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III. PROGRAM NARRATIVE



Saint Paul Public Schools (SPPS) requests **\$1,223,586** in funding over four years to implement a districtwide initiative called

DigitalWorks: Engaging the Common Core through Media Arts.

DigitalWorks is designed to advance understanding of effective ways to integrate media arts into core academic curricula in alignment with Common Core standards. Through DigitalWorks, SPPS will create, deliver, and broadly disseminate a cohesive series of vertically-aligned, research- and standards-based curriculum units, formative and summative assessment tools, and corresponding professional development modules that integrate media arts into existing Math and Writing/English Language Arts (ELA) curricula in grades 3 through 8.

DigitalWorks builds on the district's *Strong Schools, Strong Communities* strategic plan, a comprehensive initiative to improve teaching and learning and support rigorous academic standards for students, in part by strengthening arts education districtwide. SPPS strategies for infusing arts across the district and strengthening arts pedagogy include: a). expanding the number of well-trained arts educators in the district; b). significantly increasing the number, variety, and quality of arts offerings and integrating an arts focus across multiple academic disciplines; c). designing a districtwide program of arts instruction to ensure that all students have access to high-quality, aligned and scaffolded arts-focused experiences; and d). creating a PreK-12 Creative Arts Articulation for district students to provide a focused arts pathway from preschool through graduation.

DigitalWorks represents the district's next strategic move toward ensuring that the arts play a leading role in the education of Saint Paul Public students. By combining the explicit teaching of media arts standards and students' use of new digital technologies with the rigorous demands of the Common Core standards, DigitalWorks will increase student achievement in literacy and

math, helping to close achievement gaps and ensure that all students are well-prepared for college and career.

A. COMPETITIVE PREFERENCE PRIORITIES

PRIORITY 1 – EVALUATION PLANS THAT PRODUCE VALID/RELIABLE EVIDENCE

The evaluation plan for DigitalWorks is designed to produce valid and reliable evidence and incorporates a quasi-experimental design meeting federal criteria: the valid and reliable evidence produced through this evaluation will help improve future projects and identify practices, strategies, and policies that may contribute to better student outcomes. An external evaluation consultant, Cooperative Ventures President, Christa Treichel, Ph.D., will conduct the evaluation, with support for data collection and analysis from SPPS Department of Research, Evaluation, and Assessment (REA) Manager of Program Evaluation Dr. Marian Heinrichs and an REA Research Specialist. Drs. Treichel and Heinrichs will explore the relationship between arts integrated instruction and student achievement in ELA and Math, using an interrupted-time-series design with two cohorts and two replications. One cohort will comprise 4th-grade students from two elementary school sites and the other will comprise 6th-grade students from two middle school sites (cohort sites are described in Section B3, *Quality of Project Design*, on page 12). Using the same interrupted-time-series design, the evaluation will also follow a comparison group consisting of students in the same grade levels but enrolled in other schools within the district who will not receive the treatment. Statistical controls (e.g. student demographic data) will be used to help limit bias due to non-equivalent groups. A replication will be conducted in Year Two for each cohort (e.g. students who are enrolled as 4th-grade and 6th-grade students at the cohort schools in Year Two will receive the treatment and will be followed) to test whether the implementation improved in Year Two and to increase the sample size. Details of the evaluation plan are described in the *Quality of Program Evaluation* section.

PRIORITY 2 – PROJECTS SUPPORTED BY STRONG OR MODERATE EVIDENCE

The DigitalWorks design is informed by evidence that supports the efficacy of arts integration for improving student outcomes. This evidence, described in more detail in Section B3, *Quality of Project Design* (on page 12), includes multiple studies that have linked increases in student performance to arts integration, including a report from the University of Minnesota Center on Center for Applied Research and Educational Improvement (CAREI) summarizing findings on the relationship between arts-integrated instruction and student achievement in the Minneapolis Public Schools. This study found that arts integration was associated with statistically-significant improvements in student learning; helped struggling students as well as those who were already high performers; and “in some cases, was more powerful for disadvantaged learners” (Ingram & Riedel, 2003¹). This study, which used three sets of multiple-regression models to estimate the effect of arts integration on student learning, found that student reading gains were greater for students whose teachers integrated arts into reading instruction and math gains were greater for students whose teachers integrated arts into math instruction. The study also found a relationship between the level of integration and the extent of the gains, showing that greatest benefit occurs when teachers integrate a lot and that a higher level of integration in one or two disciplines is better than a lower level in multiple disciplines. This finding suggests that teachers and students can get the most when efforts are focused on deeply integrating arts into one or two disciplines, rather than providing minimal integration across the entire curriculum.

Other research supporting the efficacy of arts education includes: a review of studies that found "significant relationships between rich, in-school arts programs and creative, cognitive, and personal competencies needed for academic success" (Burton, Horowitz, and Abeles, 1999²)

and research demonstrating that arts education had a significant effect on the academic and social success of students (Scheuler, 2010³).

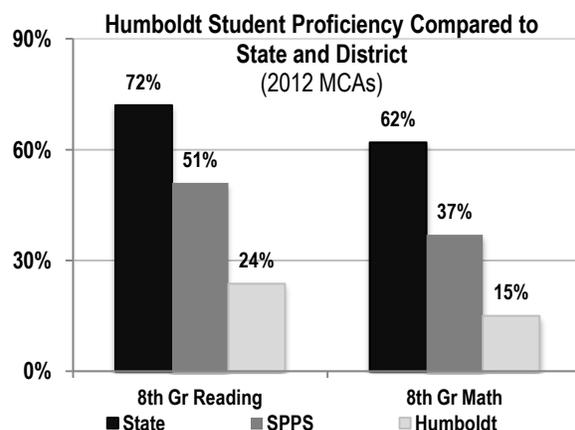
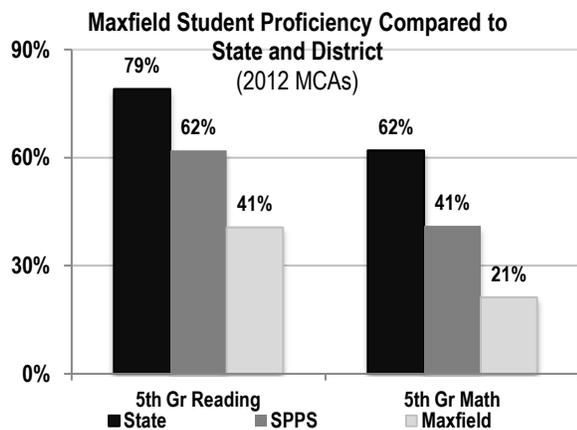
Evidence also supports the efficacy of selected project strategies in improving student academic achievement and teacher practice. Research-supported strategies include: **a).** focusing arts integration on the specific disciplines of ELA and Math, and integrating arts deeply into one or two disciplines, rather than broadly across the curriculum (Ingram & Riedel, 2003⁴, above); **b).** forging strong link between arts integration curricula and state or national standards and building “on a foundation of carefully-planned learning goals” (Chicago Public Schools, 2009⁵) based a sequential curriculum that incorporates instructional and assessment components in pedagogy and creates learning opportunities that achieve clearly-defined skill and knowledge objectives (Assey, 1999⁶); **c).** providing student-centered, hands-on, personalized learning opportunities to enable students to make sense of what they know and to demonstrate their learning (Silverstein & Layne, 2010⁷); **d).** providing professional development in media arts and technology integration and involving teachers in the process of developing curriculum units (Nobori, 2012⁸); **e).** providing coaching to help ensure effectiveness of implementation (Saraniero & Goldberg, 2011⁹; Knight, 2005¹⁰ and Knight, 2004¹¹); and **f).** giving students access to the digital media skills and technology they need to create, share, and present work that increases demonstrates high levels of learning (President’s Committee on the Arts and the Humanities, 2011¹²; Betts, 2006¹³).

PRIORITY 3 – PERSISTENTLY LOWEST-ACHIEVING SCHOOLS

DigitalWorks is designed to improve student achievement in Arts, Reading, and Math both at the four pilot elementary and middle schools and elementary and middle schools across the district. Two of the four pilot schools (Maxfield Elementary and Humboldt Middle) have been identified by the Minnesota Department of Education as “Priority Schools” under the state’s

Multiple Measurement Rating (MMR) system, the new accountability system Minnesota developed after receiving a waiver from federal No Child Left Behind requirements.

Minnesota’s MMR system identifies schools for recognition and support, creating three school accountability designations: Reward, Focus and Priority Schools. Priority Schools are the five percent most-persistently low-performing schools in the state, identified in one of two ways: 1) status as a School Improvement Grant School, or 2) the lowest MMRs in their grade classification group (elementary, middle school, high school, other). Priority schools are required to collaborate with the Minnesota Department of Education to develop a school turnaround plan based on the federal turnaround principles. As the charts below show, 5th-grade students at Maxfield and 8th-grade students Humboldt lag far behind students districtwide on the Minnesota Comprehensive Assessments (MCAs) in Reading and Math. Similar discrepancies exist at these schools at all grade levels tested.



PRIORITY 4 – USE OF HIGH QUALITY DIGITAL TOOLS OR MATERIALS

The intentional infusion of high-quality digital visual, graphic, and recording arts tools is central to the DigitalWorks model. Curriculum units developed throughout the grant-funded project period and beyond will incorporate project-based learning activities that place high-quality tools in the hands of students, enabling young people to actively participate through

hands-on arts experiences that help students become more engaged and take more control over their own learning (Edutopia, 2007¹⁴; Fiske, 1999¹⁵).

As described in Section B3, *Quality of Project Design*, on page 12), DigitalWorks integrates laptop computers, iPads, and wifi cameras into curriculum, providing students access to a wide range of media arts tools and online resources that will increase achievement of content standards as students create and share media artworks. Experiences include, but are not limited to: a). using digital photography, video production, and animation software and apps (e.g., PhotoForge, Final Cut Pro, and iMovie) and wifi enabled cameras to create and publish a variety of text types, create visual representations of math concepts, and create interdisciplinary projects; b). using studio art software and apps (e.g., Artstudio, iDraw, Sketchbook, and ArtRage) to create and share inspirational art; and c). using music production software (e.g., GarageBand) create and edit group compositions that help students increase reading fluency and language acquisition as they learn about song structure, rhythm, phrasing, and note values.

