

# Building A Legacy

ARTS EDUCATION FOR ALL MINNESOTA STUDENTS



Highlights of the 2012 Minnesota Arts Education Research Project



**PERPICH**

TEACHING IN AND  
THROUGH THE ARTS



**CLEAN  
WATER  
LAND &  
LEGACY**  
AMENDMENT

# Building A Legacy

ARTS EDUCATION FOR ALL MINNESOTA STUDENTS

## Key Findings

While access to arts programs is nearly universal (99% of schools) less than half of all middle and high schools and only 28% of elementary schools provide the required number of arts areas.

87% of schools have aligned their curriculum with the state arts standards.

Assessment of student skills and knowledge is mostly driven by teacher-developed assessments with fewer than 3 in 10 schools reporting district developed assessments in the arts.

Nearly ½ of all high schools include the arts in School Improvement Plans.

92% of elementary, 77% of middle and 49% of high school students participate in at least one arts area in one year, with music and visual arts having the highest enrollments.

Nearly all schools (92%) use licensed arts teachers (full time or part-time) as the primary provider of music and visual arts instruction.

75% of schools report having no arts coordinator in their school or district.

Nearly 2/3 of schools spend less than \$10 per pupil per year for arts instructional materials. At the elementary level, the per-pupil arts spending is only 2 cents per day.

To support direct arts instruction, 23% of all schools reported using outside funding to offset budget decreases and nearly half of all schools charge fees for extracurricular arts activities.

While 46% of all schools report using arts integration as a teaching strategy, only 15% reported using this strategy on a regular basis. 67% of schools indicate a desire to introduce or increase arts integration.

93% of all schools reported providing students field trips to museums, theaters, musical performances and exhibitions to engage in artistic experiences.

## The Minnesota Arts Education Research Project

# Goals and Results

## The Minnesota Arts Education Research Project

In the early 2000s, there was considerable discussion about the role of the arts in public education, but little data about the status of arts education in all schools in Minnesota. To answer this need, the Perpich Center for Arts Education launched The Minnesota Arts Education Research Project during the 2010/2011 school year with funding provided by the Minnesota State Legislature through its Arts and Cultural Heritage Fund of the Clean Water, Land, and Legacy Amendment.

The purpose of this project was to gather, evaluate and disseminate quantitative data regarding arts education in the state. The Research Project was designed to document arts education in every school through a statewide voluntary survey, and combine the survey findings with other information to create a 360-degree view of arts education in the state.

This report is a summary of the status of arts education, education policy and delivery. The intent is to provide decision makers and the public with a clear picture of the status of arts education in Minnesota.

### Goals and Results of the Minnesota Arts Education Research Project

#### Goal #1.

##### Conduct Statewide Arts Education Survey

**Result** In 2010/2011, the Perpich Center for Arts Education contracted with Quadrant Arts Education Research to coordinate the implementation of a survey of all schools in Minnesota. An analysis of survey responses has been compiled in this report.

#### Goal #2.

##### Connect Survey Results with Additional Information

**Result** The status of arts education in the state is related to many factors. Economic, demographic, census, school performance measures and municipal data were combined with the survey results to allow for a more in-depth analysis. The results of this analysis are contained in this report.

#### Goal #3.

##### Provide a Public Report

**Result** The contents of this report and the online resources provide citizens of Minnesota with the first view of the accurate status and condition of arts education in the state.

# Building a Legacy: From the Authors

Arts Education in the State of Minnesota is alive and well. Arts education courses (defined as coursework in dance, media arts, music, theater and visual arts) are nearly universally available to students. In addition, strong state policies, high quality instruction provided by qualified teachers, broadly varied course offerings, and a strong connection between schools and cultural organizations, create an excellent environment for arts learning to take place. When comparing Minnesota's results with similar studies from other states, Minnesota fares very well.

While the overall picture of arts education is favorable, there is certainly room for improvement. Minnesota has some of the strongest arts education policies in the country, but implementation of these policies at the school level is uneven. As such these policies are in need of a system to ensure accountability. For example, the low percentage of schools providing the required number of arts areas indicates a need for greater accountability. While arts education is almost universally available, actual student participation lags in some areas. The ideal goal of arts education for every student in the state has not yet been achieved. Limited financial resources supporting arts education and a reliance on external funding and/or additional student fees indicates a system under stress.

Two very important educational relationships have been identified in this study. First, there is a positive relationship between a school's Focus Rating (part of the Minnesota's Multiple Measurement Rating or MMR) and higher levels

of arts education (as measured by the arts education index). Second, there is a positive relationship between a school's scores for the Graduation Required Assessment for Diploma (GRAD) reading assessment and higher levels of arts education. These positive correlations hold even when controlling for other 'confounding' variables such as income, minority status, or geography. In short, higher levels of arts education coincide with higher Focus Ratings and GRAD reading scores.

The strength of arts education in Minnesota is no accident. Minnesota is the only state in the nation with a dedicated state agency supporting arts education — the Perpich Center for Arts Education. It is clear many of the strong policies in place and indeed the Minnesota Academic Standards in the Arts are a direct result of the role of the Perpich Center in shaping education policy for the citizens of the state.

This report reveals areas of strength for arts education and places for improvement. For the first time ever in a statewide study arts integration has been included. In addition, a series of recommendations are presented to help shape arts education in Minnesota for the next five years. Taken in its entirety, this report will help create a road map for Minnesota arts education and will enable the state to build a lasting legacy of arts education for every student.

— Robert B. Morrison and Patricia J. Cirillo

# Why Study the Arts?

In the early 1820s, education innovator William Fowle introduced drawing and music into several schools in Boston. The arts have been a part of U.S. public education ever since. The first data about arts education in the United States was collected in 1837 while Martin van Buren was President. Studies as far back as the 1930s indicated that students who studied the arts had higher achievement levels than those who did not.

The arts have been included as core subjects as a matter of federal law since 1994 through the Goals 2000 Education Reform Act (carried forward in No Child Left Behind and the Elementary and Secondary Education Act reauthorization) and in Minnesota since 1997, with the adoption of Minnesota K-12 Arts Standards.

Beyond the law, compelling recent research has shown that study in the arts makes vital contributions in a student's successful journey toward a purposeful, successful and fulfilling life. Arts education is truly a modern necessity.

## Study in the Arts Contributes to College/Workforce Readiness

### Preparing for College

The College Board has conducted five research projects in a commitment to developing the next generation of national voluntary, researched-based arts education standards to support 21st century needs of students and teachers, help ensure that all students are college and career ready, and affirm the place of arts education in a balanced core curriculum.<sup>\*1</sup>

Students participating in the arts show higher average SAT scores. The SAT is a standardized test designed to measure "readiness for college." An analysis of 10 years of SAT data revealed that students who took four years of arts courses in high school earned the highest scores on both the verbal and math SAT. Overall, students taking any arts courses scored significantly higher than students who took no arts courses.<sup>\*2</sup>

### Employment Opportunities in the Creative Industries

Americans for the Arts documents the key economic role played by the nonprofit arts and culture industry in its 2010 report, Arts and Economic Prosperity IV: The Economic Impact of Nonprofit Arts and Culture Organizations and Their Audiences. This study demonstrates that the nonprofit arts and culture industry is an economic driver in communities. Significant to a

discussion on career readiness is the fact that the nonprofit arm of the arts and culture industry supports 4.1 million jobs, representing \$86.68 billion in household income.

