From STAR to STEAM

Standards-Based Arts & Technology Integrated Curriculum

An Arts in Education Model Development and Dissemination Grant

(Edited to delete references to Common Core and to revise the timeline to reflect 2015 initiation date)

Prepared for Dorchester School District Two

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Abstract: STAR to STEAM

Dorchester District Two will design and rigorously evaluate a project whose primary goal is to develop, test, revise, and implement a K-8 curriculum that integrates the newly adopted National Core Arts Standards into the South Carolina State Standards for ELA and Math. Objectives include increasing student achievement, closing achievement gaps, and increasing academic motivation for approximately 1,800 students per year.

A quasi-experimental design will evaluate growth over time by comparing standardized test scores within the target schools from one year to the next and will also track achievement compared to age-mates in two schools designated as control sites. All project activities will be carefully documented and evaluated using both formative and summative methods.

Hallmarks of the proposal include: an emphasis upon Science, Technology, Arts and Reading (STAR) in grades K-3 that will transition into an innovative STEAM project in grades 4-8, the creation of innovative Arts Discovery Labs where students and their teachers use the latest technology to explore the interfaces between the arts and academics, a strong management team that includes district personnel as well as independent consultants and evaluators; a strong emphasis upon the innovative use of technology at every grade level, alliances and partnerships with state and local arts organizations and the College of Charleston; ample opportunities for staff training and curriculum development; and an evaluation model that is both rigorous and comprehensive.

S2S: STAR to STEAM

Table of Contents

Abstract ... i

Absolute Priority ... 1

Competitive Preference Priorities ... 1

Selection Criteria:

(1) Need for project … 3

(a) needs of students at risk of educational failure … 3

(b) specific gaps or weaknesses … 3

(2) Significance … 7

(a) utility of the products … 9

(3) Quality of the project design … 9

(a) project reflects knowledge from research and effective practices … 10

(b) supported by strong theory … 16

(c) improve teaching and learning and support rigorous academic standards …19

(d) ongoing work of the applicant beyond the end of the grant …21

(4) Quality of project personnel …23

(a) applications for employment – nondiscrimination …23

(b) qualifications of key project personnel …23

(5) Quality of the management plan … 26

(a) adequacy of the management plan … 26

(b) extent to which the time commitments are appropriate and adequate … 40

(c) procedures for ensuring feedback and continuous improvement … 42

(6) Quality of the project evaluation … 43

(a) objective measures that produce quantitative and qualitative data … 44

(b) performance feedback and periodic assessment of progress … 47

(c) extent to which the evaluation will produce evidence of promise … 47

S2S: STAR to STEAM

Table of Tables and Figures

Table 1: Characteristics of the Arts versus the Sciences … 1

Table 2: Information and Demographics for Target Schools … 3

Table 3: Percentage of Students, by Grade, Not Meeting Standard in Reading, Math, and Science at ENE Compared to District …5

Table 4: Percentage of Students, by Grade, Not Meeting Standard in Reading, Math, and Science at ROM Compared to District … 6

Table 5: Management Plan Example for 3rd Grade, Teachers … 29

Table 6: Curriculum Testing and Implementation Schedule … 32

Table 7: Timeline of Major Grant Activities … 33

Table 8: Key S2S Personnel, Time Commitments, & Funding … 42

Table 9: Partial list of quantitative performance measures … 45

Table 10: Partial list of qualitative performance measures … 47

Figure 1: Graphic Representation of Strong Theory … 13

Figure 2: S2S Logic Model … 15

S2S: From STAR to STEAM

Dorchester District 2 is seeking Arts in Education Model Development and Dissemination funding primarily to develop, test, and implement an arts integrated curriculum document for grades K-8 that integrates national standards in the arts, academics, technology and 21st century learning skills. Secondary goals include improving the academic and artistic performance of K-8 students, closing the achievement gaps between identifiable subgroups of students, and infusing technology into the teaching and learning process. This proposal, From STAR to STEAM, describes a K-3 arts integrated curriculum that emphasizes Science, Technology, Arts, and Reading (STAR), while in grades 4-8, the Arts are fully integrated into Science, Technology, Engineering, and Math to create a model STEAM program which integrates the best of both the arts and the sciences, two fields that are, according to Sousa and Pilecki (2013), often viewed as polar opposites.

Table 1: Characteristics of the Arts versus the Sciences

ARTS	SCIENCES
Subjective	Objective
Intuitive	Logical
Sensual	Analytical
Unique	Reproducible
Frivolous	Useful

In response to the Absolute Priority for the 2015 Arts in Education Model Development and Dissemination (AEMDD) grant, Dorchester District 2 (DD2) will develop, implement, and evaluate a comprehensive K-8 curriculum that integrates the newly adopted National Core Arts Standards into the South Carolina State Standards for English Language Arts and Math. This standards-based, arts integrated, curriculum document will be pedagogically sound, technology rich,

rigorous, and supported by current research and best practices. The goal is to integrate the most current national arts and academic standards, as well as 21st Century learning skills, and ISTE (International Society for Technology in Education) standards, into an easily replicated learning and teaching tool.

To address the two Competitive Preference Priorities for the AEMDD grant, two schools, Eagle Nest Elementary (ENE) and River Oaks Middle (ROM), have been selected as the implementation/test sites for the project. These are new schools, built to accommodate the growing population, mostly low income and non-English speaking, in the southeast corner of the district. They have a common campus, allowing the project to share personnel, resources, and professional development opportunities. These two schools are the only elementary and the only middle school in the district that did not receive the Palmetto Gold and Silver Award this year, meaning they are the only two schools that did not make progress in closing achievement gaps among disaggregated student groups. They also have a student population that is highly transient, that represents the most academically at-risk group of students in the district, including the highest percentages of children receiving subsidized meals, the highest gaps in achievement between various racial and economic subgroups, and the highest numbers of ESOL (English for Speakers of Other Languages) students.

Innovative Arts Discovery Labs, with current arts technology and electronic instructional centers devoted to arts-integrated academic content will be created in both schools. The Discovery Labs will be challenging, hands-on learning communities where students and their teachers engage in the authentic integration of the arts into science,

technology, engineering and mathematics (STEAM), and arts-integrated language arts technology centers will help K-3 students master reading, which is the basis of learning in all other subjects. River Oaks Middle will also house a convergence media lab where students will use all their STEAM talents to produce podcasts, newspapers, graphic design projects, and instructional television shows that will be broadcast to both of the target schools through a site-based network. Streaming videos of arts-integrated student projects, productions, and newscasts will be broadcast on a continuous loop into the schools' lobbies and cafeteria. Classroom sets of iPads will permit students and teachers to extend the lessons from the Arts Discovery Labs and to express and document what they are learning in innovative and creative ways.

Table 2: Information and Demographics for Target Schools*

Eagle Nest	Factors	River Oaks
PK-5	Grades	6-8
815	Enrollment	1,016
57.9%	% Subsidized Meals	60.0%
17%	% ESOL	7%
$6,917	Per Pupil Expenditures	$5,401

*Sources: 2013 Annual School Report Card and SDE Website

Selection Criteria:

(1) Need for project: The two schools selected for AEMDD intervention are the lowest performing elementary and the lowest achieving middle school in the district as

measured by the state PASS exam, and school report card scores. Compared to other schools in DD2, Eagle Nest and River Oaks have the highest percentages of students participating in the free and reduced (F/R) lunch program as well as the highest percentage of ESOL students in the district. Students at these two schools suffer from the effects of poverty and the challenge of language barriers, and can rightfully be described as the most at-risk of educational failure of any children in DD2.