These tools are intended for hands-on use by the students themselves, rather than being used solely by the teacher for classroom demonstration. Student-driven creation and sharing of work through digital tools not only engages students directly in learning but also provides teachers the opportunity to personalize instruction and immediately assess student progress on projects and give feedback on what students have created. These digital tools help students learn to generate and analyze new ideas as they create, explain, and share their visions and interpretations more effectively with others.

The comprehensive set of core curriculum units created through the DigitalWorks project will focus on creative and effective ways to use these and other high-quality digital tools to engage students in the classroom. A key focus of the project is on providing ongoing training not only on the curriculum units themselves but also on the use of digital tools, helping prepare

teachers to effectively use technology to improve instruction (Sandholtz, 2001¹⁶; Silverstein et al., 2000¹⁷; Coley, Cradler, & Engel, 1997¹⁸).

B. SELECTION CRITERIA

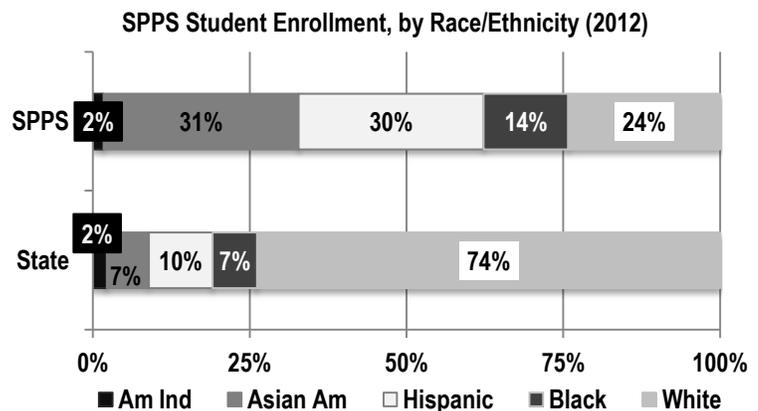
1. NEED FOR PROJECT

a). Addressing the Needs of Students at Risk

The City of St. Paul, Minnesota is part of the Twin Cities metropolitan area, a seven-county region in central Minnesota with just under 3 million residents. While in years past, St. Paul’s population was racially homogeneous, over the past three decades, families from many different backgrounds have made the area their home and St. Paul has become racially-, ethnically-, and linguistically diverse. Today, the city is home to both the largest urban Hmong population in the world and to sizable Somali and Chicano/Latino communities.

With over 39,000 students, Saint Paul Public Schools is one of the three largest school districts in the state, serving students in 63 schools, including 43 elementary, 13 secondary, and five alternative learning centers. Over the past 30 years, the student population of the district has diversified far more rapidly than has either the population of the city as a whole or the population of the state, which remains predominantly white, English-speaking, and middle-class.

As the charts to the right and below illustrate, the majority of SPPS students today are low-income students of color, many of whom speak a home language other than English. While each of the state’s top three school districts serves a relatively-comparable number of students, the student population of SPPS is more diverse: the district



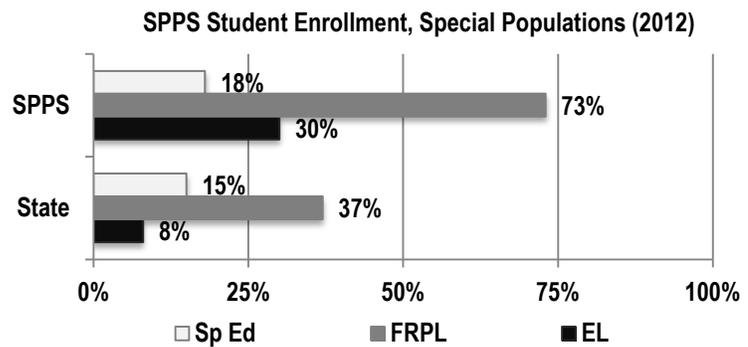
serves more students of color, more English Learners, and more low-income students than either of the other two largest Minnesota school districts.

While increasing diversity has infused the community and area schools with new energy and cultural richness, it has also brought new

challenges, which spring in large part from entrenched economic and educational disparities between the mostly middle-to-upper-income white community and low-income communities of color.

Disparities in educational attainment are clearly underscored by the achievement gaps that exist among Minnesota’s students. Despite the state’s overall high performance in education,¹ some groups of students are being left behind. On the 2011 National Assessment of Educational Progress (NAEP) fourth-grade Reading assessment, for example, Minnesota had the nation's 8th-largest gap between Latino and White students, the 9th-largest gap between Black students and White students, and the 10th-largest gap between low-income students and middle-to-upper income students.

Gaps are equally evident on state-administered assessments: In 2012, 69% of the state’s White students met Math proficiency benchmarks on the Minnesota Comprehensive Assessments, compared with only 59% of Asian students, 39% of Hispanic students, and 33% of

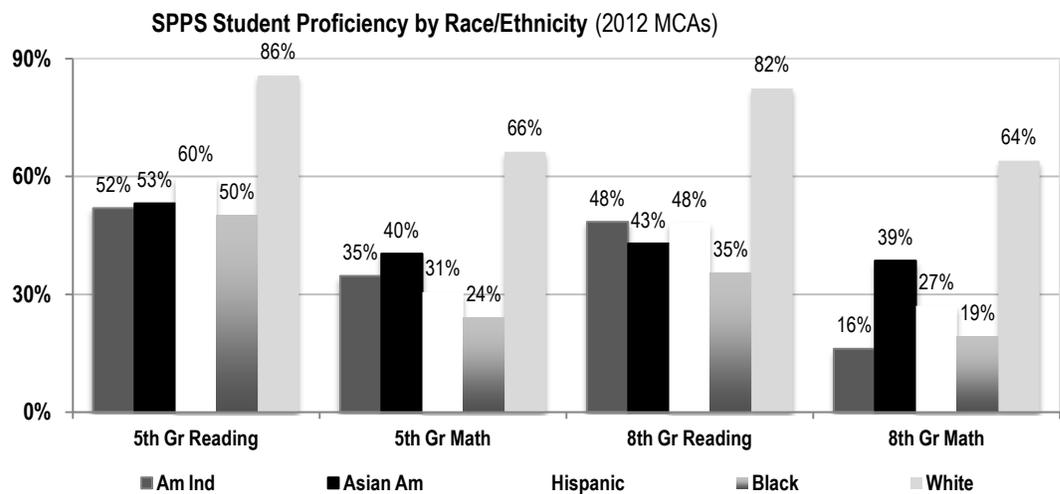


¹ On the 2011 National Assessment of Educational Progress (NAEP), MN ranked 2nd in the nation in fourth-grade Reading performance, 3rd in fourth-grade Math, and 9th in eighth-grade Reading.

Black students; 85% of White students met Reading proficiency benchmarks, compared with 48% of Asian students, 54% of Hispanic students, and 46% of Black students.

These statewide gaps are magnified in the Saint Paul Public Schools, where differences in academic outcomes exist at every point along the educational continuum, particularly in the critical core subjects of Math and Reading, as illustrated in the charts below. The first chart shows the differences among racial/ethnic groups in the percentage of students who met or exceeded proficiency benchmarks on Minnesota Comprehensive Assessments (MCAs) in 5th and 8th-grade Reading and Math. As the following chart illustrates, a far lower percentage of students of color scored proficient in each subject/grade category on the MCAs in 2012 than did White students, with the largest gaps evident between White and Black students. Similar gaps exist between

the general student population and low-income students, English Learners, and students eligible for Special Education services.



b). Addressing the Need to Strengthen Arts Integration

Strengthening arts education is a key district priority and SPPS is actively expanding the number of arts educators in the district; significantly increasing the number and variety of arts offerings; and more deeply and comprehensively integrating an arts focus across multiple academic disciplines at all grade levels. In addition, SPPS is developing a districtwide program

of arts instruction to ensure that all students have access to high-quality, aligned and scaffolded arts-focused experiences. One critical effort in the district's arts expansion is the development of a PreK-12 Creative Arts Articulation, which comprises four elementary schools (Four Seasons, Linwood-Monroe, Mississippi Creative Arts, and Saint Paul Music Academy); a newly-created Creative Arts Middle school, set to open Fall 2013; the district's Creative Arts High School.

However, despite the district's commitment to arts education, budget limitations mean that not all schools in the district are arts-rich, and some lack even basic levels of arts programming, meaning that students, who are predominantly low-income students of color, lack access to the kinds of arts-focused instruction and tools that develop creative thinking and are linked to improved academic outcomes.

2. SIGNIFICANCE

DigitalWorks provides an unparalleled opportunity for advancing the practice and assessment of arts integration, adding to national understanding of "what works" for schools and districts seeking to expand their arts integration efforts, and aligning standards and practice in technology and the arts – particularly media arts – with core academic subjects.

The National Coalition for Core Arts Standards (NCCAS) has recognized the need for national standards in the discipline of media arts as well as the need to examine the links between the National Standards for Arts Education and the Common Core State Standards in ELA and Math (College Board, 2011¹⁹). While many states have technology standards and some have arts standards, few examples of complete sets of standards exist to guide instruction in the use of technology in an arts context. Minnesota is one of only a few states that have articulated media arts standards; as such, the state is playing a key role in shaping the direction of the discipline nationwide.