In Minnesota, a similar report shows that the nonprofit arm of the arts and culture industry generates nearly \$838 million in expenditures and supports more than 22,000 jobs, representing \$631 million in household income.<sup>\*3</sup>

### Essential Skills for the Workforce of the 21st Century

Creativity and innovation are the currency of the future. Schools, businesses and policymakers are taking steps to make this a reality in our nation's schools, and the arts have a clear role to play in the building of creativity and other 21st century skills.

In a study of superintendents who educate future workers and employers who hire them, both agree that creativity is increasingly important in the U.S. workplace and that arts education is crucial to developing creativity. Educators and employers both feel they have a responsibility for instilling creativity in the U.S. workforce (83 and 61 percent, respectively). However, schools' current creativity-building offerings don't match this desire. When superintendents were presented with a list of 12 creativity-promoting educational activities/experiences, more than three-quarters reported that each one (excluding study-abroad programs) is supported within their high schools. However, in more than half of these schools, only three of these activities/experiences are part of the required curriculum.<sup>\*4</sup>

The Partnership for 21st Century Skills, a national organization, is built on partnerships with the business community and advocates for 21st century readiness for every student. The framework that the Partnership and its members have developed fuses the 3Rs with the "4Cs" — Critical Thinking, Communication, Collaboration, and Creativity.<sup>\*5</sup>

A recent policy trend to capture and define opportunities for creativity in education is emerging. Massachusetts, California and Oklahoma are in various stages of drafting and implementing policies that will create a public measure of the opportunities for students to engage in innovative work.<sup>\*6</sup>

## Study in the Arts Contributes to Student Success in School

### Students are Better Prepared to be Learners

The ability to pay attention—visual focus, active listening and staying on task—is essential to school performance. It begins to develop early in life and is continuously refined. Early childhood training in instrumental music improves

these attention abilities, while continued music education throughout adolescence reinforces and strengthens them.<sup>\*7</sup> Perseverance is the ability to continue towards a goal when presented with obstacles. Students involved in music lessons surpass their peers on tasks measuring perseverance. At the foundation of perseverance are motivation, commitment and persistence, all traits of creative individuals.<sup>\*8</sup>

## **Students Perform Better Academically**

There is a significant correlation between high arts-involved students and academic achievement, regardless of socioeconomic status. In fact, levels of academic achievement recorded by high arts-involved students in the lowest socioeconomic (SES) quartile narrows the gap with higher SES students. Twelfth grade, low SES/high arts-involved students nearly close the achievement gap in reading proficiency with higher SES/low arts-involved 12th graders (37.9% reaching high levels of reading proficiency versus 42.9% respectively).<sup>\*9</sup>

Ten weeks of in-class drama coaching in a remedial third and fourth-grade classroom helped the teacher and students transform their approach to reading and improve the students' attitude about and success in reading. Dramatic training and expression offered students the opportunity to contribute their own background knowledge and understanding, improve their accuracy and momentum, broaden their understandings and expressive choices, and begin to see themselves as actors, or active readers. That sense of achievement positively affected their self-perception.<sup>\*10</sup>

Learning music develops the region of the brain responsible for verbal memory—the recall and retention of spoken words—which serves as a foundation for retaining information in all academic subjects. Music students who were tested for verbal memory showed a superior recall for words as compared to non-music students.<sup>\*11/12</sup>

Students who participate in arts learning experiences often have higher achievement in other realms of learning and life. In a well-documented national study using a federal database of over 25,000 middle and high school students, researchers from the University of California at Los Angeles found students with high arts involvement performed better on standardized achievement tests than students with low arts involvement. Moreover, the high arts-involved students also watched fewer hours of TV, participated in more community service and reported less boredom in school.<sup>\*13</sup>

In an experimental research study of high school age students, those who studied dance scored higher than

non-dancers on measures of creative thinking, especially in the categories of fluency, originality and abstract thought.<sup>\*14</sup>

A group of 162 children, ages 9 and 10, learned to look closely at works of art and reason about what they saw. The results showed that children's ability to draw inferences about artwork transferred to their reasoning about images in science. In both cases, the critical skill is that of looking closely and reasoning about what is seen.<sup>\*15</sup>

Students who study music outperform their non-music peers in assessments of math, writing, using information resources, reading and responding, and proofreading. The gains in achievement of music students compared to non-music students increase over time. These findings hold true regardless of socioeconomic status and race/ethnicity.<sup>\*16</sup> Additionally, students involved in instrumental music do better in algebra, a gateway for later achievement.<sup>\*17</sup>

## **Students Are Engaged in Their Learning**

### **Study in the Arts Is Linked With Overall Academic Ratings and Graduation Rates**

In two studies of statewide data in Florida and Texas, findings show consistent correlations between taking arts courses, student achievement, and graduation rates.

In Florida, a 2007-08 study of 188,859 12th graders show the more arts classes taken, the higher the student achievement in such measures as graduation rate, GPA, the state standardized test, and the SAT. For students receiving free and reduced price lunch (a commonly used indicator of low-income), the more arts classes taken, the higher the student achievement in all measures. For students of all ethnicities, the more arts classes taken, the higher the student achievement in all measures. The more arts classes taken, the less likely a student is to dropout of high school.<sup>\*18</sup>

In Texas, after comparing the yearly 2006 to 2010 data on school academic ratings, school rating improvement, and graduation rates to the yearly fine arts course enrollments, the following summary observations were made:

- Schools with a higher percentage of student enrollments in fine arts courses achieved higher academic ratings.
- Schools showing academic rating improvement from 2006 to 2010 reported increases in fine arts course enrollments.
- Schools with a higher percentage of student enrollments in fine arts courses reported higher graduation rates.<sup>\*19</sup>

# Why Study the Arts? (continued)

## Positive Benefits for At-Risk Students

Students of low socioeconomic status (SES) who participate in arts learning academically outperform comparable students who have no or low arts involvement.

A recent far-ranging study showed multiple positive outcomes among students of low SES. Eighth graders who had high levels of arts involvement throughout elementary school showed higher test scores in science and writing than students with low levels of involvement

In high school, students who had arts-rich experiences attained higher overall GPAs and were far less likely to drop out of school before graduation than did students who lacked those experiences.

This academic success continued into college where students who had arts involvement in high school were three times more likely to receive a bachelor's degree than students with low arts involvement.\*<sup>20</sup>

\*1, \*2, ... See page 22 for a list of research citations

## In Summary

Why teach the arts? When we examine what students need to succeed in school, college, career and life, the research points time and again to the arts for powerful learning opportunities and pathways to a successful future. The research cited above helps illuminate why the arts are necessary in public schools, and makes the inclusion of the arts in state and district education policy an imperative.

*"It is clear from the research that learning through the arts provides the type of emotional, creative and expressive development that students can benefit from throughout their lives. If we as a nation are serious about building a road to success for every student we must include the arts in curricular planning from the elementary through college levels."*

— Dr. Nancy Rubino

Senior Director in the College Board Office of Academic Initiatives

# Arts Education: A Right for All Students

## Universal Access to Quality Arts Education for All Minnesota Students is a Matter of Law

Arts education in Minnesota is a basic educational right for all Minnesota children — not just the gifted, or the talented, or the economically advantaged. It has a very strong grounding in state statutes and rules.