The district uses AIMSWeb assessments twice yearly in kindergarten, and grades 1 and 2. These nationally-normed measures of early childhood reading and math indicate that on every measure and subtest, not only do students at ENE perform more poorly than at any other school in DD2, but the differences are dramatic. For example, for the Quantity Discrimination test at kindergarten, the District average (which includes ENE) is 73%, while students at ENE averaged 54%, first graders at ENE were 20 percentage points behind the district in a critical reading skill, and second graders are 14 percentage points below the district average in math computation.

Standardized testing data for grades 3 – 8 from the SC PASS examination shows specific achievement gaps and performance weaknesses between students on full-pay lunch compared to students in the subsidized meals program and among various racial/ethnic groups. Table 3 below shows the extent of the achievement gaps at Eagle Nest compared to other elementary schools in DD2. ENE students at all grade levels score at or below their classmates across Dorchester 2, with the greatest achievement problems occurring in all subjects at grade 3 and in 5th grade science.

Table 3: Percentage of Students, by Grade, Not Meeting Standard in Reading, Math, and Science at ENE Compared to District

ENE	ELA			Math			Science		
Grade:	3	4	5	3	4	5	3	4	5
DD2	11.2	12.4	10.1	15.0	8.9	10.7	31.7	19.3	20.6
ENE	20.2	12.1	9.8	25.2	7.1	15.4	41.0	22.9	30.0
Difference:	-9.0	0.3	0.3	-10.2	1.8	-4.7	-9.3	-3.6	-9.4

A more detailed analysis of these data is presented in the Appendix to this document. It shows student performance on the state assessments broken down by lunch status and ethnicity. Examination of this disaggregated information reveals the following patterns at ENE:

a. In ELA, females outscored male students by 10 scale score points (SSP), White students outscored African Americans by 38 SSP and Hispanic students by 41 SSP, and students on full-pay meals consistently outperformed students in the subsidized meal program.

b. In Math, males outscored female students by 2 scale score points (SSP), White students outscored African Americans by 40 SSP and Hispanic students by 35 SSP, and again, students on full-pay meals consistently outperformed students in the subsidized meal program.

c. In Science, females outscored male students by 2 scale score points (SSP), White students outscored African Americans by 40 SSP and Hispanic

students by 42 SSP, and students on full-pay meals consistently outperformed students in the subsidized meal program.

d. Limited English Proficiency (LEP) students scored 31 SSP below the school average in ELA, 22 SSP below this average in math, and 26 SSP below in science.

Similar gaps in achievement can be seen at ROM where the achievement of 6th and 7th graders in particular falls below the district mean in all subject areas.

Table 4: Percentage of Students, by Grade, Not Meeting in Reading, Math, and Science at ROM Compared to District

ROM	ELA			Math			Science		
Grade:	6	7	8	6	7	8	6	7	8
DD2	15.2	17.6	23.8	17.2	19.2	21.8	22.1	16.1	16.0
ROM	18.4	22.3	24.1	18.8	25	19.9	28.9	19.1	14.5
Difference	-3.2	-4.7	-0.3	-1.6	-5.8	1.9	-6.8	-3.0	1.5

a. In ELA, females outscored male students by 12 scale score points (SSP), White students outscored African Americans by 32 SSP and Hispanic students by 28 SSP, and students on full-pay meals consistently outperformed students in the subsidized meal program.

b. In Math, females outscored male students by 3 scale score points (SSP), White students outscored African Americans by 39 SSP and Hispanic students by 25

c. SSP, and again, students on full-pay meals consistently outperformed students in the subsidized meal program.
d. In Science, males outscored female students by 2 scale score points (SSP), White students outscored African Americans by 39 SSP and Hispanic students by 25 SSP, and students on full-pay meals consistently outperformed students in the subsidized meal program.
e. LEP students at ROM perform relatively well. In ELA they were 4 SSP below the school mean and 2.5 SSP below the school average in math. In science, they scored nearly 5 SSP above the average of all students in the school.

The data clearly demonstrate the need to address the disparities in student performance between minority and majority racial, socio-economic, and language groups at the two target schools.

With research indicating that the arts help students transcend language and cultural barriers (Catterrall, 2002), S2S Arts Discovery Labs and arts integrated units of instruction within the core academic content areas will address academic disparities among student groups in the target schools and begin to close documented achievement gaps, beginning in Year 2 of the project.

(2) Significance: The S2S project, which will effectively result in a K-8 curriculum that integrates the new National Core Arts Standards into the *South Carolina* State Standards and that supports the intent of House Resolution 319, passed in 2011 by the 112th Congress. This bill expresses "the sense of the House of Representatives that adding art and design into Federal programs that target the

Science, Technology, Engineering, and Mathematics (STEM) fields encourages innovation and economic growth in the United States." (Langevin, 2011) And, while not specifically elaborated in this narrative, the ISTE (International Society for Technology in Education) standards for both teachers and for students will be incorporated into all processes and products of the S2S project.

These standards include:

ISTE Standards for Teachers:	ISTE Standards for Students:
• Facilitate and inspire student learning and creativity	• Creativity and innovation • Communication and collaboration
• Design and develop digital age learning experiences & assessments	• Critical thinking, problem-solving, and decision-making
• Model digital age work and learning	• Research and information fluency
• Promote and model digital citizenship and responsibility	• Digital citizenship • Technology operations and concepts

Likewise, all project activities will incorporate twenty-first century learning goals formulated by The Partnership for 21st Century Learning Skills: Teamwork and Collaboration, Self-direction, Technology, and the 4 C's, Critical thinking, Creativity, Communication, Cross-cultural understanding. This Partnership has made specific recommendations about both the curriculum, and the learning skills necessary for student success in the global economy. They state: "Effective citizens and workers

must be able to exhibit a range of functional and critical thinking skills, such as Information Literacy, Media Literacy, and ICT (Information, Communications, and Technology Literacy)." ROM will initiate a convergence media literacy program to help students integrate artistic and technological media into their learning and to provide them with the media literacy and ICT skills that will prepare them for higher education and/or high tech employment. Convergence media is defined as the merging of mass communication outlets – print, television, radio, the Internet along with portable and interactive technologies through various digital media platforms to **tell** stories and present information and entertainment using a variety of media.

S2S significance is demonstrated by a curriculum that includes the most current, research-based, thinking about effective teaching and learning in the arts, academics, and technology, and that stresses the skills needed for economic and personal self-sufficiency in the 21st century.

Project significance will be further enhanced by the impact and future dissemination of proposed materials, processes, documents, and teaching strategies that will be developed and made available to the public as a result of AEMDD funding. DD2 is committed to presenting the project at state and national conferences, to hosting visiting educators for site visits, to sharing project documentation with other school districts, and to replicating the project at other schools in the district upon documentation of the effectiveness of the S2S model in increasing achievement in all subgroups of students.

(3) Quality of the project design: The S2S project reflects up-to-date knowledge from research and effective practices and is based on four research-validated theories:

a. The ability to read well is fundamental to achievement in STEM; (Marshall, 2012);
b. Greater time on task yields greater achievement (Dobbie & Fryer, 2011);
c. The arts transcend language and culture, and create cross-cultural understanding; (Catterall, 2002;)
d. Science, technology, engineering, ARTs, and math are key requirements for success in the twenty-first century (Partnership for 21st Century Learning).