DigitalWorks contributes significantly to the national conversation about arts integration, particularly integration of media arts. Through the process of designing and implementing project elements, SPPS will not only create a nationally-accessible repository of standards-aligned work that infuses best practices in arts teaching and learning across the curriculum. DigitalWorks will enable SPPS to develop and articulate an effective process for creating valid assessments of student learning in arts-integrated Writing/ELA and Math curricula that is technology-driven, project-based, and aligned to new Common Core standards, focusing assessments on ways to measure not only students' acquisition of content knowledge but also their ability to think critically and collaborate with peers. As an early implementer of the Common Core and Media Arts standards in statewide assessments Minnesota is leading the way for the nation in:

- developing standards-aligned media arts units of study that can both be broadly disseminated for use by other schools and districts;
- creating an effective process for media arts integration in core academic subjects that can serve as models for similar project in other districts;
- building models for supporting teachers who are providing classroom instruction to students who growing up in the digital age; and
- measuring student learning in ways that go well beyond answering multiple-choice questions and focus on assessing students' ability to apply knowledge and skill in context.

DigitalWorks will also create models for aligned learning across a large district and for blending new technology into district infrastructure, including developing a framework for professional development that incorporates hands-on access for teachers to the tools they need to use in their classrooms and creating online galleries of high-quality student digital work that can be broadly shared and disseminated to serve as models for teachers not only in St. Paul, but also

in district across the county. By creating PD modules that are digitally-based for easy, asynchronous access and easy sharing, DigitalWorks will enable teachers to implement curricula even in districts where arts integration professional development may be limited.

DigitalWorks will also add substantially to the national conversation about education for English Learners by developing media arts integration strategies designed to effectively meet the needs of English Learners. As the visionary leader of a district whose enrollment is almost one-third English Learners, SPPS District Superintendent Valeria Silva is credited with “helping to change the national conversation about second-language learners”(Education Week, 2013²⁰) through the innovative approach of keeping EL students in mainstream classrooms with content teachers who closely partner with English-as-a-second-language teachers to provide support to those students still learning the language. The proposed project will build on that work by bringing EL teachers into the curriculum writing process for arts integration curriculum units and working to integrate strategies that can work for bilingual students in both co-taught and standard classrooms. In the same way, DigitalWorks will directly address the needs of special education students in the classroom, by bringing Special Education teachers into the curriculum design process and drawing on the unique capacity of technology to support learning for students with special needs.

3. QUALITY OF PROJECT DESIGN

The DigitalWorks program design is grounded in extensive analysis of research both about the overall efficacy of arts integration in improving student outcomes and about specific effective practices for integrating media arts and technology into core academic subjects. The way in which this research has informed program design is provided in research citations included in the narrative responding to Priority 2 (on page 3), and throughout the following narrative section.

DigitalWorks advances the goals of the district's Strong Schools, Strong Communities (SSSC) comprehensive initiative to improve teaching and learning and support rigorous academic standards for students, in part by strengthening arts education districtwide. As part of this broader vision, SSSC builds on a long-standing district commitment to the arts and to the promise of arts integration as an effective model for improving student achievement, and identifies multiple strategies for strengthening arts education within a broader push to improve teaching and learning in all disciplines. These strategies include:

- Creating the conditions for every school to transform learning by giving teachers not only a well-rounded curriculum, but also the training, direction and support they need to deliver quality instruction to every student. This strategy includes strengthening the district's focus on the arts by expanding the number of arts educators in the district, significantly increasing the number and variety of arts offerings, and more deeply and comprehensively integrating an arts focus across multiple academic disciplines.
- Creating an aligned system of learning that emphasizes clear expectations for managed instruction and leads to coherent and sustained implementation and monitoring of key instructional practices, including ensuring that units of study are consistent across schools. This strategy includes creating a districtwide program of arts instruction to ensure that all students have access to high-quality, aligned and scaffolded arts-focused experiences.
- Giving students high-quality school choices in their own community, in part by providing every student with a clear and coherent academic pathway from PreK through graduation. This strategy includes creating a PreK-12 Creative Arts Articulation for district students by strengthening arts programming at Mississippi Creative Arts and other arts-focused elementary schools and at the district's Creative Arts High School, implementing a new Creative Arts Middle School to serve the grade levels between elementary and high school,

and fully aligning arts instruction among the three schools to ensure an effective PreK-12 articulation.

a). Project Overview

The proposed DigitalWorks project will advance the district's SSSC vision by: 1). significantly strengthening arts programming in elementary and middle schools districtwide and creating a sustainable infrastructure for arts teaching and learning in the district; 2). creating vertically-articulated arts integration curricula that will align learning in grades 3 through 8 and set the stage for further expansion and alignment of arts programming in the district; 3). providing teachers with training, direction and support they need to deliver effective media-arts-integrated instruction to every student; and 4). supporting the district's PreK-12 Arts Articulation. DigitalWorks will promote arts integration at three different implementation levels in the district: first, significantly enhance and expand arts pedagogy in district arts-rich schools; second, strengthen arts programming and more deeply infuse media arts into ELA and Math curriculum in schools with art specialists but no formal arts focus; and third, bring the arts into the classroom in schools with no current arts programming, substantially increasing student access and exposure to effective, research-based opportunities for arts learning.

Through these efforts, the DigitalWorks model will:

- Develop, deliver, and broadly disseminate a discrete set of media-arts-integrated Writing/ELA and Math curriculum units from grades 3 through 8, including professional development modules and related assessments that the district can disseminate broadly and that can expand to incorporate all grade levels in future years;
- build the capacity of instructional leaders and teachers to integrate media arts concepts and technology effectively into the classroom;

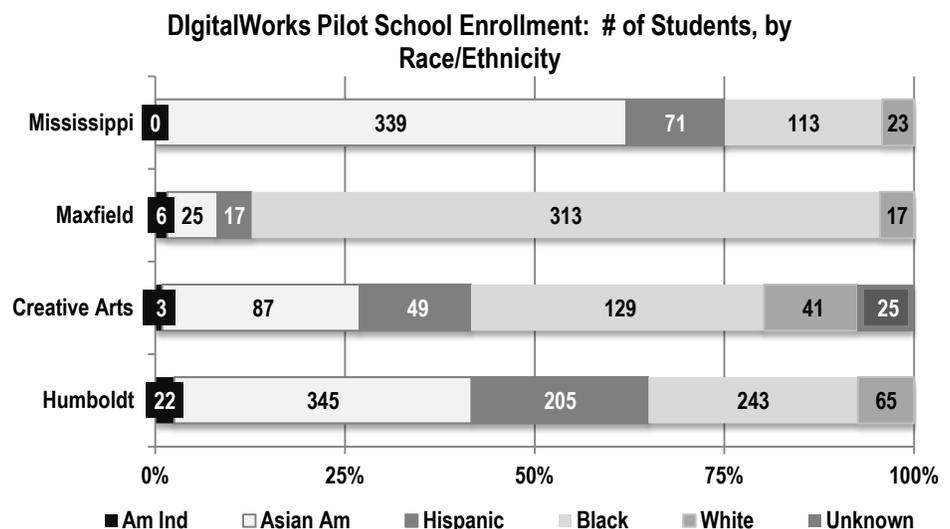
- create a framework for virtual sharing of information, resources, student work, and instructional best-practices through easily-accessible online portals.

DigitalWorks will be piloted at two elementary and two middle school sites: Mississippi Elementary School, a newly-created Creative Arts Middle School, Maxfield Elementary School and Humboldt Middle School. The project will be scaled out to all SPPS elementary and middle schools in phases and by the end of the fourth year, all DigitalWorks elements will be implemented for all SPPS 3rd-through-8th grade students and teachers districtwide.

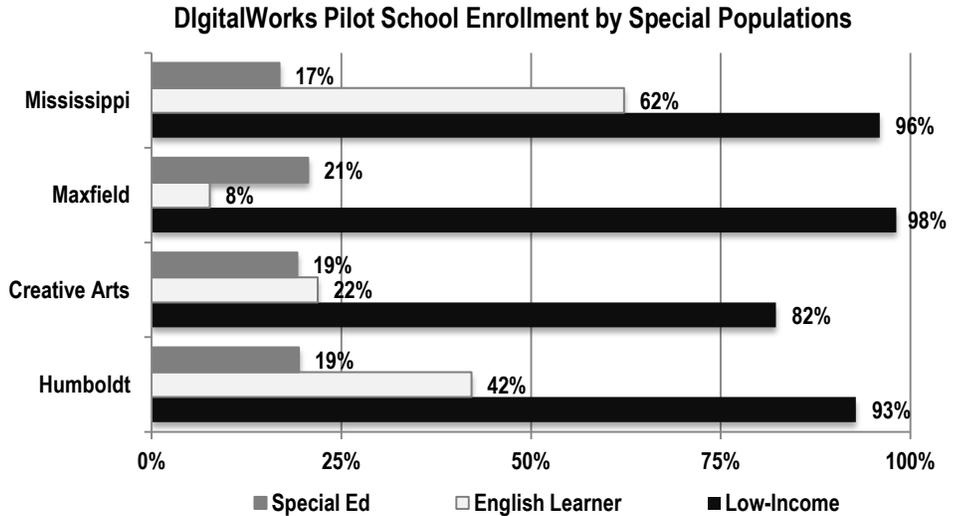
As the following charts show, the majority of students at each of the DigitalWorks pilot school sites are low-income children of color, many of whom speak a home language other than English (primarily

Hmong or Spanish). At Humboldt Middle and Maxfield Elementary, proficiency levels are well below expectations and the schools lag behind both the district and the state in all core

academic areas. As noted in the narrative for Priority 3 (on page 4), both schools have been identified by the as “Priority Schools” under the state’s new Multiple Measurement Rating (MMR) system²¹, an accountability system developed after Minnesota received a waiver from federal No Child Left Behind requirements.



Both Mississippi Elementary and the new Creative Arts Middle schools are part of the district's new PreK-12 Creative Arts Articulation, which provides an arts-focused pathway to graduation for



district students. Both schools offer a strong arts focus and extensive arts professional, curriculum, and instructional resources. In contrast, Maxfield Elementary and Humboldt Middle lack an arts focus, although both offer some music programming. Including both types of schools intentionally in the program design provides an effective way to develop and measure the effectiveness of programming that addresses the needs of diverse schools, facilitating the scale out of the project districtwide.

b). Project Goals and Objectives

DigitalWorks' overarching goals are to: 1). improve student achievement and close achievement gaps by infusing the media arts in the core academic subjects of Math and ELA and 2). improve teacher effectiveness by providing targeted professional development and support for integrating technology and media arts pedagogy into classroom teaching.