Universal access to quality arts education for all Minnesota students is supported by Minnesota Rules providing K-12 Academic Standards in the Arts and teacher licensure, and Statutes regulating K-12 graduation as well as implementation and assessment of the standards. The Minnesota Arts Education Research Project compared the results of their research to these policy statements (Rules and Statutes), in addition to other data, to assess the performance of schools in arts education. The understanding that arts education is a necessary component of whole-child education runs through Minnesota's standards and requirements.

Here is some background about how the laws evolved and where they stand today:

## Minnesota Academic Standards

Academic standards define expectations for what Minnesota's public school students should learn in grades K-12. Minnesota K-12 Academic Standards are in place for the Arts, English Language Arts, Mathematics, Science, Social Studies and Physical Education. Local standards must be developed by districts for Health, World Languages, career and technical education, and may be developed for the Arts.

## Minnesota K-12 Academic Standards in the Arts

In 1992, the Minnesota Legislature directed the creation of "a rigorous, results-oriented" high school graduation rule. The rule included a series of basic standards tests in mathematics, reading and writing, and importantly, a system of high academic standards in a wide range of content areas including the arts. The first set of Minnesota arts standards became effective for students entering the tenth grade in the 1997-1998 school year.



Since this first set of arts standards, new standards were adopted in 2003 and revisions were made in 2008. The current policy requiring Minnesota Academic Standards in the Arts, developed in 2008, states:

120B.021(subd 1) Required academic standards.  
*The following subject areas are required for statewide accountability:*

*(7) the arts, for which statewide or locally developed academic standards apply, as determined by the school district. Public elementary and middle schools must offer at least three and require at least two of the following four arts areas: dance; music; theater; and visual arts. Public high schools must offer at least three and require at least one of the following five arts areas: media arts; dance; music; theater; and visual arts.*



meet graduation standards, and to use evaluation results to improve instruction and curriculum (120B.10).

## High School Graduation Requirements in the Arts

Meeting academic standards and earning at least one credit in the arts are requirements for high school graduation in Minnesota (120B.02[c]). Minnesota Statute (120B.024), states that students must successfully complete the following high school level course credits for graduation, (5) one credit in the arts... A course credit is equivalent to a student successfully completing an academic year of study or a student mastering the applicable subject matter.

The 2008 Revised Minnesota Academic Standards in the Arts are published as Minnesota State Rules for four distinct grade groupings: *Grades 1-3 - 3501.0800; Grades 4-5 - 3501.0805; Grades 6-8 - 3501.0810; Grades 9-12 - 3501.0815.* They were required to be in place in all schools as of September of 2010.

## Arts Education Assessment Requirements

A school, school district, or charter school must determine locally if a student has met the required academic standards in the arts, (120B.11) as follows:

*A school board shall have in place an adopted written policy that includes a process for evaluating each student's progress toward meeting academic standards and identifying the strengths and weaknesses of instruction and curriculum affecting students' progress (subd 2 [2])*

Current statute guides districts to evaluate the impact of instruction and curriculum on students' abilities to

## Teacher Licensure

Statute also outlines the professional qualifications necessary to teach the arts. Persons found to be *qualified and competent for their respective positions* are issued licenses by The Board of Teaching (122A.18). Licenses exist for teachers of dance, music, theater, and visual arts. In addition, licensed Minnesota Elementary Teachers must demonstrate knowledge of fundamental visual and performing arts, including music, dance, and theater, concepts and the connections among them (8710.3200 [L]).

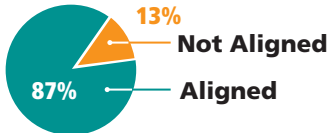
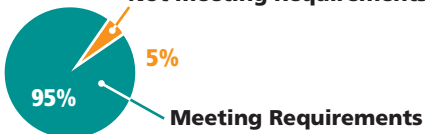
## College Admission

To be considered for admission to any Minnesota state college or university as a first-year student, applicants shall have completed one year of arts in grades 9-12 (visual arts and the performing arts of theater, music, dance, and media arts; Minnesota State Colleges and Universities Board Policies, Chapter 3.4).

# Policies

## Minnesota Has High Standards for Arts Education,

State policies for arts education, created by the Minnesota Legislature and expected to be implemented by school districts, are recognized as some of best in the nation. Minnesota Academic Standards in the Arts define arts learning to include all five major arts disciplines — dance, media arts, music, theater, and visual arts. While these state statutes and standards have led to significant access to arts courses, enactment of these policies at the school level lags significantly in dance and theater. Further, there is currently no system of accountability to ensure that districts adhere to these policies.

	<h3>Academic Standards Alignment</h3> <p>The Minnesota Academic Standards in the Arts contain specific expectations for learning in the arts for all K-12 public schools in the state. 87% of schools have aligned their curriculum with the state arts standards.</p>	<p>87% of schools have aligned their curriculum with the standards.</p>  <table border="1"> <tr> <td>Not Aligned</td> <td>13%</td> </tr> <tr> <td>Aligned</td> <td>87%</td> </tr> </table>	Not Aligned	13%	Aligned	87%												
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Aligned	87%																	
	<h3>Access to Arts Areas</h3> <p>State statute establishes four arts areas for elementary and middle schools — dance, music, theater and visual arts, and five areas — adding media arts — for high schools. Schools are required to offer three of the four arts areas to students in elementary and middle schools and three of the five arts areas in high schools. Minnesota schools have had difficulty complying with this requirement.</p>	<p>Percentage of Minnesota schools offering courses in at least three arts areas as required by state standards</p> <table border="1"> <tr> <td>Elementary</td> <td>28%</td> </tr> <tr> <td>Middle</td> <td>48%</td> </tr> <tr> <td>High</td> <td>48%</td> </tr> </table> <p>Access to the five arts disciplines in Minnesota high schools</p> <table border="1"> <tr> <td>Music</td> <td>95%</td> </tr> <tr> <td>Visual Arts</td> <td>99%</td> </tr> <tr> <td>Media Arts</td> <td>76%</td> </tr> <tr> <td>Theater</td> <td>51%</td> </tr> <tr> <td>Dance</td> <td>25%</td> </tr> </table>	Elementary	28%	Middle	48%	High	48%	Music	95%	Visual Arts	99%	Media Arts	76%	Theater	51%	Dance	25%
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	<h3>Graduation Requirements</h3> <p>Since 2003, state high school graduation requirements include one credit (one year) of arts instruction in at least one arts discipline (See the Appendix for the text of the requirement).</p>	<p>Percentage of all Minnesota high schools that meet or exceed the current graduation requirement for arts</p>  <table border="1"> <tr> <td>Not Meeting Requirements</td> <td>5%</td> </tr> <tr> <td>Meeting Requirements</td> <td>95%</td> </tr> </table>	Not Meeting Requirements	5%	Meeting Requirements	95%												
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# Policies

## But Some Schools Struggle to Meet the Minimums

	<h3>Weighting of Arts Courses</h3>							
●	<p>Arts courses in high schools do not always carry equal grade weight with other core subjects, including honors and advanced placement courses.</p>	<p><i>Percentage of all Minnesota high schools that weight arts courses equally with other core subjects</i></p> <table border="1"> <tr> <td>Regular Courses</td> <td>94%</td> </tr> <tr> <td>Honors Courses</td> <td>82%</td> </tr> </table>	Regular Courses	94%	Honors Courses	82%		
Regular Courses	94%							
Honors Courses	82%							
●	<h3>Arts Education in School Improvement Plans</h3>							
	<p>Most schools do not include the arts education goals as part of the school improvement plan.</p>	<table border="1"> <tr> <td>Elementary</td> <td>18%</td> </tr> <tr> <td>Middle</td> <td>23%</td> </tr> <tr> <td>High</td> <td>45%</td> </tr> </table>	Elementary	18%	Middle	23%	High	45%
Elementary	18%							
Middle	23%							
High	45%							

## Recommendations

### Academic Standards

We recommend Minnesota policymakers hold school districts accountable for ensuring 100% of students in the state are achieving academic standards in the arts as required by state law.