Project activities for grades K-3 will focus on using the arts to enhance and enrich reading ability. Without this foundational learning skill, students struggle academically, socially, and professionally. The National Dropout Prevention Center has noted that more than half of all fourth graders who qualify for subsidized meals fail to read at the basic achievement level needed for academic success and K12 Reader reports that nearly 2/3 of students who reach the fourth grade without proficient reading skills end up on welfare or in prison, hence the emphasis upon reading proficiency by grade 3. Other evidence for the importance of reading includes:

- Over 60% of inmates in U.S prisons read at or below the fourth grade level.
- On average, welfare recipients, ages 17 to 21, read at the 6th grade level, well below what is needed to earn a living wage.
- 85% of U.S juveniles in prison are functionally illiterate.
- 43% of adults with extremely low reading skills live at or below the poverty line.

Learning to read well by 3rd grade is critical not only to this project, but is a skill related to academic success and life-long social and economic well-being. While the primary focus of grant activities at the primary grade levels will be on reading in order to prepare students to master challenging STEAM content in the higher grades, there will still be arts integrated math, science, and technology at these lower grade levels. Likewise, ELA instruction at the higher grades will still be arts-integrated, but the emphasis will be upon incorporating the arts into STEM content

Dobbie and Fryer (2011) demonstrated that instructional time, the amount of time students actually spent in learning or high dosage tutoring, was a much better predictor of higher student achievement than most other factors, including class size or teacher credentials. In order to provide more quality teaching and learning time for the arts, S2S will drop the once-a-week rotation for art, music, etc. in favor of an extended one-week schedule (art for 5 days, music for 5 days, etc.) which will give students concentrated time periods to master an arts skill, or complete a unit, and be assessed. It will increase arts instructional time from 36 sessions per year to 60 sessions, significantly increasing the amount of time a student receives arts instruction. This schedule will be more conducive to mastery learning: less time will be devoted to review of a lesson that was taught a week earlier, providing more time for practice and new instruction; and this schedule will allow time for team teaching and arts integrated units of study across the curriculum, thus providing the time to “double-dose” students with STAR and STEAM content.

Arts Discovery Labs that house multiple learning centers will be created allowing students to use high tech equipment to pursue meaningful learning of arts integrated math, science, technology and ELA. Arts Discovery Labs will be available to all elementary students for 40 minutes per day, every day, providing 200 minutes a week of arts and technology-integrated curriculum, effectively doubling the amount of time devoted to STEAM and STAR subjects. In addition, the Arts Discovery Labs will be open for Parent Nights where students and parents practice the arts and technology together.

Stanley Beamer Sears (2013) states that 'learning theorists have demonstrated that more than half the population needs to see what they are learning." When a class comes to the lab, it will be possible that some students will be using iPads with cameras to get a visual representation of a complex subject, helping them to conceptualize an abstract idea or to visually document a scientific concept and create charts, graphs, or more innovative ways to illustrate their understanding. Other students may be using Leap Body Controllers to create songs or jingles for a media literacy project, or learning to write code in order to control a robot. Teachers will be able to assign students to specific centers to strengthen skills for struggling students or to provide enrichment beyond the curriculum for students who have already mastered objectives. The Discovery Labs are designed to provide more instructional time in differentiated, arts-integrated, personalized learning of academic content. The labs will provide each student with opportunities to master skills, to expand their learning beyond the curriculum, to pursue areas of interest and motivation, to document their learning in

innovative ways, and learn to use technology as a learning tool. These two initiatives will significantly increase instructional time and will certainly contribute to higher academic achievement.

Catterrall, among others, provides evidence that the arts transcend language and culture, and create cross-cultural understanding. Certainly, the many children at the 2 S2S sites who do not speak English as their native language will benefit from curriculum that is not entirely based upon a knowledge of the English language to be successful. The arts will provide the conceptual framework for much of their learning and will help them to make visual, auditory, and kinesthetic connections to academic content as well as helping them learn English in a more natural and meaningful manner. They will master STEM topics through a total physical response the arts.

There is ample evidence and documentation to support the belief that integrating the arts into the core academic subjects leads to higher academic achievement, greater satisfaction with the school environment, and provides students with the motivation and skills to pursue meaningful vocations and fulfilling avocations. The seminal work documenting the beneficial effects of an arts integrated curriculum, James Catterall's *Critical Links: Learning in the Arts and Student Social and Academic Development* (2002), provides compelling evidence that while that the arts create strong learning links in all academic subjects, they are critically important for at-risk children. Research studies reported in this volume cite significant effects between the arts and reading comprehension, an area that will be specifically addressed by this proposal (STAR). An added benefit reported for at-risk children's involvement in the arts is increased

achievement motivation, another area that S2S will document through teacher and student surveys and standardized test scores.

Champions of Change researchers have drawn similar conclusions. After studying student involvement in athletics, community service, and the arts, they found that students who were engaged in these activities did better in school and led more productive lives than students who did not participate in extra-curricular activities. Involvement in the arts, however, provided the greater benefits and led to higher achievement than participation in community service or athletics. These benefits were especially potent for at-risk students.

Current brain research has documented that involvement in the arts provides students with enhanced neural development and increased academic achievement (Sousa & Pilecki, 2013). Arts students make the highest scores on the SAT, music instruction improves math performance, drama helps at-risk students learn to read, art teaches critical thinking and problem-solving. The list is endless. Actual physical changes occur in the brains of those engaged in the arts: the auditory cortex in musicians thickens and strengthens, the cerebrum and cerebellum in dancers become more sensitive to all sorts of learned movement, drama improves cerebral function in the areas of spoken language acquisition and enhances the limbic system's emotional control centers, while the visual arts enhance the internal visual processing center, allowing it to recall reality or create fantasy.

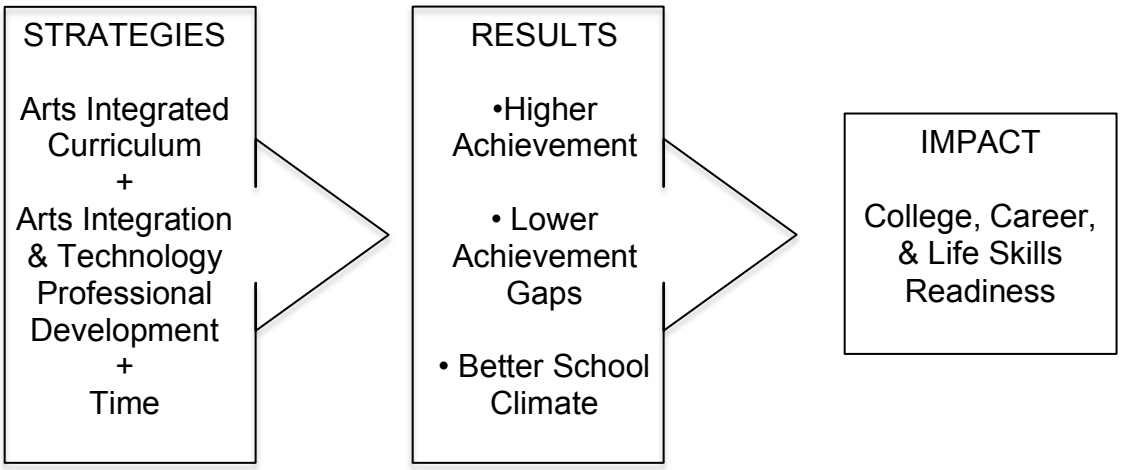
The S2S project evaluation will document the differences in academic achievement between classes where teachers implement art integrated lessons and those that were

taught in the traditional manner. The null hypothesis assumes that there will be no difference in student achievement between traditional and arts-integrated classes, but the S2S clearly intends to not only disprove the hypothesis, but to clearly document that students at all achievement levels are capable of high levels of artistic and academic performance and that they can gain the personal and interpersonal traits such as collaboration, achievement motivation, creativity, and critical thinking that lead to personal and social self-sufficiency.

