stories, acting out different versions of stories, and writing stories in their journals. An example is a class that works with the story of Little Red Riding Hood. The teacher teaches the students one version during the week before the artist comes into the classroom. Then the day the artist comes in, the artist tells them another version orally, and then the teacher or artist reads them a third version. So the students have three different versions of the same story. The class is then divided into three groups, and each group acts out a version of the story.

A big part of the technique is not giving students any parts, but letting the group assign the parts, and letting them choose the story. They can change the story by asking a "what if" question. "What if Little Red Riding Hood was a boy?" They act out the different versions. The next step is to write a story in their journals. They can now make up their own "what if" story, taking the story and changing it somehow. "What if the Little Red Riding Hood went to West Branch School?" This routine would be repeated with several more stories. At the end of the program, students pick their favorite story of those they've written, and it becomes part of a class storybook. Another example of a Neighborhood Bridges workshop activity is the artist asking the students for nouns and prepositions and making up an oral story on the spot.

After doing this for a month, the artist would have the students creating their own stories verbally and then giving them an opportunity to write them down. Though there is already a curriculum developed, the artist has a one-hour preparatory meeting each week with the teachers involved in the school to discuss changes, problems, and new ideas. The project also holds three meetings a year with the teachers from all the schools in the program so that they could openly discuss problems and plans. The teachers are to gradually become more and more engaged in co-teaching with the artist. The goal is to prepare the teachers to do the curriculum on their own without an artist. In one school, after piloting the project, the teachers realized that this storytelling workshop connected with every language arts standard because it encompassed so many things. Reading, viewing, and listening were a big part of the workshop, as well as discussing, brainstorming, webbing, composing, and the five steps of the writing process. Students' rough drafts needed proofreading and revising. Another important skill was demonstrating the beginning, middle, and end of the story. One teacher said, "So it was really

beautiful as far as relating to the standards, and the joy was seeing the writing – it was amazing how their writing took off."

The Neighborhood Bridges project is considered an elaborated residency because the detailed curriculum that is implemented has been developed by the arts organization. However, the project could also be considered capacity building because the project hopes that teachers will be able to do the project on their own in succeeding years. The project also might be considered co-teaching because it provides planning time for the artists and teachers so that the teacher will be involved with activities with the students before, during, and after the artist's lessons.

3. Capacity Building

Initiation through Puppetry in Washington Elementary. One school decided, through their Fine Arts Committee, to begin their venture into arts integration with one artist-in-residence who would work with all grade level teams. Though they had experienced exposing their students to arts experiences, they lacked experience with integrating the arts into other disciplines. They wanted to work with someone who could look with them at their grade level curriculum maps and help select concepts that could be taught through the arts. They chose a puppeteer who was experienced in working with teachers in schools, and started with an all day workshop for teachers. The arts specialist who spearheaded the Fine Arts Committee wanted teachers to participate at the level with which they felt comfortable. They offered teachers the options of participating at Level I – needing to see how it worked (residency model), Level II for those people who wanted to step in but not necessarily all the way (elaborated residency model), or Level III for people who wanted to step in all the way (co-teaching model).

The fourth and fifth grades chose a Level II experience during their social studies unit on Minnesota. Students made puppets to tell Native American folk tales. It was essentially instruction in the arts with students learning to make puppets, make a puppet stage, and to act and perform with the puppets for their parents. A Level III experience involved a sixth grade reading unit called "What's Cooking" and a health unit on "Healthy Eating Habits." The students wrote skits about nutrition and diet and made an intestine puppet, pizza puppets, a taco puppet, and many other food and bodily function puppets. They learned the health concepts in the process of deciding what puppets they needed to make, writing the script, and performing for their parents.

This school's approach fits the "capacity building" model because it built the capacity of teachers to integrate the arts with their academic curriculum. Each grade level team of teachers learned how to plan with an artist and to implement either an arts unit or an arts integrated unit with an artist. Some grade levels continued with puppetry, but others thought they would be able to do some puppetry work on their own and wanted to try another art form – to expose themselves to other artists. The second year, each team felt confident in selecting an arts experience to fit their particular curriculum and goals.

Expanding Skills of Arts Specialists in Springfield Elementary. In many schools arts specialist teachers were involved in the AAA projects. Project funds were sometimes allocated to a school arts specialist to bring in an artist with an arts skill that the arts specialist wanted to learn. During

class with the arts specialist and the guest artist, students experienced the art form and, in the future, the arts specialist would use that art form with the students without the assistance of the visiting artist. This is another type of "capacity building" used in this project.