We recommend the Minnesota Legislature and policymakers a) maintain and strengthen the arts as core subject areas b) advance policies to ensure every child has the opportunity to participate and demonstrate achievement in arts education as part of a complete education.

We recommend the Minnesota Legislature require school districts to use the Minnesota Academic Standards in the Arts K-12 for student instruction and assessment, rather than allow districts the option of developing their own arts standards.

### Accountability

We recommend Minnesota policymakers require full implementation and accountability processes to measure adherence to the strong policies supporting arts education.

We recommend Minnesota policymakers include arts education in all longitudinal data systems in current development, or contemplated as part of Minnesota education policy, and require schools to publicly report on an annual basis information regarding (1) arts courses offered; (2) level of student participation in the arts; (3) student achievement in the arts based on assessments aligned to state standards; and (4) teacher course assignments in the arts.

We recommend the Perpich Center for Arts Education collaborate with the Minnesota Department of Education to produce an annual report on the status and condition of arts education in all Minnesota Schools.

### Implementation Resource

We recommend the Perpich Center for Arts Education continue to collaborate with the Minnesota Department of Education to improve the capacity of school districts and/or individual schools to implement a comprehensive, standards-based, sequential arts education based on state standards.

### Strategic Planning

We recommend that each school and district include arts education in strategic plans to ensure arts programs at the school level meet the Minnesota Academic Standards in the Arts.

### Course Weighting

We recommend school districts weight courses in the arts equally with all other courses in calculating a pupil's grade point average, including honors and/or advanced placement arts courses.

# Students

## Student Access to Arts Instruction is High,

Access to arts education in Minnesota schools is nearly universal. The fact that almost every school in the state offers at least one arts course for students across all grade levels indicates a healthy arts education environment. Music and visual arts tend to be the most widely available courses. Dance and theater disciplines have low participation levels primarily due to limited course offerings.

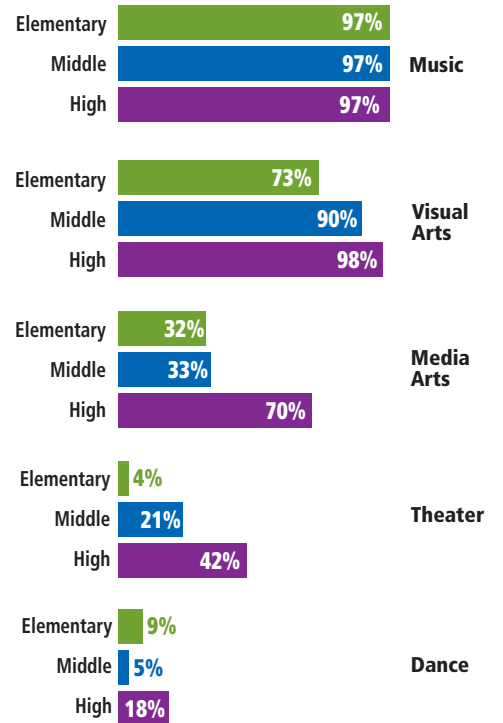
### Access to Arts Courses

There is wide access to music and visual arts courses in all Minnesota schools. Media arts courses are moderately available in elementary and middle schools and widely available in high school. Dance and theater are the least provided arts areas.

Percentage of schools offering courses in at least one arts area



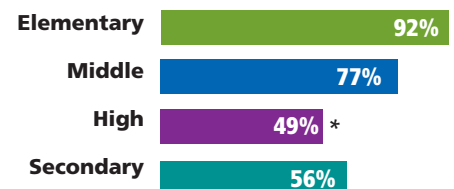
Percentage of schools offering courses in various arts disciplines



### Student Participation in Arts Education

Student participation in arts courses (as a percentage of total enrollment) is high across all grade levels.

Percentage of students participating in arts instruction (all arts areas)



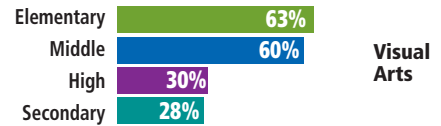
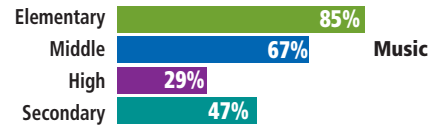
\*Participation is measured for a single year. A 49% participation level in High Schools is very strong since students have four years to meet state graduation requirements.

# Students

## However Participation Lags in Some Areas

### Percentage of Students Participating in Various Arts Areas

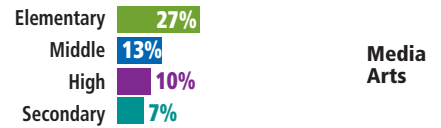
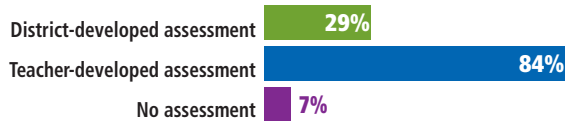
Music and visual arts show the highest participation levels of all the arts areas. The lower levels of participation for dance and theater are a result of fewer schools providing access to courses in these areas.



### Student Assessment

Most schools reported using either teacher-developed or district-developed assessments to measure student progress toward achieving the arts standards while 7% of schools reported “no assessment.”

Percentage of schools using various types of student assessment in arts



## Recommendations

### Access to Arts Areas

We recommend school administrators ensure that the number of arts areas offered meets or exceeds state requirements.

We recommend school districts ensure the assessment of every student’s learning and achievement of Minnesota Academic Standards in the Arts as required by law.

### Measuring Student and Teacher Performance

We recommend the Perpich Center for Arts Education continue to collaborate with the Minnesota Department of Education to develop measurement strategies for student achievement, teacher evaluation, and overall school performance in arts education, including common assessments aligned to state standards.

### Directing Resources to Low Performing Schools

We recommend that the Perpich Center for Arts Education identify schools where arts instruction is limited, and with partners, provide resources and support to strengthen arts education in these schools.

We recommend foundations and other grant-making agencies and organizations use these Report results to help direct resources to areas of greatest need.

# Educators

## Licensed Arts Teachers Are the Main

**“The Percentage of Elementary Schools With Full Time Arts Teachers is Lower than Other School Types.”**







Due to the nature of the coursework, it is highly desirable that arts are taught by Licensed Arts Teachers specifically educated to teach the arts area. While this is broadly the case in music and visual arts, it is not in dance and theater, where less than half of all schools use Licensed Arts Teachers for these arts areas\*.

Additionally, some elementary schools struggle to employ full-time Licensed Arts Teachers in all areas.