To reach these goals, DigitalWorks is designed to achieve three key objectives:

- 1). Increase the percentage of students at the four pilot school sites who demonstrate proficiency on state standardized assessments of Math and Reading. Progress toward this goal will be measured by student performance on a). the Northwest Education Association's Common

Core-aligned Measures of Academic Progress (MAP) assessments in Reading, Math, and Language; and b). the Minnesota Comprehensive Assessments (MCA) tests in Reading and Math, which are aligned with national academic standards in Math, including National Council of Teachers of Mathematics (NCTM) standards and Common Core ELA standards.

- 2). Demonstrate proficiency for students at the four pilot schools in curricular assessments of arts-integrated Media Arts, Math, and ELA learning. The project team, participating teachers, and the external evaluator will work together to develop grade-level formative and summative assessments for the students participating in the project each year. Individual student assessment scores will be translated into one of three levels of proficiency: exceeds proficiency, proficient, or not yet proficient.
- 3). Improve teacher effectiveness in designing, delivering, and measuring arts integrated student learning. Teacher effectiveness will be measured through online post-workshop surveys developed and administered by the external evaluator, with input from the curriculum-development team. Surveys will focus on knowledge of content standards and arts integration, and ability to design and deliver arts integrated lessons, to measure student learning in arts integration, and to incorporate technology into arts integrated lessons.

c). Project Design

The DigitalWorks design is informed by evidence that supports the efficacy of multiple program elements in improving student academic achievement, student engagement, and teacher capacity. Research-supported elements include: a). focusing arts integration on the specific disciplines of ELA and Math, and integrating arts deeply into one or two disciplines, rather than broadly across the curriculum (Ingram & Riedel, 2003²²); b). forging strong link between arts integration curricula and state or national standards and building “on a foundation of carefully-planned learning goals” (Chicago Public Schools, 2009²³; Assey, 1999²⁴); c). providing student-

centered, hands-on, personalized learning opportunities to enable students to make sense of what they know and to demonstrate their learning (Silverstein & Layne, 2010²⁵); d). providing professional development in media arts and technology integration and involving teachers in the process of developing curriculum units (Nobori, 2012²⁶); e). providing coaching to help ensure effectiveness of implementation (Saraniero & Goldberg, 2011²⁷; Knight, 2005²⁸ and Knight, 2004²⁹); and f). giving students access to the digital media skills and technology they need to create, share, and present work that increases demonstrates high levels of learning (President's Committee on the Arts and the Humanities, 2011³⁰).

1). Arts Integration Curriculum in ELA and Math

Arts integration curriculum units, formative and summative assessments, professional development modules, and evaluations of professional learning will be designed and implemented by the DigitalWorks Arts Integration (AI) Team, comprising the Project Manager and three Arts Integration Coaches (one Arts, one Math, and one ELA). The Arts Integration Team will work with Lead Teacher Teams from the pilot schools and with the external evaluation consultant to develop all components, focusing on vertical alignment and the critical transition from elementary to middle school. Lead Teacher Teams will include ELA and Math classroom teachers from grades 3 through 8 as well as elementary and middle schools specialists in Arts, English-as-a-Second-Language, and Special Education.

Each DigitalWorks curriculum unit will build upon existing district standards-based curricula and be grounded in research-based best practices and in state and national standards, including:

- Minnesota's newly-redesigned K-12 English Language Arts (ELA) Standards, which incorporate national Common Core ELA Standards. While many states have adopted the Common Core in ELA, Minnesota is leading the way among states in implementing those standards through state-administered proficiency assessments.

- Minnesota’s State Arts Standards, which reflect the national standards developed by the Consortium of National Arts Education Associations (CNAEA) and articulate what students should know and be able to do in dance, music, theater, visual, and media arts. Minnesota is one of only a few states that have articulated media arts standards and the state is playing a key role in shaping the direction of the discipline nationwide.
- Minnesota’s State Math Standards, which draw extensively on the National Council of Teachers of Mathematics (NCTM) Principles and Standards for School Mathematics and NCTM Focal Points and reflect an increased level of rigor that prepares students with the knowledge and skills needed for success in college and the skilled workplace.
- International Society for Technology in Education’s (ISTE) teacher standards, which guide professional development to help teachers master basic computers/technology concepts, personal/professional use, and applications in instruction.

The core of the DigitalWorks project is the intentional infusion of high-quality digital media arts tools using strategies that have been shown to improve both student achievement and teacher effectiveness. Through the project, SPPS will develop and implement curriculum units that incorporate project-based learning activities that place these high-quality tools in the hands of students, enabling young people to have direct involvement with the arts and learn various disciplines through hands-on arts experiences, actively engaging with artistic content, materials, and methods (Fiske, 1999³¹) that make learning more student-centered and help students not only become more engaged, but also take more control over their own learning (Edutopia, 2007³²).

Alignment of all curricular components will occur in both the scaffolding of the concepts and in the pedagogy used in the multiple grades. Each unit will go through an extensive research-design-assess cycle to ensure a quality product and will incorporate the Artful Thinking approach (Ritchhart, Palmer, Church, & Tishman, 2006³³), an approach to teaching creative thinking that

uses six routines to explore artistic works and subjects across the curriculum and deepen art experiences. Units are intended to increase student mastery of grade-level standards in Arts/Media Arts, ELA and Math; increase student understanding of media arts technology; and improve student skill in the use of technology for creating, sharing, and presenting work that demonstrates understanding.

DigitalWorks will engage students in using high-quality digital tools through *laptop computers, iPads, and wifi enabled cameras* that give students access a wide range of media arts tools and online resources to strengthen their learning of literacy and math concepts as they create and share media artworks. Experiences include, but are not limited to: a). using digital photography and video production software and apps (e.g., PhotoForge, Final Cut Pro, iMovie) and wifi enabled cameras to: draft, revise, and publish a variety of text types; create visual representations of math concepts, event sequences and digital narrative, functional, and informational texts; and, animation software to create interdisciplinary projects; b). using studio art software and apps (e.g., Artstudio, iDraw, Sketchbook, and ArtRage) to create and share inspirational art; and c). using music production software (e.g., GarageBand) as oral rehearsal and publishing tools for writing, to increase reading fluency and language acquisition; and to learn about song structure, rhythm, phrasing, and note values as students create and edit group compositions.

With video software and apps, the dynamic fusion of art and technology enables students bring objects, drawings, and images to life using still-frame capture for clay sculptures, paper cutouts, flipbooks, storyboards and more. With photography software and apps, students can independently and in groups to produce original animations complete with sound effects and edit their final work digitally. Studio arts software and apps lets students draw, paint, and even virtually “sculpt” on the screen, affording students experiences that they couldn’t have in

traditional media such as paint, including letting them work in layers with transparency, undo their mistakes, zoom in for more detail, resize, crop, rotate to create good compositions, through an intuitive interface. Using digital tools, students and teachers can upload work into programs like Photoshop for further refinement, and then easily reproduce works, share them with friends and family, or post them in the DigitalWorks online gallery or on other online production-sharing websites.

In DigitalWorks classrooms, tools are intended for hands-on use by the students themselves, rather than being used solely by the teacher for classroom demonstration. Student-driven creation and sharing of work through digital tools not only engages students directly in learning but also provides teachers the opportunity to customize instruction for individual students and immediately assess student progress on projects and give feedback on what students have created. The tools are particularly relevant for teaching English Learners and students with Special Needs (New York State Education Department, 2010³⁴; SouthEast Initiatives Regional Technology in Education Consortium, 2005³⁵).

2). Professional Development

As existing best practices call for the integration of arts and digital technology under the umbrella of national standards in core academic subjects, teachers face the challenge of implementing arts integration instruction in their classrooms, including implementing engaging digitally-based activities using technology and tools they may have limited experience with or comfort using. Without professional development training for teachers, the possibilities and promise of arts integration and digital tools for improving learning both in the arts and in core academic subjects will not be fulfilled. Effective arts integrated education will require changes in teachers' understanding, comfort levels, and classroom practices, requiring them to get up to speed on technologies their students (the so-called "digital natives") may have facility using.

DigitalWorks is designed to significantly enhance teacher effectiveness and facility with media arts technology at the pilot schools and at schools throughout the district by providing multiple opportunities for professional development, coaching and modeling, and sharing of best-practice strategies. The DigitalWorks Arts Integration (AI) Team will participate in the required annual conference and other external workshops and conferences, including local and national conferences organized by the National Alliance for Media Arts and Culture, the Independent Filmmaker Project, the MN Filmmaker Conference, the International Digital Media and Arts Association, TIES Education Technology Collaborative, the Kennedy Center, Arts Education Partnership, and/or media arts workshops organized by the Perpich Center for Arts Education.

The Arts Integration Team will provide support for teachers during the development and scale out of the project, including facilitating DigitalWorks planning sessions and team-meeting discussions, providing job-embedded professional development through coaching; and designing, implementing, or coordinating the wide range of professional development opportunities. The AI team will collaborate with community teaching artists in media and visual arts to deliver PD that is relevant to project goals. Lead Teacher Teams will support the Arts Integration Team in providing professional development during the districtwide scale out, making multimedia presentations at PD sessions, teaching model lessons, or serving as peer mentors.

A key focus of the project is on providing ongoing training not only on the curriculum units themselves but also on the use of digital tools, helping prepare teachers to effectively use technology to improve instruction (Sandholtz, 2001³⁶; Silverstein et al., 2000³⁷; Coley, Cradler, & Engel, 1997³⁸). DigitalWorks PD will help teachers successfully employ project-based instructional strategies to engage students and build content knowledge and skills and use a

variety of digital media tools, effectively incorporating technology into their pedagogy.

DigitalWorks PD modules will be digitally-based for easy, asynchronous access and easy sharing, enabling teachers to implement curricula even in districts where arts integration professional development may be limited.