The evaluation plan in section 6, the graphic in Figure 1 below, and the logic model on the following page outline the strong theory of action for the S2S Project. The quasi-experimental evaluation will gauge the effectiveness of the professional development, the curriculum document, and the delivery model to achieve the goals of improving school climate, of closing achievement gaps, and of improving student achievement.

While only a few studies have been cited, there is a strong research base to support the theories upon which the present project is based. All project activities will be geared toward using the arts and technology to strengthen reading skills, particularly at the lower grade levels, to provide more time for learning within the school schedule, to positively impact the learning of children who are culturally or socially different, and to prepare students for success in the 21st century.

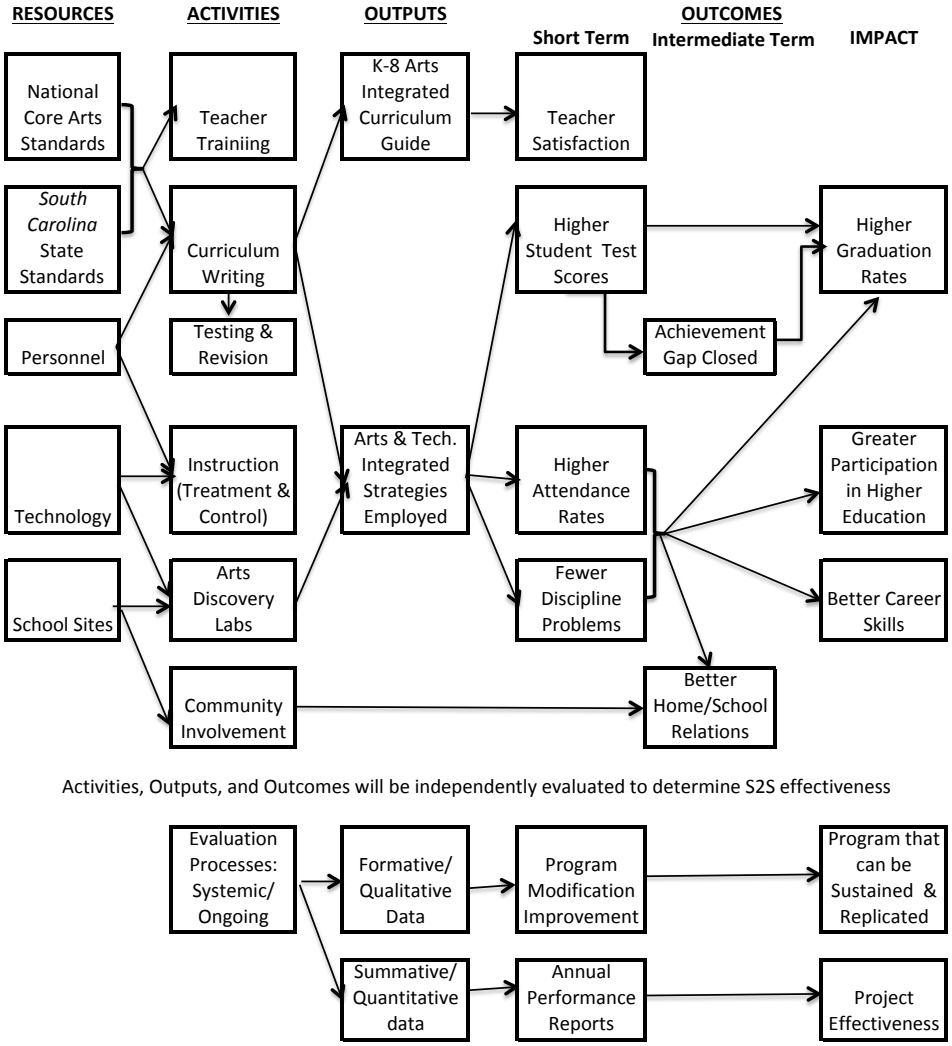
Figure: 1: Graphic representation of the strong theory undergirding project strategies, expected results, and long-term impact.



The Logic Model in Figure 2 below provides a visual construct outlining project resources, activities, outputs, and expected outcomes. Only short- and intermediate-term outcomes will be measured during the AEMDD funding period as the long-term impact of the grant can not be assessed during the four-year grant period.

Grant initiatives are aligned with the Logic model on the following page which organizes the structure and framework of activities that can reasonably be accomplished within the time and funding parameters of the S2S project. The long-term impacts of the project (higher graduation rates, greater higher education enrollment, meaningful employment) are the only elements that can not be measured and reported within the four-year funding period. These data will be tracked as a matter of professional interest and as documentation of the effectiveness of the project in improving not only the academic and artistic performance of S2S participants, but also their readiness for advanced study and meaningful citizenship

Figure 2: S2S Logic Model



The S2S project integrates smoothly with other district initiatives to improve teaching and learning and to support rigorous academic standards for students. S2S incorporates the *South Carolina* State Standards (SCSS), which are based on scholarly research, comparisons to standards from high-performing states and countries, findings from TIMMS and NAEP assessments, and research identifying the knowledge and skills necessary for the workforce and higher education. These standards represent the latest research and best thinking in educational design and delivery.

Dorchester Two began professional development for ELA and math teachers on the Common Core State Standards (CCSS) in 2012. The faculty in the Fine and Performing Arts Division of the district also participated in this CCSS training and are familiar with the content, and the intent, of the new standards for math and ELA. The newly adopted National Core Arts Standards (NCAS), to be released this summer, also have been a part of the district's planning and professional development for the past two years. The district has followed the discussion about the new arts standards, has participated in the field reviews, and has hosted writers of the new National Arts Standards in professional development sessions. DD2, and it arts leadership and teachers, have been proactive in preparing for the implementation of the new academic and artistic standards. Developing a model curriculum document that integrates the national fine arts standards into the *South Carolina* state standards represents a combination of the latest, best documented, thinking about the arts and academics.

Teacher training and professional support are essential to improving teaching and learning and to supporting rigorous academic standards for students. To support this effort, in addition to having a full-time Project Director and an arts technology specialist on-site, all teachers at the two target schools will be provided the opportunity to take one graduate course and to attend two CLIA (Curriculum Leadership in the Arts) or SC Educational Television (SCETV) summer training sessions during the four-year funding period. The University of Charleston courses, (Creativity in the Classroom, Arts for Special Needs Students, Nature & Needs of Artistically Talented Students) will be offered on-site for teacher convenience. CLIA and SCETV both conduct one-week residential summer professional development institutes in the arts and technology for SC teachers. A partial list of these intense, standards-based, institutes includes:

- Visual Arts & Technology Institute
- Music & Technology Institute
- Video Production in the Arts
- Curriculum Leadership in the Arts
- Integrating the Arts Across the Curriculum
- Arts Assessment Institute: Classroom Assessment
- Creative Teaching Institute (during Spoleto Festival USA, an international arts festival held in Charleston each year)
- Muse Machine: ARTSCIENCE: Inquiry Based Classrooms Using the Arts and Sciences to Stimulate Creativity, Curiosity, and Innovative Thought

The goal of professional development will be to provide teachers with the skills and attitudes necessary to implement S2S with fidelity to the goals outlined in this proposal. All grant-related professional development will be aligned with project purposes and goals and will be designed to:

- Support school staffs in their efforts to plan and deliver high quality standards-based arts-integrated instruction;
- Allow time for teachers to collaborate in planning new curriculum that utilizes research-based strategies and technology to personalize and meet student needs;
- Test and revise new curriculum and instructional practices that address students' strengths and which close achievement gaps.