One example is a music teacher who brought in an artist from the Cultural Center of Minnesota who taught the students and the arts specialist African drumming. The school had acquired an extensive set of African drums the previous year, but the music teacher did not have the experience needed to use them in her classes. The artist taught the students not only how to play the drums, but he taught them about other African musical instruments and about the history and cultural practices of Africa. He taught respect for the drums and the culture. Teachers were so pleased with the experience that they decided to invite the artist back if they had the resources. If resources were not available, the music teacher felt she could teach some of what she learned from this artist.

Visual Thinking Strategies in Multiple Schools in the District. The Minnesota Institute of Arts trained teachers in using tools for viewing works of art, called Visual Thinking Strategies (VTS). The district level AAA project provided the encouragement and financial support for teachers in any of the project schools to be trained. By the end of the project, the majority of teachers in many schools were using VTS with their students. VTS is similar to techniques taught to parents in the Art Adventure program. The teaching technique seems simple, but classroom teachers did not commonly use it. With VTS, students are asked to look at a piece of artwork and then are asked three simple questions: What is going on in this artwork?, What do you see that makes you say that?, and What more can you find? Children are taught to listen to each other, build on other students' comments, and to politely disagree. Teachers have been amazed at the depth of insight coming from the children they teach, from kindergarten up. Many teachers have reported that this program changed the way they teach. The VTS program is an example of a "capacity building model." Teachers not only used these simple questioning techniques with art forms, but also transferred their use to other disciplines – reading, math, or social studies. Research "has demonstrated that this kind of art lesson – a facilitated discussion in which all the information comes from the learners – teaches critical thinking skills that transfer to other areas of the curriculum, especially reading and interpreting written texts" (Johnson, 2002, p. 5)

Training the Artists in the Science Curriculum in West Hill Elementary. For their first year in the project, one school decided to focus on the concept of sequence and putting things in order from the reading curriculum. They connected theater arts with reading in all fourth grade and first grade classes. The second year, they expanded to second grade and shifted the focus from reading to science where the concept of sequence also fit. During the second year, teachers were being trained through a National Science Foundation grant to use the Foss science kits adopted by the school district. The school connected the AAA grant to this training in order to train the artists along with the teachers in the use of the Foss science kits. The teachers and artists planned together to identify the main concepts in the science units being taught. Because the artists came to all the trainings, they had a thorough understanding of the activities that the children would experience. Then when the artists wrote their lesson plans they could integrate the main science concepts into their arts activity. Both disciplines were to be equally important. The science concepts would be taught separately by the teacher, the arts concepts would be

taught by the artist with the teacher present, and the acts activity would be designed so the science concepts and the arts concepts reinforced each other.

4. Co-Teaching

Capacity Building through Co-teaching in Garfield Elementary. A small school with a performing arts emphasis, Garfield focused its AAA activities on integrating performing arts into all disciplines, especially the language arts and math curriculum, and to have all teachers learn to use the arts extensively as an instructional tool. A second goal was to expose students to the arts of the world both as an audience member and as a performer through regular performances during the school year. The school's design aspired to develop individual teacher's skills with the arts so that they would be "experts" who could teach their colleagues. While students were learning from the artists, the teachers were learning from artists and each other. If the artist was gone or when the project was over, teachers would be able to continue intense arts integration. They would be able, on their own, to do some of the specific activities they did with the artist, and just as important, to be able to create, on their own, other arts integration activities. Or, teachers could work with their school arts specialists to integrate arts with academics. The first year an artist worked intensively with three teachers each week for the entire school year. The second year these three teachers continued participating in the project, teamed with arts specialists at the school, and three new teachers worked with the artist. By the third year of the project at this school, nine of the eleven classrooms were collaborating with an artist or someone in the building at some point in the school year. The school had always wanted teachers and arts specialists to plan together, and with the Annenberg grant, they were able to schedule planning time with the school arts specialists.

In this school, the teacher-artist teams were teaching the arts standards as well as the academic standards. They were using the arts to teach the academics but were also using the academics to reinforce the arts. The planning sheet used by the teams asked "how does this lesson relate to standards." They would get out their standards books and look at the standards and the grade level expectations. Each teacher-artist or teacher-arts specialist team selected the academic discipline and concepts within that discipline they would work together on. Teachers felt it was important to work with an artist over a long period of time because this helped the artist adjust his/her plans to fit what the teacher had accomplished. During planning time, they might think they would get particular activities done within two weeks, but the classroom teacher might not have completed all that they had planned before the artist came in to do her piece. The artist would need to adjust her lesson quickly. One teacher said, "There are not a lot of artist residents who can do that."