DigitalWorks professional development implementation will begin with teachers at the four DigitalWorks pilot schools and expand to all grade 3 through grade 8 teachers (see *Project Rollout Schedule* on page 43). Professional development for pilot school teachers will cover: a). using and troubleshooting new technology (including laptops, iPads, wifi-enabled cameras, and projectors), software, and apps; b). effective ways to integrate technology use in classroom instruction; c). media arts content and Arts Standards (including state Media Arts Standards), Common Core ELA standards, and national and state Math standards; d). defining effective arts integration and discovering natural connections between content areas; and e). curriculum writing and assessment strategies for project-based learning. Professional development for elementary and middle school teachers districtwide will focus specifically on the DigitalWorks arts integration curriculum.

As a result of this professional development, teachers of students in grades 3 through 8 districtwide will understand and incorporate into their practice: MN standards for Media Arts, ELA, and Math; Visual and Media Arts vocabulary and Media Arts concepts; media literacy and its relationship to core ELA and Math curricula; research that informs the use of media arts in teaching and learning. Through hands-on engagement with media arts technology and concepts in professional development, teachers will come to understand media arts elements, principles, and concepts. In the process, they will learn to think and communicate as designers and artists and to integrate media arts into other curricula they teach. They will increase their hands-on teaching skills, learning to help students create stop-motion movies and other forms of digital art;

connect the process of making art to core academic concepts; and develop design skills, graphic literacy skills, and skills that knit together pictures and words into unified presentations. The sequence of curriculum unit, PD module, and assessment development is provided in the *Project Rollout Schedule*, on page 43.

DigitalWorks provides a well-timed opportunity for the district to significantly accelerate this work, by integrating media arts into Math and ELA programming in grades 3 through 8, shifting away from text-centric communication and toward pictures, diagrams, sound, movement, and other more universal forms of communication that are particularly effective with English Learning, Special Education students, and other students who struggle in school. Scaffolding and aligning programming will enable the district to provide a consistent, high-quality media arts experiences for all students districtwide. Drawing on expertise within two of the Creative Arts Articulation schools (Mississippi Creative Arts Elementary and Creative Arts Middle School), will enable the district to transfer professional capacity by having these schools serve as arts-integration models for schools with limited or no current arts programming as they strengthen their own teaching and learning by infusing media arts more deeply across the curriculum through participation in DigitalWorks.

The strategies DigitalWorks teachers will learn are particularly relevant to the large percentages of district students who are low-income, are English Learners, or have been identified for special education: Professional development will helping teachers learn to use the media arts to create an environment that is open and welcoming to all students, one in which multiple student voices and perspectives are acknowledged and honored. Engaging students in the media arts will help students develop their sense of self-efficacy, motivation, and confidence, which are all linked to student achievement and life success (Pajares & Urdan, 2006³⁹; Pajares, 1997⁴⁰).

Integrating media concepts into Math and ELA through engaging, hands-on, project-based learning opportunities enables educators to:

- deepen student understanding of Arts, Math, and ELA concepts, by placing them in context and helping students learn content and skills as they create and share their own work products;
- broaden student understanding of the arts disciplines through exposure to socially- and culturally-relevant activities that encourage and honor multiple students perspectives and help them make connections between arts and core academic subjects, improving student performance in Reading and Math; and
- increase interest in arts by engaging students directly in the creation of culturally- and personally-relevant work.

d). Project Timeline

Milestone	Date	Responsibility ²
Year One	Oct' 13 to Sep '14	
Convene Guidance Team; Hire Arts Integration (AI) Team	Sep - Nov	DPD
Refine evaluation plan, as needed	Oct - Nov	DPD, EC & REA
Identify Pilot School Lead Teachers for 4 th and 6 th grade	Nov	DPD

² *DPD = DigitalWorks Project Director; EC = Evaluation Consultant; REA = Research, Assessment, and Evaluation; AI = Arts Integration; CIPD = Curriculum, Instruction, and Professional Development.*

Milestone	Date	Responsibility ²
Purchase technology: laptops, iPads, wifi cameras, etc.	Nov	DPD & AI Team
Conduct in-depth review of Arts/Media Arts, Math, and ELA standards and relevant SPPS curriculum	Nov & ongoing	DPD & AI Team
Conduct research/attend trainings on AI best practices	Nov & ongoing	DPD & AI Team
Pilot School Teacher training in curriculum- and assessment-development strategies (4 th - and 6 th -grade)	Nov & ongoing	DPD, CIPD & AI Team
Pilot School Teacher training in the use of digital tech (4 th - and 6 th -grade)	Dec & ongoing	DPD, CIPD & AI Team
Curriculum writing for 4 th - and 6 th -grade units and assessments	Jan to Mar	AI Team, EC & Lead Teachers
Expand district online Arts Integration resources	Jan & ongoing	DPD & AI Team
Implement 4 th - and 6 th -grade units in pilot schools	Mar & ongoing	AI Team & Lead Teachers
Use implementation feedback to create 4 th - and 6 th -grade PD modules for scale out	Mar to Jun	AI Team & Lead Teachers
Review Year One progress; plan for Year Two adjustments	Jun	DPD & AI Team
Develop online gallery of student projects from the year	Jun to Sep	AI Team
Identify Y2 Pilot School Lead Teachers (5 th and 7 th grade)	Aug	DPD & AI Team

Milestone	Date	Responsibility ²
Summer professional development for Pilot School Teachers	Aug	DPD, CIPD & AI Team
Year Two	Oct '14 to Sep '15	
Establish comparison group and analyze MCA/MAP data for Y1 treatment and comparison students	Oct to Nov	EC and REA
Continue to expand district online AI resources	Ongoing	DPD and AI Team
Pilot School Teacher training in curriculum- and assessment-development strategies (5 th - and 7 th -grade)	Oct & ongoing	DPD, CIPD & AI Team
Pilot School Teacher training in the use of digital technology (5 th - and 7 th -grade)	Oct & ongoing	DPD, CIPD & AI Team
Curriculum writing for 5 th - and 7 th -grade units and assessments	Oct to Jan	AI Team, EC & Lead Teachers
Training and support for teachers to administer assessments and student surveys, analyze data, and report findings	Feb to Jun	AI Team, EC & Lead Teachers
Implement 5 th - and 7 th -grade units in pilot schools (continue 4 th - and 6 th -grade implementation)	Feb & ongoing	AI Team & Lead Teachers
Use implementation feedback to create 5 th - and 7 th -grade PD modules for scale out	Feb & ongoing	AI Team, EC & Lead Teachers
Create additional 4 th - and 6 th grade units in Reading and Math	Feb & ongoing	AI Team & Lead Pilot Teachers
Review Year Two progress; plan for Year Three adjustments	Jun	DPD and AI Team

Milestone	Date	Responsibility ²
Develop PD teacher surveys	Jun to Jul	EC and AI Team
Expand online student gallery (student projects)	Jun to Sep	DPD and AI Team
Identify Y3 Pilot School Lead Teachers (3 rd - and 8 th -grade)	Aug	DPD and AI Team
Summer professional development for pilot school teachers	Aug	DPD, CIPD & AI Team
Year Three	Oct '15 to Sep '16	
Establish comparison group for replication, analyze data for Y2 treatment, comparison, and replication students	Oct to Nov	EC and REA
Pilot School Teacher training in curriculum- and assessment-development strategies (3 rd - and 8 th -grade)	Oct & ongoing	DPD, CIPD & AI Team
Pilot School Teacher training in the use of digital technology (3 rd - and 8 th -grade)	Oct & ongoing	DPD, CIPD & AI Team
Curriculum writing for 3 rd - and 8 th -grade units and assessments	Oct to Jan	AI Team, EC & Lead Teachers
Professional development in AI units for 4 th - and 6 th -grade teachers districtwide	Oct to Jan	AI Team & Lead Pilot Teachers
Implement PD teacher surveys, analyze data, and reporting	Oct to Jan	DPD, CIPD, AI Team, EC
Training and support for teachers to administer assessments and student surveys, analyze data, and report findings	Feb to Jun	AI Team, EC & Lead Teachers

Milestone	Date	Responsibility ²
Implement 3 rd - and 8 th -grade units in pilot schools (continue 4 th - through 7 th -grade implementations)	Feb & ongoing	AI Team & Lead Teachers
Use implementation feedback to create 3 rd - and 8 th -grade PD modules for scale out	Feb & ongoing	AI Team, EC & Lead Teachers
Create additional 4 th - through 7 th grade units in Reading and Math	Feb & ongoing	AI Team & Lead Teachers
Implement 4 th - and 6 th -grade units in all SPPS elementary and middle school classrooms	Feb to Jun & ongoing	AI Team & Lead Teachers
Review Year Three progress; plan for Year Four adjustments	Jun	DPD and AI Team
Expand student online gallery	Jun to Sep	DPD
Analyze teacher PD surveys	Jun to Sep	DPD, CIPD, AI Team, EC
Develop article for publication	Jun to Sep	EC
Year Four	Oct '16 to Sep '17	
Analyze MCA/MAP data for Y3 treatment, comparison, and replication students	Oct to Nov	EC and REA
Professional development in Arts Integration units for 5 th - and 7 th -grade teachers districtwide	Oct to Jan	AI Team & Lead Pilot Teachers
Implement PD teacher surveys, analyze data, and reporting	Oct to Jan	DPD, CIPD, AI Team, EC

Milestone	Date	Responsibility ²
Implement 5 th and 7 th grade units all SPPS elementary and middle school classrooms	Feb to Jun & ongoing	AI Team & Lead Pilot Teachers
Create additional 3 rd to 8 th grade units in Reading and Math	Feb to Jun & ongoing	AI Team & Lead Pilot Teachers
Training and support for teachers to administer assessments and student surveys, analyze data, and report findings	Feb to Jun	AI Team, EC & Lead Teachers
Review Year four progress and plan for ongoing implementation and long-term sustainability	Jun	DPD and AI Team

e). Sustainability

The DigitalWorks program design centers on both the process and the resulting product of curriculum development: through DigitalWorks, SPPS will create a sustainable and replicable framework for arts integration, which will support future district arts integration efforts and can be used by districts throughout the country. The quasi-experimental evaluation of the program, together with the planned continuous-improvement cycle, will enable SPPS to identify effective practices and refine the model before broadly disseminating both the curriculum and PD modules themselves and accompanying implementation guidelines.