	Use of Licensed Arts Teachers	
●	<p>Nearly all schools (92%) use Licensed Arts Teachers (full time or part-time) as the primary providers of music and visual art instruction. The use of Licensed Arts Teachers for dance and theater lags well behind.</p>	<p><i>Percentage of schools using Licensed Arts Teachers for dance instruction (where instruction is offered)</i></p> <p><b>Elementary</b> 16%</p> <p><b>Middle</b> 8%</p> <p><b>High</b> 36%</p> <p><i>Percentage of schools using Licensed Arts Teachers for theater instruction (where instruction is offered)</i></p> <p><b>Elementary</b> 17%</p> <p><b>Middle</b> 46%</p> <p><b>High</b> 51%</p>
●	<p><b>Full and Part Time Arts Teachers</b></p> <p>The percentage of schools with a full time arts teacher is highest in middle school, closely followed by high school and elementary. Part time arts teachers are found primarily in elementary schools with smaller enrollments.</p> <p><small>*Other teachers may be authorized to provide instruction but do not hold an arts license.</small></p>	<p><i>Percentage of schools with full time arts teachers</i></p> <p><b>Elementary</b> 77%</p> <p><b>Middle</b> 96%</p> <p><b>High</b> 92%</p> <p><i>Percentage of elementary schools with full time and part time music and visual arts teachers</i></p> <p><b>Full Time</b> 72% <b>Music</b></p> <p><b>Part Time</b> 21%</p> <p><b>Full Time</b> 58% <b>Visual Arts</b></p> <p><b>Part Time</b> 40%</p>

# Educators

## Providers of Arts Instruction in the State

	<p><b>Professional Development</b></p> <p>A majority of schools/districts reported providing professional development for arts teachers in their arts areas. This percentage declines significantly for general classroom teachers responsible for teaching in the arts.</p>	<p><i>Percentage of schools offering professional development for arts teachers, by teacher type</i></p> <p><i>Licensed Arts Teacher</i>   <b>72%</b></p> <p><i>Classroom teacher with arts responsibility</i>   <b>23%</b></p> <p><i>General classroom teacher</i>   <b>26%</b></p>
	<p><b>Arts Coordinators</b></p> <p>Arts coordinators (or arts supervisors, as they may be known in other states) play an important role in facilitating arts programs across a school or district while efficiently managing resources. In Minnesota, arts coordinators are scarce, with few districts and even fewer schools being served. Other research has shown the presence of an arts coordinator has a positive impact on the overall quality of an arts program.</p>	<p><i>Percentage of schools served by an arts coordinator</i></p> <p><b>District-based</b>  <b>20%</b></p> <p><b>School-based</b>  <b>7%</b></p> <p><b>No Arts Coordinator</b>  <b>75%</b></p>

## Recommendations

### Licensure

**W**e recommend the Minnesota Board of Teaching develop a license or endorsement for teachers of media arts.

**W**e recommend all school districts comply with licensing requirements in all arts areas.

**W**e recommend the Perpich Center for Arts Education work in collaboration with higher education to help strengthen teacher preparation and professional development.

### Professional Development

**W**e recommend the Perpich Center for Arts Education, in collaboration with the Minnesota Department of Education and the appropriate professional organizations, increase the capacity of school and district administrators to understand and strengthen the impact of arts educators and programs on student success.

**W**e recommend the Perpich Center for Arts Education, in collaboration with the Minnesota Department of Education, higher education institutions, professional

organizations, and community organizations, develop and expand professional development opportunities for arts educators.

**W**e recommend that the Legislature provide necessary funding for providing professional development for teachers and administrators.

### District Arts Coordinator

**W**e recommend all districts employ or assign an Arts Coordinator to guide curriculum implementation, alignment of programs between schools, and the most effective use of personnel and resources.




# Resources

## Per-Pupil Arts Spending Reliably Indicates the

**“Nearly Two-Thirds of Schools Spend Less Than \$10 Per Pupil for Arts Each Year.”**

Within each school, per-pupil arts spending is an important indicator of higher or lower quality levels of arts education. Nearly two-thirds of all schools (64%) spend less than \$10 per pupil per year.

Per-pupil spending is defined as the funds allocated to curricular materials and support for the arts divided by student population. This does not including teacher salaries, overhead or capital expenses.

	Per-Pupil Spending	
	<p>Minnesota per-pupil spending on arts education is about at the median of nationwide schools that have been studied.</p>	<p><i>Level of per-pupil spending per year on arts instruction</i></p> <p><b>Elementary</b> <span style="background-color: #4CAF50; color: white; padding: 2px;">\$3.92</span></p> <p><b>Middle</b> <span style="background-color: #2196F3; color: white; padding: 2px;">\$6.65</span></p> <p><b>High</b> <span style="background-color: #9C27B0; color: white; padding: 2px;">\$12.42</span></p>
	<p><b>Two Cents Per Day for Elementary Arts</b></p> <p>When calculated on a per-pupil-per-day basis, Minnesota spends an average of 2 cents per day at the elementary level, 3.7 cents at the middle school and 7 cents at the high school level.</p>	
	<p><b>Outside Funding to Offset Budget Decreases</b></p> <p>Currently, 23% of all Minnesota schools report that they use outside funding to offset budget decreases with the highest at the middle school level, followed by elementary (27% and 25% respectively). This outside funding supports direct instruction, not optional or extra-curricular activities.</p>	<p><i>Percentage of schools using outside funds to offset budget shortfalls</i></p> <p><b>Elementary</b> <span style="background-color: #4CAF50; color: white; padding: 2px;">25%</span></p> <p><b>Middle</b> <span style="background-color: #2196F3; color: white; padding: 2px;">27%</span></p> <p><b>High</b> <span style="background-color: #9C27B0; color: white; padding: 2px;">15%</span></p>
	<p><b>Fees for Extra-Curricular Programs</b></p> <p>Nearly half (47%) of all schools reported charging fees for extracurricular arts activities.</p>	<p><i>Percentage of schools that charge fees for extracurricular arts activities</i></p> <p><b>Elementary</b> <span style="background-color: #4CAF50; color: white; padding: 2px;">33%</span></p> <p><b>Middle</b> <span style="background-color: #2196F3; color: white; padding: 2px;">60%</span></p> <p><b>High</b> <span style="background-color: #9C27B0; color: white; padding: 2px;">77%</span></p>



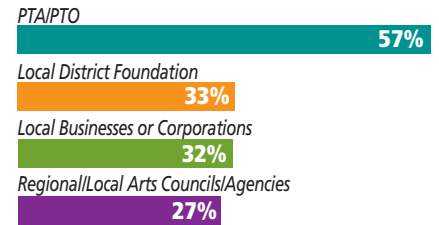
# Resources

## Quality Level of Arts Education in Schools

### Sources of Outside Funding for Arts Instruction

More than one-half (58%) of Minnesota schools receive funding for arts programs from non-district sources, such as Parent/Teacher groups and district foundations. Fifty-seven percent of elementary, 53% of middle and 71% of all high school arts programs are partly supported by outside resources. As stated on the previous page, of the schools receiving outside funding, 23% reported using these funds to offset budget decreases for direct arts instruction.

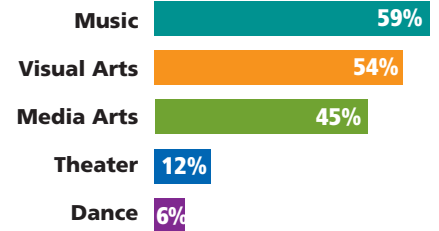
*Level of per-pupil-per-year spending on arts instruction*



### Use of Technology in Arts Instruction

Student use of technology in the arts is greatest at the high school level where more than 80% of high schools report the use of technology in most arts areas.