One example of a unit created and implemented by a teacher and visiting artist involved the science curriculum, teaching about seeds and flowers and plants in the spring. They met to brainstorm and tie together the science standards, the language arts standards, and the performing arts standards to teach a lesson on composting. Students read the related books during reading and did science experiments separate from the artist. The teacher summarized, "So we used the standards that already existed for the grade level and the curriculum we would teach anyway, and we added the performing arts as another way to teach the concepts." The teacher reported that the students were so excited about their learning that they wanted to show their parents what they

learned. The teacher was amazed at the incredible job these kindergarten students did with a dance that explained how seeds sprout and the stems and the leaves come up and the roots go down. They re-enacted a whole scene about gardening. They had a packed house in the classroom because almost every child and their parent showed up that night. The students enjoyed teaching their parents what they had learned through the arts.

Being a performing arts school, they periodically had "share-ins" when they would have two performances, a day performance for the entire school and an evening performance for the children to come back and perform for their parents. Children in other classrooms saw the performances of all the students and learned from their peers. And the teachers got ideas for their own classes from these performances. This implementation example is described here as a transition between "capacity-building" and "co-teaching" because it has characteristics of both models. The AAA team spoke of the implementation strategy as primarily "capacity building" but the teachers and artists were planning and teaching together over an entire year.

Co-teaching with puppetry and story structure in Weiland K-8. Before the AAA grants were available, a teacher in Weiland K-8, a district designated arts magnet school, applied for a $500 Star Tribune Imagination Grant in order to purchase materials for puppetry to engage students in writing.[6] The teacher was not satisfied that all the students were getting the sense of story, plot, and structure, and she thought using puppets might help. With AAA money, the teacher brought Galumph Theater puppet artists into her classroom to help with the unit. The opportunity to bring in puppeteers helped her with what she did not know about puppets. She said she didn't know how to bring out characterization, needed tips for the movement, and the biggest challenge was to know how to get the kids to make the show a story. Galumph's storyboard process provided the technique that worked.

The teacher hoped her students would get excited about writing and reading when they had a creative performance piece associated with it. She wanted them to see that a story is not a story without a problem, without a sequence, and an ending. She also wanted to draw out some children who usually did not talk as much in class, to see if that would draw them out. She said, "And boy, did it! I have one little child who hardly ever talks and he was fantastic behind that stage. Not only was his puppet beautiful but just in his talking and adlibbing, it was wonderful." Although the artists led the lessons and came up with the lesson format, the teacher was very involved in the planning and the teaching. She would watch and help where needed. During the lessons with Galumph, the teacher often led small groups of children, helped glue puppets back together, mediated conflicts, or asked guiding questions that helped groups construct better plots and performances. She believes that she is better able to learn from the artists and continue the work after they are gone by being involved in the lesson. She noted, "I feel that I'm learning, too. I'm getting something from the artist. If I am as involved as I could be with what they were doing, it would kind of sink in to me too."

The following school year, the teacher convinced the rest of the third grade team to try the unit supported by AAA funding. And, at the end of the school year, the teacher, without the artist,

[6] Although the school is an arts magnet, at the time that the AAA grant began, arts were not infused into non-arts subjects. Thus, the project was as much an innovation in Weiland as in other schools that were not designated as arts magnets.

did a final puppetry unit with her class in connection with their social studies disaster unit. To start the project, she asked the students to think of a disaster. They created a list of 50 disasters. In groups, they chose a disaster and thought of a problem. The teacher had students do the storyboard and reminded them of beginning, middle, and end, and the problem. She said, "The shows were wonderful. They had a good beginning, good middle, good end, and a good problem stated."

This is a good example of a "co-teaching unit" involving a teacher and an artist, using the disciplines of language arts and puppetry. The teacher has done or will do some instruction on her own with the class to understand the names for the concepts – beginning, middle, and end – that are used in the reading curriculum. The work involving putting on a play with puppets and the skills of writing are very close because they are all really "literary arts."

5. Concepts Across the Curriculum Model

Three examples of the Concepts Across the Curriculum Model are included in the body of the paper: Jackson Elementary (clay boats) as the example of the model, Oak Grove Elementary (variables) as an example of going deeper each year, and Portland Elementary (dulcimers) as an example of achieving breadth.