Through the process of designing and implementing project elements, SPPS will not only create a nationally-accessible repository of standards-aligned work that infuses best practices in arts teaching and learning across the curriculum but also develop a sustainable district framework for continued arts integration efforts, including the enhanced ability of educators to develop and implement integrated arts programming in multiple classroom settings. The curriculum units, curriculum assessments, PD modules, and PD assessments will continue to

guide instructional practice across the district, ensuring instructional quality beyond the end of the grant period.

4. QUALITY OF PROJECT PERSONNEL

Curriculum vitae for the Project Director and other key personnel are included in the appendices for this proposal. Brief descriptions of the qualifications and experience of each of these individuals is provided below.

1). Project Director

Christine Osorio, SPPS Executive Director of Curriculum, Instruction, and Professional Development (CIPD) will serve as Project Director. Osorio is in her second year SPPS CIPD Executive Director, where she provides strategic vision for teaching and learning throughout the district. Previously, Osorio spent seven years as the Principal of Wellstone Elementary School, where she developed a Spanish-Language Dual Immersion program within a diverse urban school. She also spent two years as the Assistant Principal of Adams Spanish Immersion Elementary. Osorio holds a BA in Spanish and a BAS in Elementary Education and ESL from the University of MN, Duluth. She has a Masters Degree in Curriculum and Instruction with an K-12 Administrative License from St. Mary's University. She also holds a Superintendent's license from Mankato State University.

2). Other Key Personnel

Other key personnel for the project include the following:

Program Manager Jan Spencer de Gutiérrez, SPPS Supervisor of PreK-12 Visual and Performing Arts. As Supervisor of PreK-12 Visual and Performing Arts Spencer de Gutiérrez has direct responsibility for district-wide arts curriculum and arts programming aspects for PreK-12 Visual/Media Arts, Music, Dance and Theatre education. She has served for over 20 years as arts leader and educator, implementing an innovation vision for arts education in SPPS and in the

community. She has been trained in arts integration by the Kennedy Center and delivers professional development in arts integration; Write to Learn and Engaging Classroom Assessment strategies. She serves as a board member for Project SUCCESS, a youth development organization; is on the Teaching Artist Advisory for the College of Visual Arts; is an advisor to Ordway Center Education programming and previously served as regional advisor to seven states in the Kennedy Center's Partners in Education Program. In addition, she has served as Project Manager for two US Department of Education (USDOE) grants and administers local grant projects. She has also presented arts integration sessions at national USDOE arts grant meetings and at an Americans for the Arts conference. Spencer de Gutiérrez holds Master of Arts in Arts Education, Painting and Drawing and has Administrative Licensure in Minnesota.

In addition to Osorio and Spencer de Gutiérrez, DigitalWorks Guidance Team Members include:

PreK-6 Elementary Literacy Program Administrator TeaJai Anderson Schmidt. As Supervisor of PreK-12 Literacy, Schmidt leads the implementation of comprehensive literacy programming, professional development, curriculum development, instructional pedagogy, instructional leadership in literacy, and assessment across the district PreK-12, including the implementation of the Common Core standards, Workshop Instructional Framework, Secondary Literacy Curricular Frameworks, Secondary Reading Intervention, common assessments, and a district-wide data management system. She been a classroom teacher, staff development coordinator, literacy coach, and district reading instruction specialist and serves on the Minnesota Department of Education's State Literacy Team Schmidt holds a B.S. in Elementary Education and an M.A.Ed. in Reading and Second Language Literacy Acquisition.

PK-12 Math Program Manager Kathleen Wilson. Wilson leads the implementation of comprehensive mathematics programming, professional development, curriculum development, instructional pedagogy, instructional leadership in mathematics, and assessment across the district for PreK-12, including implementation of the Minnesota Mathematics standards, elementary and secondary mathematics curricular and instructional frameworks, secondary mathematics intervention, common assessments, and a district-wide formative and summative math data system. Over the last 16 years, Wilson has been a high school mathematics teacher, math department chair, North Central Association committee chair, Site Council co-chair, Staff Development committee chair, Learning Team Facilitator coach, Data Team coach, Principal Professional Learning Community facilitator, and Assessment Developer. She serves on the Minnesota Council of Mathematics Teachers state leadership team. She holds a B.A. in Math and Secondary Math Education; her Masters in Educational Leadership is in process.

Director of Information Technology, Ivar Nelson. Nelson has served as SPPS Director Information Technology (IT) for the past two years, providing district leadership for the district's integration of technology in classroom instruction, business operations, and communication and working to align IT resources and activities with the district's Strong Schools, Strong Communities vision, focusing on the goals of student achievement, alignment, and sustainability. Nelson oversees a team of technology professionals who support daily technology operations, including a central Service Desk, and teams of trained and certified service desk technicians, field technicians, network technicians, and application support specialists who manage and support district technology resources. Prior to becoming Director of Information Technology, Nelson served as a district Technology Integration Specialist for over seven years. Nelson holds an MS degree in Information Technology - Information Media and a BS degree in Business.

Arts Integration Team Members will be Teachers on Special Assignment (TOSAs). The Team will include one half-time Arts TOSA, one half-time ELA TOSA, and one half-time Math TOSA who will serve as Arts Integration Coaches. Coaches will have strong background in their content area and grade range, experience in coordinating relevant education partnership programs, relevant educational research, and/or relevant curriculum development. Each AI Coach (TOSA) will possess the ability to work effectively as a member of a professional team; hold a valid and relevant teaching license issued by the Minnesota Department of Education; have at least five years of successful teaching experience in their content area and grade range; and be considered a master teacher. In addition, they will have experience implementing current professional development reform approaches; in team building and collaborative approaches to goal setting and instructional reform; and in working with students at multiple levels of achievement and demonstrated knowledge of the core components of the Minnesota Comprehensive Assessments.

SPPS Manager of Program Evaluation Dr. Marian Heinrichs is a doctoral-level researcher and educator with more than 15 years' experience in program evaluation and more than 20 years' experience teaching and developing courses at the university level. Dr. Heinrichs is recognized as an excellent communicator, particularly skilled in effective dissemination of research. Her expertise includes strategic planning, project management, cultural competency, building evaluation capacity, data confidentiality/privacy practices, and qualitative and quantitative evaluation skills.

External Evaluation Consultant Christa J. Treichel, Ph.D., President of Cooperative Ventures, has an undergraduate degree in Psychology, a graduate degree in Family Education, and a doctorate in Educational Research and Program Evaluation. Over the past 20 years, Dr. Treichel has worked with over 250 organizations in all phases of the evaluation process including

evaluating a variety of arts programs for clients such as the Ordway Center for Performing Arts, the Minnesota Orchestra, Illusion Theater, the Walker Art Center, the American Composer's Forum, and the Perpich Center for Arts Education. In 2008, her article titled, "Beyond the residency model: The teaching artist at work" was published in the Teaching Artist Journal while she implemented a quasi-experimental study with the Saint Paul Public Schools for the Arts in Education Model Development and Dissemination Grant Program (AEMDD) from the U.S. Department of Education. In 2012, she published an article titled, "Arts integration program uses collaborative culture to improve student learning" with ASCD (the Association for Supervision and Curriculum Development). Dr. Treichel is also currently using a quasi-experimental design approach in her work on a Math and Science Teacher Partnership Grant from the Minnesota Department of Education with the SW/WC Service Cooperative. In 2005 Dr. Treichel served as the President of the Minnesota Evaluation Association and she is an adjunct professor at the University of Minnesota.

All teachers who will participate on the arts integration unit development teams at the four pilot schools have been designated as "highly qualified," under Minnesota and federal definitions, as follows: a) teachers who are fully licensed in each core academic subject they teach have met the federal "highly qualified" requirements because they have earned an academic subject major and/or successfully passed the Minnesota teacher licensure content exam in each subject; b). general education teachers, including Title I teachers and teachers of English Learners (EL) who are not fully licensed for all core academic subjects they teach are required to demonstrate subject competence in order to attain federal "highly qualified" status; and c). elementary teachers are arts generalists by licensure and are required to take arts training. In addition to being designated as "highly qualified," all teachers at the four pilot sites will

participate in extensive professional development designed to enhance their skills, increase their effectiveness, and promote ongoing professional learning and growth.

3). Non-Discrimination

Saint Paul Public Schools does not discriminate on the basis of race, creed, sex, marital status, national origin, age, color, religion, ancestry, status with regard to public assistance, sexual or affectional orientation, familial status, or disability. Saint Paul Public Schools also makes reasonable accommodation to the known disabilities of qualified disabled individuals. This policy applies to all areas of education, employment, and programs and services operated by the school district. Every school district employee and school board member is required to comply with this policy, and the Superintendent has designated staff to coordinate the school district's efforts to implement this policy and to comply with and carry out the district's responsibilities under the following laws and their implementing regulations: a). Section 504 of the Rehabilitation Act of 1973 (the Americans with Disabilities Act); and Title IX of the Education Amendments of 1972, and the Civil Rights Act of 1964. The district's Human Resources Department is also in the process of arranging for job postings to be listed on a HBCU (historically black colleges and universities) website. All open positions will be posted according to district policy and women and people of color will be strongly encouraged to apply.

5. QUALITY OF THE MANAGEMENT PLAN

a). Management Structure

The design of the project's management structure is intended to ensure that all aspects of the DigitalWorks pilot and scale out can be implemented smoothly and effectively. The project will be guided at the district level by Christine Osorio, SPPS Executive Director of Curriculum, Instruction, and Professional Development (CIPD), who will serve as Project Director, chair the DigitalWorks Project Guidance Team, and oversee the work of the Project Manager. Osorio will

be responsible for ensuring integration of DigitalWorks with the district's Strong Schools, Strong Communities strategic plan and will serve as liaison with the other members of the SPPS Superintendent's Cabinet to ensure ongoing support for project sustainability within the district.