*Schools using technology in arts education*



## Recommendations

### Report Per Pupil Arts Spending

We recommend that per-pupil arts spending be reported and included in the Minnesota Data Reports for every public school.

### The 5% Goal

We recommend that schools and school districts allocate a minimum of 5% of total school budgets for curricular support and professional development to support arts education.

### Student Fees for Arts Activities

We recommend that schools explore ways to reduce or eliminate fees for student participation in arts education activities. Student fees create barriers for student participation in these programs.

### Model Schools

We recommend the study of Model Schools, as identified by the Minnesota Arts Education Research Project, from across all socioeco-

nomic areas. These Model Schools should be highlighted and lessons from these schools shared in order for schools to learn from one another.



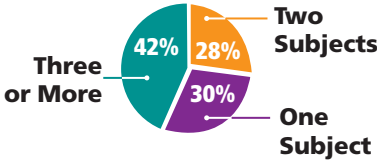
### Information Clearinghouse

We recommend the Perpich Center for Arts Education develop and maintain a centralized clearinghouse for information about arts education programs, policies, best practices, models, news and information to aid schools, districts and communities.

# Arts Integration

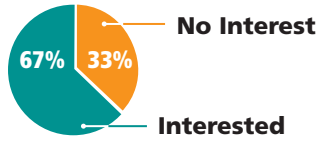
## Integrating Arts with Other Disciplines Is

The arts are powerful partners in making learning richer and more effective, including in other subjects. The arts can help students place historical events in cultural context, visualize abstract concepts and make richer connections with academic subject matter. Arts Integration is an instructional approach where arts teachers work collaboratively with teachers of other subjects to increase student learning by identifying, creating and applying authentic learning connections. This is the first time arts integration has been measured in any state. 67% of schools would like to introduce or increase arts integration, but need support to do so.

	<p><b>Arts Integration Acceptance</b></p> <p>In Minnesota, 46% of all schools report using arts integration as a teaching strategy, although this percentage varies by grade span.</p>	<p><i>Percentage of schools using arts integration</i></p>  <table border="1"> <thead> <tr> <th>Grade Span</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Elementary</td> <td>51%</td> </tr> <tr> <td>Middle</td> <td>39%</td> </tr> <tr> <td>High</td> <td>41%</td> </tr> </tbody> </table>	Grade Span	Percentage	Elementary	51%	Middle	39%	High	41%
Grade Span	Percentage									
Elementary	51%									
Middle	39%									
High	41%									
	<p><b>Regular Use of Arts Integration</b></p> <p>When probed further, the percentage of schools using arts integration on a regular basis is much smaller. "Regular use" is defined by at least one subject integrating the arts, once per week.</p>	<p><i>Percentage of schools that use arts integration on a regular basis</i></p>  <table border="1"> <thead> <tr> <th>Grade Span</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Elementary</td> <td>16%</td> </tr> <tr> <td>Middle</td> <td>14%</td> </tr> <tr> <td>High</td> <td>11%</td> </tr> </tbody> </table>	Grade Span	Percentage	Elementary	16%	Middle	14%	High	11%
Grade Span	Percentage									
Elementary	16%									
Middle	14%									
High	11%									
	<p><b>Arts Integration and Academic Standards</b></p> <p>The majority of schools using arts integration reported meeting the Minnesota Academic Standards in each subject area with 70% meeting the standards in two or more subjects.</p>	<p><i>Percentage of schools using arts integration that meet the Minnesota Academic Standards</i></p>  <table border="1"> <thead> <tr> <th>Number of Subjects</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>One Subject</td> <td>30%</td> </tr> <tr> <td>Two Subjects</td> <td>28%</td> </tr> <tr> <td>Three or More</td> <td>42%</td> </tr> </tbody> </table>	Number of Subjects	Percentage	One Subject	30%	Two Subjects	28%	Three or More	42%
Number of Subjects	Percentage									
One Subject	30%									
Two Subjects	28%									
Three or More	42%									

# Arts Integration

## Well-Accepted but not Practiced Regularly

	<h3>Lesson Planning</h3> <p>Schools using arts integration reported teachers are only occasionally able to plan lessons collaboratively with very few doing so on a regular basis.</p>	<p><b>Never</b> <b>Occasionally</b> <b>Regularly</b></p> <p>Percentage of schools where classroom teachers and arts teachers plan lessons together</p> <p>30% 64% 5%</p> <p>Percentage of schools where classroom teachers and arts teachers implement integrated lessons together</p> <p>38% 58% 4%</p> <p>Percentage of schools where schedule allows for joint planning between classroom and arts teachers</p> <p>38% 55% 7%</p>
	<h3>Introducing/Increasing Arts Integration</h3> <p>While the majority of schools see the value of arts integration for their students, there are logistical, policy and resource barriers to implementation. Two-thirds of schools reported an interest in introducing or increasing the use of arts integration.</p>	<p>Percentage of schools interested in introducing or increasing the use of arts integration</p>  <p>67% 33%</p> <p><b>No Interest</b></p> <p><b>Interested</b></p>
	<h3>Arts Integration Support</h3> <p>Schools identified areas where they could use support in increasing arts integration. The top five most requested areas of support are:</p>	<p>Teacher professional development in the arts 23%</p> <p>Teacher release time for co-planning 18%</p> <p>Arts integration resource materials 9%</p> <p>Professional development about arts integration research 8%</p> <p>On-site curriculum coordination 8%</p>

## Recommendations

### Improved Planning Time

We recommend that schools allocate common planning time for classroom and arts teachers using arts integration as an instructional strategy.

We recommend that arts teachers receive the professional development necessary to be effective arts integration leaders.

### Resources, Technical Assistance and Professional Development

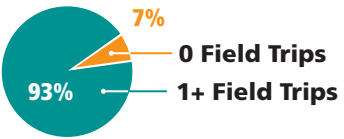
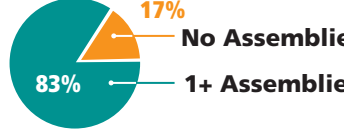
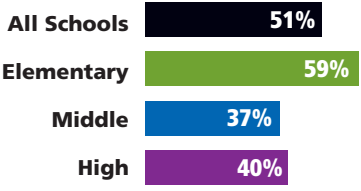
We recommend that the Perpich Center for Arts Education, along with higher education institutions, continue to develop resources and provide technical assistance for the 67% of schools looking to implement or increase arts integration.

We recommend the Perpich Center for Arts Education create a professional development program for school administrators to increase their understanding of how to implement meaningful arts integration at the school level.