The S2S project is the elementary and middle school field-test to introduce the project purposes, activities and benefits for a district-wide initiative to integrate technology and the arts across the curriculum. Dorchester 2 can be described as an "arts-friendly" school district with strong arts leadership, excellent opportunities for students in the arts, outstanding teachers, and community support. The S2S project will be undertaken with the purpose of creating an arts integrated curriculum that can be replicated, and that can be maintained and sustained. AEMDD funding will support the planning process, the necessary staff development, and the purchase of the technology and artistic resources that will support this model program. All of these efforts contribute to the ongoing work of DD2 beyond the end of the grant.

Once major purchases of equipment have been made, personnel have been trained (and have obtained the expertise to continue the training in-house), and effective procedures and strategies developed and tested, program maintenance will become minimal:

- The major equipment required to operate the program will have been purchased – the primary future cost will be for maintenance and supplies;
- The majority of teachers will have received training in arts integration, technology integration, and pedagogy – only occasional training for new staff members will be necessary;
- Policies and procedures for program operation will have been developed and documented – only occasional adjustments to meet new developments will be necessary;
- The district will maintain the grant funded positions – for the purpose of using their insights and expertise to expand the arts integrated theme to other local elementary and middle schools;
- A new curriculum that integrates the National Core Arts Standards into the *South Carolina* State Standards will have been written, tested, revised, and implemented –the lion's share of the development and revision process will have been completed and evaluated.

The new S2S curriculum, developed, revised, and refined at the two grant-funded schools, will become the standard for DD2, not just for the two target schools, if the strong theory upon which the project is based, holds true.

(4) Quality of project personnel: DD2 has a model non-discrimination policy and actively seeks qualified candidates for both certified and classified positions. This policy specifically prohibits the use of race, color, national origin, age or disability in making hiring decisions. This policy will remain the standard that is used in filling new positions in DD2 that are created as a result of AEMDD funding. Broad advertising and recruitment efforts will be used to attract a diverse candidate pool for grant-funded positions.

Qualifications of key personnel are of utmost importance to project success. All teachers currently employed at the two proposed sites are highly qualified (NCLB designation) and all personnel hired with grant funds will also meet this standard. Key personnel will include:

Mr. Larry Barnfield, the proposed Project Director, has a formidable list of credentials that document his leadership and expertise in developing standards-based arts curriculum and in implementing innovative arts projects. He has served in significant leadership positions at the state and national levels, including serving on the board of directors and as the vice president of the National Art Education Association, president-elect of the SC Alliance for Arts Education, and vice-chair of the National Art Education Foundation.. His vita, included in the Appendix, lists numerous honors,

including a Disney American Teacher Award, numerous "Educator of the Year" awards from various organizations, and lifetime achievement awards.

Among other credentials, he has successfully implemented the DARTS Project, a 2006 AEMDD grant that continues to strengthen arts education in the district (middle school students who successfully participate in the DARTS model receive high school arts credits, permitting them to pursue more advanced arts instruction and Advanced Placement arts courses earlier in their high school careers). Under his leadership the DD2 Board of Education was presented the SC Alliance for the Arts Education's Achievement in the Arts award, and the Kennedy Center for Arts Education/National School Boards Association awards for Excellence in Arts Education. Two of the district's schools have been recognized by the Kennedy Center as Arts Schools of Distinction.

Dr. Anne Godbee, a grant writer and project evaluator, will serve as the Principal Investigator for the project. Dr. Godbee has served in this capacity for many federal grants including the prior AEMDD grant in DD2, and several Magnet Schools Assistance Program grants that were funded to establish arts-integrated magnet schools in the state. She will conduct both formative and summative assessments of the project, the former to assist in focus and direction for grant activities and adherence to the project's goals and deadlines, and the latter to determine success in meeting GPRA measures and project objectives.

School-level leadership and support are essential. **Dr. Tamara Diebold**, principal at ENE, has been the administrator at this school since its inception. Among

her professional qualifications is her tenure as a teacher at Rollings Middle School of the Arts, a flagship magnet school remarkable for high student achievement and exceptional student visual and performing arts talent. **Mr. Scott Matthews**, principal at ROM, is a former band director who continues to maintain a personal involvement in the arts. Both administrators are familiar with the research supporting this proposal, are committed to the success of this project, and needed no convincing that reforming their schools with an arts-integrated focus was the right and necessary move.

Grant funding is sought for two teaching positions, a theater teacher and an arts technologist, both of which will be assumed by the district upon successful implementation of the S2S project. Both teachers must hold a valid SC teaching credential, must be highly qualified, and must document that they have attended a minimum of three CLIA or SCETV Institutes or commit to completing this requirement during the grant funding period.

The **theater teacher,** who will service both schools, is necessary in order to provide a full complement of arts disciplines at the two sites and to realize the benefits of drama, particularly in reading instruction for higher risk students.. (S)he must:

- Demonstrate high competence in teaching and in theatrical production,
- Be able to work with elementary and middle school aged children AND their teachers,
- Assist with the development of drama/theater infused lessons or units of study within grade-level classrooms and in the Arts Discovery Labs,

- Take responsibility for producing a Saturday Showcase of STAR to STEAM projects for parents and the public to see and to understand what and how their students are learning,
- Term of employment will be 190 days.

An **arts technologist** (AT) will also be employed and funded by the grant. This ”techno-artist“ must:

- Demonstrate high competence in convergence media or the use of technology to produce original visual art or music,
- Be able to work with elementary and middle school aged children AND their teachers,
- Assist with the development of arts and technology infused lessons or units of study within grade-level classrooms and in the Arts Discovery Labs,
- Work from 9:00 to 5:00 in order to be available to assist teachers after school,
- Take responsibility for training teachers in technology integration,
- Submit an electronic portfolio as part of their application for employment,
- Expect to move to a district-level position at the end of AEMDD funding in order to assist with the replication of this project at other elementary and middle schools,
- Term of employment will be 190 days.

In addition to the project director, the project will receive considerable district-level support from content area curriculum interventionists. The minimum qualifications for interventionist positions include a masters degree, content mastery, and evidence of teaching excellence and instructional leadership. A list of these individuals is provided in Table 8 below. Curriculum vitae for key project personnel are included in the Appendix to this document.

Significant support for the S2S project has been pledged by numerous organizations and entities including:

- The SC Department of Education whose Arts Associate will provide guidance and consultation and serve as an ad hoc member of the S2S Advisory Boards,
- SC Educational Television which will provide both after-school workshops and summer courses for teachers, particularly in the areas of innovative uses of technology and media literacy and broadcasting,
- The College of Charleston's Fine Arts Department which will provide Arts Management interns who will perform many functions such as establishing an S2S web presence and assisting with the media literacy lab,
- The College of Charleston's Department of Education which will provide on-site graduate courses in arts infusion for teacher certification.