Approximately 2.5% of each Osorio's time (one hour a week) will be dedicated to guiding the DigitalWorks implementation and her time will be provided in-kind to the project from other district resources.

A Project Guidance Team will be responsible for providing ongoing guidance and input into program implementation, ensuring that all aspects of curriculum, professional development, and technology align with districtwide efforts. In addition to the Program Director and Project Manager, other Guidance Team Members include:

- PreK-6 Elementary Literacy Program Administrator TeaJai Schmidt, who will ensure project alignment with ELA content, standards, and best practices and provide support for the Arts Integration team in developing arts integration ELA curricula and professional development modules and conducting professional development at the pilot schools and during districtwide scale out.
- PK-12 Math Program Manager Kathleen Wilson, who will ensure project alignment with Math content, standards, and best practices and provide support for the Arts Integration team in developing arts integration Math curricula and professional development modules and conducting professional development at the pilot schools and during districtwide scale out;
- Director of Information Technology, Ivar Nelson who will be responsible for aligning all aspects of DigitalWorks media arts technology with current districtwide technology plans, procedures, and protocols.

Approximately 5% of each Guidance Team Member's time (two hours a week) will be dedicated to guiding the DigitalWorks implementation and their time will be provided in-kind to the project from other district resources.

The Program Manager will be Jan Spencer de Gutiérrez, SPPS Supervisor of PreK-12 Visual and Performing Arts. Spencer de Gutiérrez will provide the overall vision and direction for the project and have overall responsibility for guiding the implementation of the proposed arts integration pilot and scale out. She will ensure project alignment with Math content, standards, and best practices and provide support for the Arts Integration team in effective strategies for integrating arts into ELA and Math curricula and professional development modules and conducting professional development at the pilot schools and during districtwide scale out. She will chair the DigitalWorks Guidance Team and directly supervise the work of the three Arts Integration Team members. Approximately 10% of Spencer de Gutiérrez's time (four hours a week) will be dedicated to managing the DigitalWorks pilot and scale out and her time will be provided in-kind to the project from other district resources.

Day-to-day implementation of the Digital Works pilot and districtwide scale out will be implemented by an Arts Integration Team, comprised of three half-time (0.5 FTE) Arts Integration Coaches, who will be responsible for:

- defining the scope and sequence of curriculum units and professional development modules;
- collaborating with lead teachers at the pilot schools and with the external evaluation consultant to develop the DigitalWorks arts integration units, curriculum assessments, professional development (PD) modules and PD assessments, in alignment with state and national Standards;
- coordinating and aligning all aspects of the program;

- providing targeted arts- and technology-integration PD to pilot school teachers, including ongoing coaching;
- implementing the scale out of new units across the district, including working with principals to coordinate scale out with school schedules and needs and working with pilot school teachers to provide arts- and technology-integration PD to teachers across the district; and
- working with SPPS Research, Evaluation, and Assessment staff and the external evaluation consultant to ensure the project remains on track, constantly monitor progress toward defined program outcomes, and problem-solve issues that have the potential to impede successful project implementation.

With district-wide responsibility for implementation, the Arts Integration (AI) Team will ensure that programming and activities at each site roll out according to schedule and that teachers and other staff members are fully supported in their work. By providing ongoing job coaching and troubleshooting, the AI Team will help staff successfully incorporate the concepts and skills learned in professional development workshops and conferences into their classrooms so that they are able to more effectively use student data to make informed instructional decisions and use the technology available on campus to accelerate student learning.

The AI Team will convene a team of Lead Teachers from the four pilot school sites to provide input for the DigitalWorks arts integration units, curriculum assessments, professional development (PD) modules and PD assessments. These Lead Teacher Teams will include lead ELA and Math classroom teachers from grades 3 through 8 as well as elementary and middle schools specialists in Arts, English-as-a-Second-Language, and Special Education. These teacher teams will also work in partnership with the AI Team to provide professional development during the districtwide scale out, making presentations at PD sessions, teaching model lessons, or serving as peer mentors.

SPPS Research, Evaluation, and Assessment (REA) Department Manager for Program Evaluation Dr. Marian Heinrichs and External Evaluation Consultant, Dr. Christa Treichel will be responsible for collecting, analyzing, and reporting teacher and student data for evaluation of the program's progress toward intended outcomes. Dr. Heinrichs will be supported in this work by an REA Research Specialist. Ongoing consultation from REA staff and the External Evaluator will ensure that the evaluation for the proposed project is conducted as outlined in B6: *Quality of Program Evaluation*, on page 45. Dr. Treichel will be responsible for managing the overall evaluation plan, including working with the AI Team to develop the curricular assessments for students; analyzing and reporting on student assessment and survey data; analyzing, developing, administering and reporting on teacher surveys, and assisting with internal and federal reporting. She will also take the lead on writing an article about the project for publication. REA staff will be responsible for managing the quasi-experimental design component, analyzing and reporting on MCA data, and validating the curricular assessments with students. This partnership and process will enable the Consulting Team, district level administrators, and program leaders to make informed decisions about the extent to which program services are leading to desired outcomes and where changes or enhancements may be needed to improve project implementation, improve achievement for all students, and improve teacher effectiveness.

The members of the project's Arts Integration Team will work collaboratively to ensure that all elements of the program align with district Math and Reading instruction and with district, state, and national standards. The Team will also support integration of technology into classrooms and alignment with district policies for purchase and maintenance of technology as well as troubleshoot when necessary to ensure technology use is optimized on all pilot campuses and to prevent or minimize unnecessary technology downtime.

b). Continuous Improvement

A critical aspect of the project is the comprehensive project evaluation (described in Section B6, on page 45), which includes a matched-comparison group study to measure the effectiveness of program implementation at four pilot sites and guide continuous program improvement.

SPPS has a strong commitment to and extensive experience with collecting and using data for decision-making and continuous improvement. This experience includes a long history of partnership between the District's Department of Research, Evaluation, and Assessment (REA) and external research organizations such as Cooperative Ventures, Wilder Research, and the University of Minnesota to evaluate the effectiveness of programs and analyze what works. Over the past 10 years, SPPS has implemented two comprehensive initiatives that focus on the use of data to drive classroom instruction and system decisions about academic direction: The Multi-Tiered Systems of Support (MTSS) framework and the Project for Academic Excellence. MTSS is a three-tiered model of assessment, instruction, and intervention through which teachers and other staff provide high-quality core instruction and target services to students based on continuous assessment of student need. PAE is a professional development model designed to help teachers learn to how use student assessments to drive classroom instruction and to help administrators learn to use school-level data to drive systemic decisions about academic initiatives. Implementation of a successful school turnaround model provides another successful example of the use of data to drive decision-making and continuous improvement: At the beginning, the model focused only on student and family support services. When evaluation results⁴¹ demonstrated that this approach was not leading to academic gains for students, the District added a strong academic core to the model (as described earlier). Student achievement began to improve following this change. Another example comes from the District's successful Project Early Kindergarten preschool model, which evolved on the basis of feedback from

ongoing evaluation⁴² into a nationally-recognized, successful early learning framework that has been identified as a 4-star “Minnesota Parent Aware”⁴³ model for preschool programming.

Performance feedback and continuous improvement are integral to the design of the DigitalWorks project and are built into the overall program management. To ensure continuous improvement and feedback, The DigitalWorks Guidance Team and Arts Integration Team will meet jointly at least four times each year to engage in a continuous improvement cycle, looking at project process toward implementation milestones and at progress toward improvement objectives and benchmarks for students and teachers. Together with the program evaluators, the Teams will work to determine which strategies are effective, and which are less so, and recommend adjustments to the program if benchmarks are not being met. This ongoing improvement cycle, will include: 1). reviewing goals, objectives, and benchmarks; 2). collecting and reviewing evaluation reports on student formative and summative performance data and perceptual data, including feedback from principals, teachers, students; 3). collecting and reviewing disaggregated data, including race/ethnicity, socioeconomic status, EL status, and special needs); 4). reviewing program implementation against workplan milestones and reflecting on and analyzing progress toward goals, objectives, and benchmarks; and 6). identifying successes and barriers to progress and necessary program adjustments and creating a timeline with staff responsibility for implementing new strategies, as needed.

c). Project Rollout Schedule

YEAR ONE (2013-2014)		YEAR TWO (2014 - 2015)		YEAR THREE (2015 - 2016)		YEAR FOUR (2016 - 2017)	
Oct-Feb	Mar-Sep	Oct-Feb	Mar-Sep	Oct-Feb	Mar-Sep	Oct-Feb	Mar-Sep
Develop core 4 th /6 th units & assessments		Revise core 4 th /6 th curriculum, assessments & PD modules					
Provide PD in media arts technology to pilot school lead 4 th and 6 th teachers							
Implement core 4 th and 6 th curriculum/assessments in pilot schools; create DigitalWorks PD modules to support 4 th and 6 th scale out.				Develop additional 4 th and 6 th units			
Develop core 5 th and 7 th units & assessments		Revise core 5 th and 7 th curriculum and assessments and additional 4 th & 6 th units					
Provide PD in use of technology to pilot school lead 5 th and 7 th teachers							
Implement 5 th and 7 th curriculum/assessments in pilot schools; create PD modules to support 5 th and 7 th scale out				Provide Arts Integration PD to all SPPS 4 th and 6 th grade teachers across the district			
Implement 4 th and 6 th curriculum districtwide						Develop additional 5 th and 7 th units	

YEAR ONE (2013-2014)		YEAR TWO (2014 - 2015)		YEAR THREE (2015 - 2016)		YEAR FOUR (2016 - 2017)	
Oct-Feb	Mar-Sep	Oct-Feb	Mar-Sep	Oct-Feb	Mar-Sep	Oct-Feb	Mar-Sep
				Develop 3 rd & 8 th units & assessments		Revise core 3 rd and 8 th units and assessments and additional 4 th to 7 th grade units	
				Provide technology PD to pilot school lead 3 rd & 8 th teachers			
					Implement 3 rd & 8 th units & assessments in pilot schools; create PD modules		
						PD for all 5 th and 7 th grade teachers	
							Implement 5 th and 7 th districtwide

6. QUALITY OF PROGRAM EVALUATION

a). Evaluation Overview

The evaluation of the proposed DigitalWorks project will be implemented by SPPS' Research, Evaluation and Assessment (REA) Department in partnership with Dr. Christa Treichel at Cooperative Ventures. SPPS Manager for Program Evaluation Dr. Marian Heinrichs will oversee the project evaluation and will be supported by other staff from the district's Department of Research, Evaluation, and Assessment. Dr. Treichel will serve as the external evaluation consultant and will also provide guidance and input into the creation of the pre- and

post-course assessments that are critical to determining student acquisition of skills and content knowledge and to the pre- and post-module assessments that will measure increases in teacher knowledge of and ability to implement integrated media arts pedagogy in their classrooms.

b). Evaluation Methods

The evaluation plan is comprised of formative and summative approaches and a quasi-experimental design. Each will be described in greater detail in this section.