# Community

## Schools Utilize Diverse Opportunities

Minnesota schools have many connections to community arts organizations. Whether through field trips, school assemblies, artist-in-residence programs or multi-year partnerships, the percentage of schools engaged with community organizations is as high as in any state in the country.\*

<p><b>Field Trips</b></p>	<p>Student field trips to museums, theaters, musical performances and exhibitions, or to engage in artistic experiences were provided by 93% of all schools in the state. Music (79%), theater (61%), visual arts (48%) and cultural/historical programs (34%) were the most popular experiences. For the schools not participating in field trips 62% cited transportation costs as the greatest barrier to field trips.</p>	<p>Percentage of all schools offering at least one field trip to an arts event**</p>  <table border="1"> <tr> <td>0 Field Trips</td> <td>7%</td> </tr> <tr> <td>1+ Field Trips</td> <td>93%</td> </tr> </table>	0 Field Trips	7%	1+ Field Trips	93%				
0 Field Trips	7%									
1+ Field Trips	93%									
<p><b>Assemblies</b></p>	<p>A large majority (83%) of Minnesota schools reported holding arts-based school assemblies, bringing cultural organizations and professional artists into the school to provide students with exposure to different artistic experiences. Music (67%), theater (51%), dance (33%) and cultural/historical programs (25%) were the most popular assembly types.</p>	<p>Percentage of all schools reporting at least one assembly that focused on the arts**</p>  <table border="1"> <tr> <td>No Assemblies</td> <td>17%</td> </tr> <tr> <td>1+ Assemblies</td> <td>83%</td> </tr> </table>	No Assemblies	17%	1+ Assemblies	83%				
No Assemblies	17%									
1+ Assemblies	83%									
<p><b>Artist-in-Residence Programs</b></p>	<p>Artist-in-Residence programs provide the opportunity for students to work with an artist for a focused period of time to enrich the overall education experience. These programs, in which artists have multiple contacts with a school, were engaged by 51% of schools with visual arts (24%), music (19%), and creative writing (10%) being the most popular.</p>	<p>Percentage of all schools hosting Artist-in-Residence programs**</p>  <table border="1"> <tr> <td>All Schools</td> <td>51%</td> </tr> <tr> <td>Elementary</td> <td>59%</td> </tr> <tr> <td>Middle</td> <td>37%</td> </tr> <tr> <td>High</td> <td>40%</td> </tr> </table>	All Schools	51%	Elementary	59%	Middle	37%	High	40%
All Schools	51%									
Elementary	59%									
Middle	37%									
High	40%									

\*Based on data from other states where similar studies have been conducted

\*\*Data over the last three years

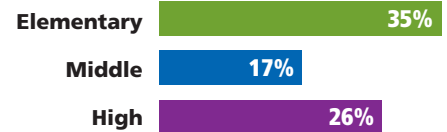
# Community

## Community Arts Organizations Provide

### Partnerships with Community-Based Arts Organizations

More than a quarter (28%) of schools reported being engaged in a multi-year partnership with a community arts organization.

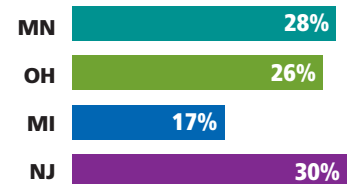
*Percentage of all schools engaged in a multi-year partnership with a community arts organization*



### Minnesota Schools Engagement with Cultural Organizations Compares Favorably to Other States

When comparing Minnesota to other states where data is available, Minnesota schools have some of the highest percentages of schools involved with community cultural organizations across all engagement types (assemblies, field trips, artists-in-residence and partnerships).

*Percentage of schools with multi-year partnerships\**



\* From states with comparable data

## Recommendations

### Cultural Opportunities

**W**e recommend funding be targeted to support multi-year partnerships between schools and cultural organizations to help students achieve Academic Standards in the arts.

### Transportation Issues

**W**e recommend that Minnesota arts and cultural organizations, the State Arts Board, and other funders continue to work together to find solutions to the barrier of transportation costs to schools taking field trips to arts and cultural organizations.

# The Minnesota Arts Education Index

In the measurement of arts education in Minnesota public schools, the research team needed to account for the differences in the art education experiences across the state.

To this end, an arts education “index” was calculated for each school. The index score is comprised of up to 29 (dependent on elementary, middle or high school index) different components. They include quantitative measures of:

- Courses, Student Participation, Teachers, Instruction, and breadth of Arts Offerings
- Facilities and Resources
- Policies, Professional Development, Supervision and Assessment
- Involvement with Community Resources

The index (one each for elementary, middle and high schools) is simply an arithmetic combination of scores related to survey responses on the various components of arts education in each school. The index scores are standardized, and therefore have a possible range from 0 to 1, where 0 would signify no attempt at all at arts education in the school, and 1 would mean a complete effort on every aspect of arts education measured in the study. A ‘1’ is nearly impossible to attain, and no school in our study did so.

Each of the components were calculated, summed, and then divided by 25 (elementary), 24 (middle) or 29 (high schools/secondary schools). For elementary schools, the index score ranged from a low of 0 to a high of .93. For middle schools, the range was 0 to .75, and for high schools and secondary schools, the range was 0 to .82. Because the calculations for elementary, middle and high school relied on slightly different formulas, the scores are analyzed based on school type.

## Multivariate Findings

The creation of the index score for each school allows the researchers to ask some interesting questions about what school characteristics relate to stronger arts education programs. The index score was used to build multivariate statistical models with the intent of identifying which of

several factors are most associated with high and or low levels of arts in the schools. Many things, if examined alone, are statistically related to the level of arts education in schools. What multivariate modeling does is ‘control for’ various factors to identify those that have a distinct statistical relationship with the level of arts education based on the index.

## Key Findings

- **Focus Rating:** Using multivariate modeling (ANOVAs and Linear Regression) the data revealed that when statistically ‘controlling for’ the school characteristics of: proportion of students with free/reduced price lunch benefits (this is a proxy for socioeconomic status of the student body), racial composition, school size and school geographic location (urban/suburban/rural), the arts education index is statistically positively related to the school’s Focus Rating (part of the Minnesota’s Multiple Measurement Rating or MMR); that is, high schools with higher arts education indices also have a higher Focus Rating.
- **Title One High Schools:** In addition, Title 1 status is also related to arts education index scores. High schools that are Title 1 high schools have statistically higher arts education indices when controlling for the other school factors (free/reduced price lunch, minority status, and geography).
- **GRAD Reading Assessment:** In a similar manner the research team found that student test scores for the state’s Graduation Required Assessment for Diploma (GRAD) reading assessment are also statistically related to the arts education index. When school socioeconomic status, minority status, school size, geography and Title 1 status are statistically controlled for, the arts education index is positively related to GRAD reading scores. That is, high schools with higher arts education indices had higher GRAD reading scores. The same analysis looking at GRAD math and GRAD writing scores, however, did not yield the same results. We found no evidence of a statistical relationship between GRAD math nor GRAD writing scores with arts education index scores of high schools.

It must be emphasized that this examination is purely correlational (one cannot assume any causative impact of *any* factor examined). However, these are very compelling findings.

The overall pattern of the data suggests that individual school administrator preferences, choices and the subsequent allocation of resources impacts the level of arts in the schools far more than other factors impacting the school environment. The disparity in arts education between schools — even when all else is equal — suggests that local decisions have a great impact on the level of arts education in any individual school.

## Methodology

All public school principals in Minnesota were requested by the Commissioner of Education to provide data on arts education from their school for this study. Data were provided via a special on-line questionnaire by Quadrant Arts Education Research. The data were then processed and put through an extensive statistical analysis, which is the basis of this report.

A single questionnaire was used. The survey was programmed to only show relevant questions based on the school type (Elementary, Middle, High, Secondary). The questionnaire was implemented during the 2010-2011 school year.

School administrators were contacted by the Commissioner of Education in September of 2010 advising them of the survey process and instructions. Data collection began on November 13, 2010 and the last completed questionnaire was collected on June 30, 2011.

### Survey Participation

Of the 1420 public (non charter) schools targeted for participation, 626 successfully completed a questionnaire, yielding a 44% response rate. A total of 376,924 Minnesota public school students were represented by this study.