Quality of the management plan: The management plan is more than adequate to meet project needs. The project will be managed by a full-time, grant-

funded, Project Director (PD) supported by school and community stakeholders, district office staff, independent consultants, and professional arts organizations within the state. The PD will have an elementary school and a middle school Advisory Board to provide guidance, assistance, and oversight of project activities. These 2 boards will be composed of the principal, the arts technologist, a member of the arts faculty, the content area instructional interventionists, the Principal Investigator (PI), a grade level faculty member from each of the grades in the target school, and a member of the School Improvement Council. These 2 groups (one for ENE and one for ROM) will meet monthly during year 1 and quarterly thereafter to review project activities, to ensure that S2S is complying with other district curriculum initiatives, and to offer advice and guidance on improving or enhancing project activities. All comments and suggestions will be documented and investigated. The purpose of this group is to provide the PD with information from their unique professional positions that will lead to improved performance and accountability.

Briefly described, the project design will operate as follows. Year 1 will be a planning, orientation, and professional development year which will include specific training on meeting the needs of at-risk children, and a graduate course from the University of Charleston on arts integration and assessment. Development of the curriculum document will begin and rubrics, checklists, observation instruments, surveys and evaluation protocols will be developed and revised during this period.

Actual implementation will begin during year 2 with half of the teachers at each school testing arts integrated academic content and the Arts Discovery Labs while the

other half will continue to instruct in the traditional format they have always used. Locally developed pre- and post-tests of the content to be delivered during a 9 week period will be administered to all students during each marking period. At the end of each nine week period, pre- and post-test data, disaggregated by gender, ethnicity, and lunch status will be collected. Teachers will alternate each grading period between traditional and arts integrated instruction, permitting all students to be exposed to 18 weeks of traditional teaching methods and 18 weeks of arts integration. Surveys at the end of the 2nd and the 4th 9 week periods will be used to ask students about their learning preferences, and how much they felt they learned during each grading period.

An example of how this will work is provided below using 3rd grade reading as an example. Note that there are 6 third grade teachers at ENE, and that a pre-test of the reading skills/content to be covered in each 9 week grading period will be administered as will a post-test. All third grade teachers should be addressing the same content and skills during each grading period and all classes, which are heterogeneously grouped, should be at the same instructional level.

Table 5: Management Plan Example for 3rd Grade, Teachers A, B, C, D, E, F

1st Nine Weeks Reading		2nd Nine Weeks Reading		3rd Nine Weeks Reading		4th Nine Weeks Reading	
Arts Integ.	Trad. Instruct.	Arts Integ.	Trad. Instruct.	Arts Integ.	Trad. Instruct.	Arts Integ.	Trad. Instruct.
A	D	D	A	A	D	D	A

B	E	E	B	B	E	E	B
C	F	F	C	C	F	F	C

Looking at Table 5 above, teacher A will provide arts integrated reading instruction during the first 9 week grading period while teacher D will teach reading in her traditional manner. Both teachers are presumably addressing the same instructional standards during this period and students in both classes are comparable. Pre- and post-tests will determine how much growth in reading ability was made during this period (Classrooom A post-test minus Classroom A Pre-test = Classroom A Growth) and will determine which classroom made the better growth (Classroom A Growth minus Classroom D Growth). Differences in growth may be attributable to many factors including the teacher's instructional ability, outside factors that influenced classroom climate, or perhaps the teaching strategy used. Some of these factors wiil be counterbalanced by having teacher D provide arts integrated instruction in reading during the second grading period while teacher A returns to more traditional instructional methods. By the end of the year, if there are 6 teachers at grade 3, there will be 24 data sets, 12 measuring student reading achievement in an arts integrated learning environment and 12 measuring reading achievement in a traditional learning situation. In addition, the differences in teaching ability will be controlled for since each teacher will have taught two periods in a traditional manner and two periods in an arts integrated manner. Classroom differences will have been controlled for since each group of students will have experienced two arts integrated periods and two traditional

periods of learning. All third grade students will have received the same amount of classroom time in both instructional models in alternating grading periods allowing for two surveys (at the end of the 2nd and the 4th grading periods) to assess their instructional preference.

At the third grade level during year 3 of the project, all third grade teachers will use arts integrated reading instruction and the model described above will be applied to science. And during year 4, all third grade teachers will be using arts integrated reading and science instruction, and the schedule above will be applied to math.

The example described above for third grade will be used in grades K-3. The same model will be used in grades 4-8 with the exception that year 2 field-testing will start with arts integrated technology, while year 3 will be arts integrated science in grades 3 – 5, and science and math in grades 6 – 8. Year 4 will continue with full implementation of all subjects that have already been field-tested and will add math in grades K – 5, and a a full-blown media literacy program at ROM.

Table 6 below shows the proposed implementation schedule for the S2S project. Years in which teachers alternate between arts integrated and traditional instruction are experimental years. Once the experimental year is complete and results have been analyzed, discussed, and plans for revision have been developed, then the experimental discipline will be fully implemented in the grades in which it had been experimental. For example, in year 2, K-3 teachers will alternate traditional instruction with arts integrated instruction while math will be experimental in grades 4-5, and middle

school math and science teachers will both have the alternating experimental schedule in grades 6-8.

The two tables below provide the implementation schedule and the project timeline. In order to develop an implementation plan that can measure S2S results and optimize teacher training and infrastructure development initiatives, the introduction of the arts and technology integrated curriculum will follow the following sequence: for all grade levels, both elementary and middle school, year 1 of the project will be devoted to planning, teacher training, refinement of the evaluation procedures, and curriculum writing. Field-testing of curriculum will begin in year 2, with one subject introduced per year at the elementary level. Since K-5 teachers are responsible for teaching all disciplines, and since the plan is to carefully test curriculum and measure its effectiveness, there will be a measured and sequential implementation with all K- 3 and 4th & 5th grade teachers following the same schedule and evaluation process. Grades 6 – 8 are departmentalized, so it is possible to field test more than one subject at a time without overwhelming individual teachers with too many changes to their instructional plans.

During Year 2, arts & technology integrated reading will be introduced at grades K-3 while technology will be introduced in grades 4 – 8. Refinement of the first year's reading and technology curricula will take place during the summer of 2017 in preparation for full implementation of those subjects in the fall along with field testing of science in grades K -5 and math and science in grades 6 – 8.

Table 6: Curriculum Testing and Implementation Schedule

Year	Grades K-3	Grades 4 – 5	Grades 6 – 8
1 Planning	Curriculum Writing, Professional Development		
2 Field test	Reading	Technology	Technology
3 Field Test Implement	Science Reading	Science Technology	Math & Science Technology
4 Field Test Implement	Math Science & Reading	Math Science & Technology	Media Literacy Math, Science, & Technology

Difficulties collecting pre- and post-test data from teachers and data contamination are both a concern with this model. In an effort to insure compliance with the implementation plan, teachers who abide by the alternating arts integrated/traditional teaching schedule and who administer pre- and post-tests and submit their classroom data in a timely manner will receive [redacted] per year ([redacted] at the end of the 2nd 9 weeks, and [redacted] at the end of the 4th 9 weeks).