1). Formative and Summative Evaluation

Formative and summative data will provide project staff with information to document key components of the project for dissemination purposes, to monitor progress and make mid-course changes, and to determine the extent to which efforts are meeting the following objectives:

Objective 1: Increase the percentage of students at the four pilot schools who demonstrate proficiency on a standardized assessment of Math and Reading.

- *Benchmark I:* In Y2, project students from Y1 (4th and 6th graders) will demonstrate a higher rate of proficiency on the Minnesota Comprehensive Assessment in comparison to their school's grade-level MCA-III data collected prior to the project being implemented.
- *Benchmark II:* In Y3, project students from Y2 (4th through 7th grade) will demonstrate a higher rate of proficiency on the Minnesota Comprehensive Assessment in comparison to their school's grade-level MCA-III data collected prior to the project being implemented.
- *Benchmark III:* In Y4, projects students from Y3 (3rd through 8th grade) will demonstrate a higher rate of proficiency on the Minnesota Comprehensive Assessment in comparison to their school's grade-level MCA-III collected prior to the project being implemented.

The Minnesota Comprehensive Assessments, developed through the Minnesota Department of Education, are aligned with the Minnesota Academic Standards in ELA and Math. The MCA-III tests are administered each spring (data is available to schools the following fall) for the

grades of students involved in the project and will be used to inform curriculum and instruction decisions at the school and classroom level and to demonstrate student academic progress from year to year.

Objective 2: Students at the four pilot school sites will demonstrate proficiency in arts integrated curricular assessments of Media Arts, Math, and ELA learning.

- *Benchmark IV:* In Y2, the majority of project students from Y1 (4th and 6th graders) will achieve a level of proficiency (“proficient” or “exceeding proficient”) on their classroom arts integrated assessments.
- *Benchmark V:* In Y3, the majority of project students from Y2 (4th through 7th grade) will achieve a level of proficiency (“proficient” or “exceeding proficient”) on their classroom arts integrated assessments.
- *Benchmark VI:* In Y4, the majority of project students from Y3 (3rd through 8th grade) will achieve a level of proficiency (“proficient” or “exceeding proficient”) on their classroom arts integrated assessments.

The project team, pilot teachers, and the external evaluator will work together to develop grade-level arts integrated curricular assessments for the students participating in the project each year. This group will help to determine content validity of these measures. Tests of internal validity will also be conducted for these assessments to improve test items and control for confounding variables. Classroom teachers will administer assessments at the conclusion of arts integrated teaching. Individual student assessment scores will be translated into one of three levels of proficiency: exceeding proficiency, proficient, or not yet proficient in order to communicate about student learning across all teachers. Results will be immediately available for teachers at the classroom level. Results by grade level, school, and for all students involved

in the project will be available by the end of each school year. Findings will inform curricular and instructional decisions at the classroom and grade level.

Objective 3: Improve teacher effectiveness in designing, delivering, and measuring arts integrated student learning.

- *Benchmark VII:* Pilot teachers will report increased understanding of appropriate content standards and arts integration.
- *Benchmark VIII:* Pilot teachers will report an improved ability to design and deliver arts integrated lessons.
- *Benchmark IX:* Pilot teachers will report an improved ability to design arts integrated assessments to measure student learning.
- *Benchmark X:* Pilot teachers will report an improved ability to incorporate digital technology into arts integrated lessons.

Teacher effectiveness will be measured through online post-workshop surveys administered by the external evaluator. Online surveys will be developed prior to each workshop by the project team and the external evaluator. The evaluator will use SPSS data analysis software to analyze quantitative information and qualitative data will be analyzed thematically. Results from these surveys will be available to the team one month after the conclusion of data collection.

In addition to these three objectives, other key aspects of project implementation will be captured with the assistance of the AI team including documenting the background of teachers (such as past training and experience with arts integration), the number of hours of arts integrated instructional time delivered to students, and the arts integrated units of instruction (such as the content standards addressed and types of projects implemented).

Finally, a measure of student engagement and motivation will be administered annually to all 5th through 8th grade students in the pilot schools. This measure of non-academic outcomes will

complement the academic focus of the curricular assessments, MCA data, and findings from the quasi-experimental design. It also gives students an opportunity to provide feedback about their arts integrated learning experiences. The survey consists of 17 items (16 closed-items and one open-ended item) and was pilot tested and then administered in 2010-2012 with 1,275 Minnesota students in grades 5 through 12 for another arts integration project implemented by External Evaluator for the Perpich Center for Arts Education. Teachers will administer the surveys, with training and support from the External Evaluator, at the conclusion of arts integrated teaching and provide them to the External Evaluator who will provide data processing and analyses. Teachers will be given their classroom results within one month. Results by grade level, school, and for all students involved in the project will be available one month after all data has been received by the External Evaluator. Findings will inform curricular and instructional decisions at the classroom and grade level.

c). Quasi-Experimental Design

This project includes a quasi-experimental design reflecting the criteria for Priority 1. This design will produce valid and reliable evidence for improving future projects. In addition, the design will identify practices, strategies, and policies that may contribute to better student outcomes. The relationship between arts integrated instruction and student achievement in ELA and Math will be explored using an interrupted time series design with two cohorts and two replications. One cohort will be fourth-grade students from two elementary schools and the other will be sixth-grade students from two middle schools. A comparison group consisting of students in the same grade but from other schools within the Saint Paul Public School district not receiving the treatment will also be followed using the interrupted time series design. Statistical controls (e.g. student demographic data) will be used to help limit bias due to non-equivalent groups. Lastly, a replication will be done in year two for each cohort (e.g. fourth grade and sixth

grade students in year two will receive the treatment and will be followed) allowing the ability to test if the implementation improved in year two and also increase the sample size.

The sample of students receiving the treatment will consist of intact classrooms from four schools within the Saint Paul Public School district. The arts integration curriculum will be introduced into two of the schools in fourth grade and two of the schools in sixth grade for year one. Student achievement for both ELA and Math will be measured with the NWEA Measures of Academic Progress (MAP) assessment. This assessment is commonly given during the fall and spring of each school year at the district and can provide two measurement occasions in a single school year.

The interrupted time series will consist of three measurement occasions prior to treatment and at least three measurement occasions after receiving the treatment in both ELA and Math for each student. The three measurements prior to treatment will serve as the average baseline growth on the standardized ELA and Math assessments for the students in the treatment and comparison groups. This average baseline growth will then be compared to the average post-treatment growth to establish if there is a change in the slope of the average growth as a result of the treatment. In addition, there will be a test for an initial change (i.e. change in intercept) in the ELA and Math achievement. Lastly, differences among the treatment and comparison group will be explored statistically, including an exploration of disparities among student subgroups.

To help increase the reliability of findings, a comparison group consisting of students in the same grade but from other schools not receiving the treatment will also be followed. In addition to the comparison group, additional student level statistical controls will be used to limit bias due to non-equivalent groups such as, gender, ethnicity, free/reduced price lunch status, special education status, English language learner status, etc. ELA and Math assessment data will be

analyzed separately. The statistical model used to model the longitudinal data will be a hierarchical linear model and will take the following general form:

$$\begin{aligned}
 Y_{ij} = & \beta_0 + \beta_1 time_{ij} + \beta_2 trt_j + \beta_3 trt_j: time_{ij} + \beta_4 (time < 0)_j + \beta_5 trt_j: (time < 0)_j \\
 & + \beta_6 (time < 0)_j: time_{ij} + \beta_7 trt_j: (time < 0)_j: time_{ij} + \beta_8 grade_j + \beta_9 repl_j \\
 & + \beta_{10} grade_j: time_{ij} + \beta_{11} repl_j: time_{ij} + \beta_m X_j + b_{0j} + b_{1j} time_{ij} + \varepsilon_{ij}
 \end{aligned}$$

Where the i and j subscripts represent time and students respectively, Y_{ij} represents the response variable (student standardized test scores), β_0, \dots, β_m represent regression coefficients, $time_{ij}$ represents the measurement occasions (0 will represent the first treatment measurement occasion), trt_j represents an indicator variable reflection treatment status, $(time < 0)_j$ represents an indicator variable if the measurement occasions are pre-treatment, $grade_j$ represents the grade level group (i.e. either 4th or 6th grade), $repl_j$ represents an indicator variables of the replication number, X_j represents a matrix of student demographic variables, b_{0j} and b_{1j} represent random effects for intercept and time, and lastly ε_{ij} represents within student error, and lastly a ":" reflects an interaction. From the above equation, the three primary tests of interest will be: β_1 testing if the slope is different after the treatment, β_2 testing if the treatment group has a higher intercept at the first measurement occasion after treatment, and β_3 testing if the slope after treatment differs for the two treatment groups.

In the third year of the project, the External Evaluator will also develop an article about the project for publication to increase the amount of nationally available information on effective models for arts education that integrate the arts with standards-based education programs.

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