Because of the high response rate there is only a  $\pm 2.95\%$  margin-of-error associated with these results due to

sampling variation. In other words, the results obtained are statistically equivalent (to three decimal points) to those obtained had all schools responded.

### Defining Schools for This Report

Minnesota schools in this report are represented by a majority of schools with at least one elementary grade (57%). The remaining schools had middle school grades (16%) and/or high schools (9-12) or secondary grades (7-12) grades (28%).

School types are mutually exclusive; a single building is only designated as being an elementary school, a middle school, high school or secondary school, depending on which grades they have enrolled. For the purpose of this report schools with 'elementary grades' are those with at least one grade from kindergarten through fifth grade. Middle school grades are grades six through eight. High school grades are grades nine through twelve. Secondary schools are grades seven through twelve. Secondary schools have been combined with high schools for most sections of this report except in areas where significant differences in the data occurred.

To view the complete survey instrument, survey instructions, communication to schools, data table reports and related materials go to:

<http://www.pcae.k12.mn.us/survey/legacy.html>



# Arts Links

- \*1 College Board. (2012). The College Board Partners with the National Coalition for Core Arts Standards. Retrieved September 27, 2012, from <http://advocacy.collegeboard.org/preparation-access/arts-core/news/college-board-partners-national-coalition-core-arts-standards>
- \*2 Vaughn, K., & Winner, E. (2000). SAT Scores of Students Who Study the Arts: What We Can and Cannot Conclude about the Association. *Journal of Aesthetic Education*, 34(3/4), 77-98.
- \*3 Minnesota Citizens for the Arts & the Forum of Regional Arts Councils of Minnesota. (2006). The Arts: A Driving Force in Minnesota's Economy. Retrieved September 27, 2012 from <http://mncitizensforthearts.org/wp-content/uploads/2008/03/statewidefinalreport.pdf>
- \*4 Woock, C., Lichtenger, J. & Wright, M. (2008). Ready to Innovate: Are Educators and Executives Aligned on the Creative Readiness of the U.S. Workforce? Report No. R-1424-08-KF, The Conference Board.
- \*5 Framework for 21st Century Learning. (2011). Partnership for 21st Skills. Retrieved September 27, 2012 from <http://www.p21.org/overview/skills-framework>
- \*6 Robelen, E.W. (2012). States Mulling Creativity Indexes for Schools. *Education Week*, September 27. Retrieved September 27, 2012 from [http://www.edweek.org/ew/articles/2012/02/02/19creativity\\_ep.h31.html](http://www.edweek.org/ew/articles/2012/02/02/19creativity_ep.h31.html)
- \*7 Neville, H. et al. (2008). Effects of Music Training on Brain and Cognitive Development in Under-privileged 3- to 5-year-old Children: Preliminary Results. In C. Asbury & B. Rich (Eds.), *Learning, Arts, and the Brain: The Dana Consortium Report on Arts and Cognition* (pp. 105-116). New York, NY: Dana Press.
- \*8 Scott, L. (1992). Attention and Perseverance Behaviors of Preschool Children Enrolled in Suzuki Violin Lessons and Other Activities. *Journal of Research in Music Education*, 40(3), 225-235.
- \*9 Catterall, J.S., Chappleau, R. & Iwanaga, J. (1999). Involvement in the Arts and Human Development: General Involvement and Intensive Involvement in Music and Theatre Arts. In E.B. Fiske (ED.), *Champions of Change* (pp. 1-18). Washington, DC. the Arts Education Partnership & the President's Committee on the Arts and the Humanities.
- \*10 Catterall, J.S., (2002). Involvement in the Arts and Success in Secondary School. In R. Deasey (Ed.), *Critical Links: Learning in the Arts and Student Academic and Social Development* (pp. 68-69). Washington, DC. the Arts Education Partnership.
- \*11 Ho, Y., et al. (2003). Music Training Improves Verbal Memory, *Nature*, 396, 128.
- \*12 Ho, Y., et al. (2003). Music Training Improves Verbal but Not Visual Memory: Cross-sectional and Longitudinal Explorations in Children. *Neuropsychology*, 17(3), 439-450.
- \*13 Catterall, James S. "Involvement in the Arts and Success in Secondary School." In R. Deasy (Ed.), *Critical Links: Learning in the Arts and Student Achievement and Social Development*, 2002. Washington, DC. the Arts Education Partnership.
- \*14 Minton, S. (2002). Assessment of High School Students' Creative Thinking Skills: A Comparison of the Effects of Dance and Non-dance Classes. In R. Deasy (Ed.), *Critical Links: Learning in the Arts and Student Academic and Social Development* (pp. 8-9). Washington, DC. the Arts Education Partnership.
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## Resources Available

In addition to the Minnesota Arts Education Research Project data, valuable information about the arts and learning is available on these websites. They can be visited online at:



[www.pcae.k12.mn.us](http://www.pcae.k12.mn.us)



[www.artsedresearch.org](http://www.artsedresearch.org)



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## ACKNOWLEDGMENTS

### Project Research Team:

Dr. Patricia J. Cirillo, Cypress Research  
Robert B. Morrison, Quadrant Arts Education Research

### Project Advisory Group:

Beth Aune, Director of Academic Standards and P-20 Initiatives, Minnesota Department of Education  
Jim Bartsch, Director of Education, Minnesota Orchestra  
Jim Bequette, Assistant Professor, Department of Curriculum & Instruction, University of Minnesota  
João Bichinho, Social Studies Teacher, Perpich Center for Arts Education  
Mary Cecconi, Parents United for Public Schools  
Carl Flink, Chair, Department of Theatre Arts & Dance, University of Minnesota  
Brian Goranson, Artistic Director, St. Paul Conservatory for Performing Artists  
Deb Hannu, Visual / Media Arts Educator, Duluth Public Schools  
Jeremy Holien, Visual & Media Arts Education Coordinator, Professional Development & Resources, Perpich Center for Arts Education  
Don Johnson, Executive Director, Minnesota Association of Secondary School Principals  
Calvin Keasling, Arts Content Lead and Arts for Academic Achievement Director, Minneapolis Public Schools  
Lynda Monick-Isenberg, Associate Professor and Teaching Artist Coordinator, College of Visual Arts  
David Myers, Director of the School of Music, University of Minnesota  
Senator Carla Nelson, Minnesota State Senate  
Josh Nelson, Manager of Educational Services, Lakes Country Service Cooperative  
Michelle Ponsolle, Director of Development & Programs, Minnesota Independent Schools Forum  
Suzanne Riley, Executive Director, Southeast Service Cooperative  
Sandy Rummell, former Minnesota State Senator  
Mary Schaeffe, Executive Director, Minnesota Music Education Association  
Jan Spencer de Gutiérrez, Supervisor Visual and Performing Arts, Saint Paul Public Schools  
Mark Springer, Dean of the College of Liberal Arts and School of the Arts, St. Cloud State University  
P. Fred Storti, Executive Director, Minnesota Elementary School Principals Association  
Howard Wilson, Principal, Four Seasons A+ School  
Barbara Wornson, Director, Main Street School of the Arts  
Alina Campana, Education Program Specialist, Perpich Center for Arts Education  
Pamela Paulson, Senior Director of Policy, Perpich Center for Arts Education  
Byron Richard, Education Program Specialist, Perpich Center for Arts Education

### Perpich Center for Arts Education Board Members

Peter Adolphson  
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