Table 7: Timeline of Major Grant Activities

2015 - 2016: Year 1 Planning & Arts Integration Training			
Activity	**Responsibility**	**Time**	**Evaluation/Documentation**
Notification of Funding	DOE	Sept	GAN
Formally hire Project Director (PD)	Personnel	Sept.	Contract

Advertise for & hire Arts Technologist (AT)	PD, Personnel	Sept/Oct.	Contracts
Inform faculty, S2S talking points, explain roles / responsibilities	Principals, PD	Ongoing	Agendas, minutes, notes
Schedule & conduct Advisory Board Mtgs	PD	Monthly	Agendas, minutes, notes
Revise school web sites, handbooks, newsletters, documents to reflect arts integration focus, etc.	PD, Arts Technologist (AT), College of Charleston Interns, Principals	Ongoing	Vertical file maintained by PD
Implementation plan refined	PD, Ad. Boards, Principals	Oct.	Plan in Vertical file
Parent & Community Information Meetings	Principals, PD	Quarterly	Notices, agendas
Evaluation Plan refined, data collection begins	Principal Investigator, PD, Testing Dir.	Jan.	Revised Eval. plans in Vertical File

Arts Discovery Labs: technology ordered & installed, arts integ. units developed	PD, AT, Teachers	Jan.	Photo evidence in Vertical file, PO's
On-site Graduate Course	Dr. Doninger, College of Chas	January-May	Class roster on file
Teacher/staff training	AT, PD, consultants	Ongoing	Handouts, notes, session evaluations
Curriculum writing	Teachers, AT, PD	Ongoing	Curriculum Notebook
Summer CLIA/SCETV Training	Teachers	June	Certificates on file
Identify and order curric. supplies and equipment	PD, AT, Principals	Spring	Purchase orders
Baseline Achievement data collected	Principal Investigator	Ongoing	See the Quality of Project Evaluation section of this proposal for details on data and their treatment.

2016 - 2017: Year 2 Implementation Yr. 1			
Activity	Responsibility	Time	Evaluation/Documentation
APR submitted	PD, PI	October	Copy of APR on file
Testing of K - 3, Arts Integrated Reading Centers & instructional units	Teachers, AT	Ongoing	AIMSWeb & PASS Scores, Pre/Post tests, Teacher & Student Surveys
Testing of Gr. 4 - 8 Arts Integrated Technology Centers & instructional units	Teachers, AT	Ongoing	PASS Scores, Pre/Post tests, Teacher & Student Surveys
Begin Curriculum development for K-5 Arts Integrated Science Centers and 6-8 Math & Science	Teachers, AT	Ongoing	Curriculum Guide File
Schedule & conduct Advisory Board Meetings	PD	Quarterly	Agendas, minutes, notes
Prof. Dev.: Meeting	PD	Fall	Summary of Participant

the Needs of At-Risk Students			Evaluations of Session
Discovery Lab Parent Nights	AT, Principals, Teachers	Quarterly	Agendas, Photo documentation on file
CLIA/SCETV Training	Teachers	June	Application forms/Certificates

2017 - 2018: Year 3 Implementation Yr. 2			
Activity	Responsibility	Time	Evaluation/Documentation
APR submitted	PD, PI	October	Copy of APR on file
Testing of K - 5, Arts Integrated Science Centers	Teachers, AT	Ongoing	PASS Scores, Pre/Post tests, Teacher & Student Surveys
Testing of Gr. 6 - 8 Arts Integrated Math & Science Centers	Teachers, AT	Ongoing	PASS Scores, Pre/Post tests, Teacher & Student Surveys
Full implementation of K-3 arts & technology integrated reading	Teachers, AT	Ongoing	PASS Scores, Pre/Post tests, Teacher & Student Surveys

Full implementation of grades 4 - 8 arts & technology integration	Teachers, AT	Ongoing	SC Arts Assessment, gr.4&7
Begin Curriculum development for K-5 Arts Integrated Math Centers	Teachers, AT	Ongoing	Pre/Post tests, Teacher & Student Surveys
Begin Curriculum development for 6-8 Arts & Technology Integrated Media Literacy	Teachers, AT	Ongoing	Pre/Post tests, Teacher & Student Surveys
Discovery Lab Parent Nights	AT, Principals, Teachers	Quarterly	Agendas, Photo documentation on file
On-site Graduate Course	Dr. Doninger, College of Chas	January-May	Class roster on file
SCETV/CLIA Training	Teachers	June	Application forms

2018 - 2019: Year 4	**Implementation Yr. 3**

APR submitted	PD, PI	October	Copy of APR on file
Testing of K - 5 Arts Integrated Math Centers	Teachers, AT	Ongoing	Pre/Post tests, Teacher & Student Surveys
Testing of Gr. 6 - 8 Media Literacy Centers	Teachers, AT	Ongoing	Pre/Post tests, Teacher & Student Surveys
Full implementation of K-3 Arts Integrated Science & Reading Centers	Teachers, AT	Ongoing	Pre/Post tests, Teacher & Student Surveys
Full implementation of Gr.4-5 Arts Integrated Technology & Science	Teachers, AT	Ongoing	Pre/Post tests, Teacher & Student Surveys
Full Implementation of Gr.6 – 8 Technology, Science, & Math	Teachers, AT	Ongoing	PASS Results
Schedule & conduct Advisory Board Meetings	PD	Quarterly	Agendas, minutes, notes

Discovery Lab Parent Nights	AT, Principals, Teachers	Quarterly	Agendas, Photo documentation on file
Summer CLIA / SCETV Training	Teachers	June	Application forms & certificates on file
FPR submitted	PD, PI	October	Copy of APR on file

Table 8 below lists the key project personnel, the amount of time they will devote to project activities, and their funding source. The Project Director's position will be full-time (245 days) for the four years of the project. The principal investigator will spend the equivalent of approximately 3 days a week (.6 level of effort) on grant evaluation and assessment. The arts technologist will be a 200-day position. The two principals will be essential to project success. Their leadership, support, and high expectations for faculty participation are necessary to generating enthusiasm and teacher buy-in. While running an arts-integrated school is a full-time job, it is understood that the majority of their time will be spent on activities that are not necessarily grant-related.

Table 8: Key S2S Personnel, Time Commitments, & Funding Source

Name	Position	Level of Effort	Funding Source
Larry Barnfield	Project Director	1.0	AEMDD
Anne Godbee	Principal Investigator	.6	AEMDD
TBD	Arts Technologist (2)	1.0	AEMDD
Tamara Diebold	Principal ENE	.4	Local

Scott Matthews	Principal ROM	.4	Local
Debi Gilliam	Assessment/Accountability	.2	Local
Camilla Lovell	District Testing Coordinator	.2	Local
Susan Gaston	Early Childhood Services	.2	Local
Mike Windham	Dir. State/Federal Programs	.2	Local
	Arts Instructors		
5 Teachers	2 Art, 2 Music, 1 Dance	1.0	Local
1 Teacher	Theatre Arts	1.0	AEMDD
	Curriculum Interventionists:		
Kelley Schroder	Elementary Science	.2	Local
Jane Kolb	Middle School Science	.2	Local
Teresa Blitch	Elementary Reading	.2	Local
Lisa Cuthbert	Middle School ELA	.2	Local
Jenny Singletary	Elementary Math	.2	Local
Kathy Bower	Middle School Math	.2	Local
Shelly Bostick	Instructional Technology	.2	Local

Various procedures for ensuring feedback and continuous improvement exist. In addition to the two Advisory Boards described above, all SC schools have School Improvement Councils (SICs) that are mandated by law to serve as an advisory committee to a school's principal and faculty. SICs work with the school to develop and

implement a five-year school renewal plan. They monitor and evaluate success in reaching the plan's goals and objectives and write an annual report to parents about the progress of the plan.

The School Improvement Councils for both ENE and ROM School have been informed and approve of the district's decision to pursue AEMDD funding for STAR and STEAM programs in their schools. As the new school renewal plans are developed, they will include S2S goals, objectives, and activities as part of the overall plan for systemic reform at the target sites. The SIC's, along with the schools' PTA's, are the formal link between the schools and the parents and community stakeholders. Their cooperation will be sought in surveying parents and the community for suggestions and comments on the program and its effectiveness.

Each school in the district conducts an annual parent survey with results tabulated and publicized on the school's annual Report Card. Questions specific to the S2S project will be added to this survey and the results used as part of the project evaluation.

Stakeholder information will be provided. Bilingual brochures and school newsletters will inform the community about the S2S project and its goals. The PD will be present at Open House evenings at the schools to explain the project and to answer parent and community questions or concerns

Beginning in Year 2, a Saturday Showcase will feature student projects and work to give the community an opportunity to see the exciting and innovative changes that are happening in the curriculum.

Quality of the project evaluation: A comprehensive quasi-experimental evaluation design, outlined briefly below, will serve two purposes. The formative or qualitative evaluation will, along with the project timeline and logic model, guide day-to-day operations and will provide the data needed to make informed decisions relative to program improvement and revision. The summative or quantitative evaluation will periodically determine the project's effectiveness in meeting its goals, objectives, and targets. The short-term and intermediate-term outcomes of the project, shown in the Logic Model on page 17 will be assessed through the evaluation. Long-term outcomes, such as higher graduation rates, college and career readiness, and participation in higher education, while expected to be measurable and positive, can not be determined within the time frame of this grant, but will continue to be followed and measured after the project funding has ended.

Methods of evaluation will produce quantitative and qualitative data and include the use of objective performance measures that are clearly related to the project outcomes.

Table 9: Partial list of quantitative performance measures

Objectives / Targets	Measured by	Timeline
Objective - Improved student achievement: All students will meet/exceed district or state achievement levels on standardized tests by year 4		
• 5%pts/yr in Math & Rdg • 10% impr. fr. Previous	•AIMSWeb (gr. k,1, 2) • Local Pre/Post-tests of	Fall & Spring Quarterly

Year • 5% pts in each subtest in yrs. 2, 3, 4 •10% above state average every yr.	academic content •State Testing Program (currently PASS) gr. 3-8 •SC Arts Assessment Program (SCAAP) Gr. 4 &7	 Annually (ELA, Math & Science results) Annually
Objective: Closing the achievement gaps:		
•Rate of increase of F/R, ESOL, & minority students ach. scores to exceed state & district avgs. •10% improvement from previous yr. •10% improvement from previous yr. & Exceed state average.	•State Testing Program (currently PASS) gr. 3-8, disaggregated by ethnicity, lunch status, & language • Disaggregated results from locally developed Pre/Posttests of academic content •ELDA (ESOL test)	Annually Quarterly Annually
Objective: Improved school climate		
• Reduced 10%/ yr. • Reduced 10%/ yr.	•Discipline reports •Suspensions/expulsions	Annually

Improve each yr. • Increased satisfaction w/school each yr.	•Attendance rates •Stakeholder surveys •Teacher transfer requests	

Standardized assessment data will be compared with the previous year's test results in the target schools AND with current year's data compared to a control site. State PASS examination scores from the spring of 2015 will be used as the baseline for assessment of growth in student achievement in math, science, and ELA in 2016, 2017, 2018, and 2019 at the target schools. This information will provide an assessment of change over time. While examining growth over time does not prove that changes are a result of the grant strategies, it is an indicator that the elements associated with program implementation *may* be a contributing factor in any positive or negative effects noted.

The same test scores (math, science, and ELA in 2016, 2017, 2018, and 2019) will be compared with the scores from a control site and with the DD2 district average scores to measure how the target schools are performing compared to other groups. The two control sites, Summerville Elementary (SES) and Gregg Middle Schools (GMS), while not a complete match for the target schools, are the two in the district that are closest in terms of student demographics and achievement. Each year, the data from ENE and ROM will be compared with that of SES and GMS to determine if achievement differences between the arts integrated schools compared to traditional schools are occurring and if they are statistically significant.

In addition to the summative evaluation outlined above, qualitative information will also be used to guide project decisions and to assess project effectiveness.

Table 10: Partial list of qualitative performance measures

Qualitative Outcomes	Measured by	Timeline
Development of standards-based curriculum guide	PD, PI, District & Independent Consultants, Teacher feedback	Yr. 1 – 50% complete Yr. 2 – 100% complete Yr. 3 & 4 – Implementation & Revision
Improved student achievement	• Surveys of School motivation/satisfaction •Parent, Teacher Surveys •Anecdotal evidence	Semi-annually Annually Semi-annually
Closing achievement gaps	•Evaluations/feedback from Achievement Gap/Teaching Strategies for At-Risk Students professional development session(s) •Anecdotal evidence	Annually On-going
Improved school climate	•SIC survey •Principal feedback	Annually Semi-annually

	•Teacher focus group •School Report Card survey	Semi-annually Annually
Fidelity of project Implementation	•School staff interviews • Site visit observations •Review of lesson plans	

Qualitative Outcomes	Measured by	Timeline
Development of standards-based curriculum guide	PD, PI, District & Independent Consultants, Teacher feedback	Yr. 1 – 50% complete Yr. 2 – 100% complete Yr. 3 & 4 – Implementation & Revision
Improved student achievement	• Surveys of School motivation/satisfaction •Parent, Teacher Surveys •Anecdotal evidence	Semi-annually Annually Semi-annually
Closing achievement gaps	•Evaluations/feedback from Achievement Gap/Teaching	Annually

	Strategies for At-Risk Students professional development session(s) •Anecdotal evidence	On-going
Improved school climate	•SIC survey •Principal feedback •Teacher focus group •School Report Card survey	Annually Semi-annually Semi-annually Annually

Both qualitative and quantitative evaluation measures will generate formative and summative evaluation information that will provide performance feedback and permit periodic assessment of progress guide project implementation and measure project effectiveness in meeting goals. Qualitative methods will include the use of rubrics, Likert scales, teacher observation documents, checklists, teacher, student, and parent surveys, and notes and recommendations from monthly Advisory Board and School Improvement Council meetings. These qualitative measures will be used to make ongoing decisions for program improvement or revision. The project timeline will guide S2S activities and may be revised to better serve as a guide to those who will replicate the project as issues arise and are resolved.

Evaluation methods should produce evidence of promise**.** The WWC (What Works Clearinghouse) Review Protocol for Science Interventions, Version 2.0 reviews science interventions designed to impact student achievement. The data collected and

reported as part of the S2S evaluation will address the two major areas of WWC interest: strategies that increase students' learning of science content, processes, and skills, and determining if particular interventions are more effective for particular student subgroups. Results from standardized state achievement tests at grades 3-8, locally developed pre- and post tests, the SC Arts Assessment (at grades 4 &7), and student surveys will be reported by gender, by ethnic group, and by socio-economic status (SES) in order to test three of the project's major assumptions.

Integrating the arts into the core academic subjects:

1. Improves academic achievement for all students,
2. Helps to close the achievement gap for students identified as at-risk (low SES or ESOL),
3. Enhances academic motivation and improves school climate.

While the evaluation methods will not conclusively prove that the integrated arts curriculum and technology infused teaching methods have produced significant changes in the academic achievement of students in all racial/ethnic/economic groups, the evaluation should produce evidence showing a high probability that the intended outcomes have been achieved as a result of grant activities.

Dorchester District 2 is confident of the project's success and is pleased to present this proposal for consideration for Arts in Education Model Development and Dissemination grant competition.