

Project Abstract or Summary

Laptops for 21st Century Learning will focus on technology enhanced project-based learning activities as students acquire the digital literacy skills that are vital to success in the 21st century. Students will learn content knowledge, develop information and communication technology literacy and cultivate workplace competencies such as teamwork, communication, planning and problem solving. The program will provide laptop computers and other digital resources for student use in targeted classrooms and extensive professional development for the students' teachers so that they will be prepared to incorporate these technologies.

The teachers selected for this grant implementation are participating in technology learning communities and are well equipped to use the technology available to them. They have agreed to continue their journey to effectively integrate technology into the curriculum by moving beyond an appropriate but limited use of technology in the instructional process to complete infusion of technology. Their technology learning communities will provide a system for collaboration, mutual support and professional development during the grant implementation.

Students will author a series of increasingly sophisticated multimedia projects that extend the reach of the learning community classrooms. Initial projects, incorporating individual online research and limited multimedia content, will primarily reiterate the District scope and sequence. Projects will increase in technical and cognitive sophistication as teachers acclimate to pedagogies and technologies that provide student centered and inquiry based learning environments. The resulting instruction, engaging students in pragmatic application of content through cooperative action, multimedia authoring and an expanded conception of curriculum, will gradually transform teaching and learning. Students will benefit from effective literacy-technology integration that engages them and teaches them new literacies in an authentic 21st century learning environment (Wolsey, 2007).

2. Project Need

The district began by reviewing the 2006 – 2007 Florida Innovates Technology Survey results. The review showed that students in our middle schools are using technology less often than elementary and high school students (see Figures 1, 2, and 3 below).

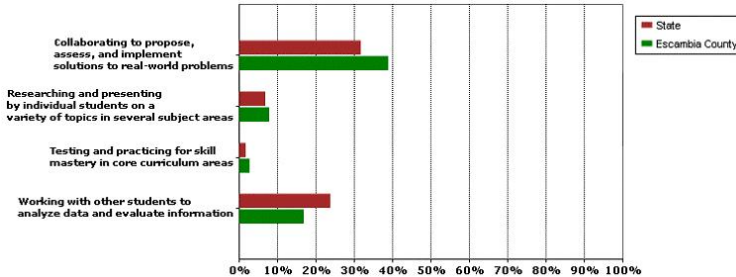


Figure 1. How often students use technology in their classwork (Elementary)

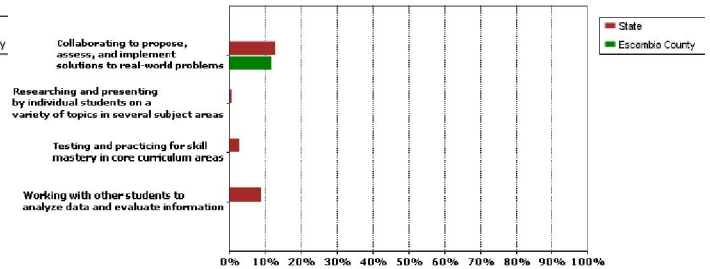


Figure 2. How often students use technology in their classwork (Middle School)

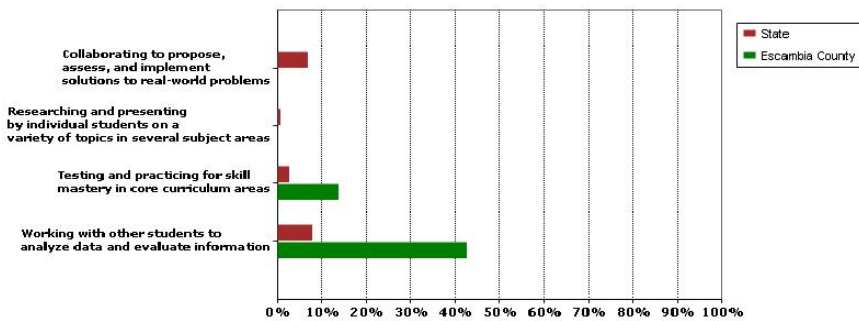


Figure 3. How often students use technology in their classwork (High School)

The student achievement data in reading, math, and science; the Florida Innovates Technology Survey data for 2007 – 2008; the Inventory of Teacher Technology Skills (ITTS) data; and the data from our Technology Learning Group (TLG) program were analyzed next. Three middle schools were selected based on the following: one has a student population that scores among the district’s middle schools lowest in reading gains, math gains, and science proficiency; one consistently scores at the district middle school average in reading gains, math gains, and science proficiency; and one that scores above the district middle school average in reading gains, math gains, and science proficiency but is not the highest scoring middle school in the district. These middle schools (Figure 4 below) offer an opportunity to measure the impact of technology on students scoring in high, average and lower levels.

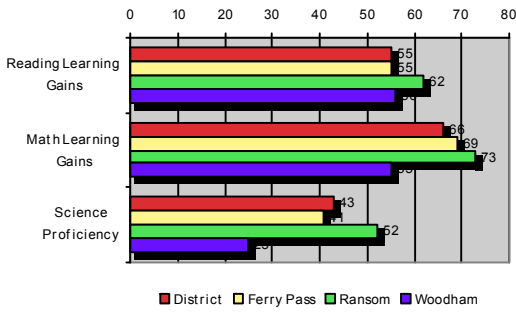


Figure 4. Student achievement data in reading, math, and science

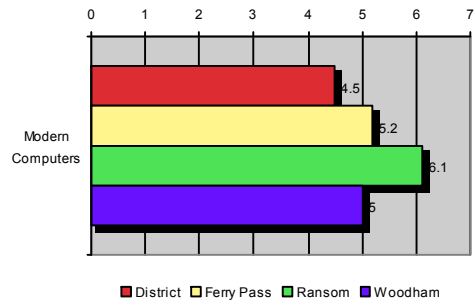


Figure 5. Modern computers per student

All three schools (Ferry Pass Middle, Ransom Middle and Woodham Middle) have less student access to modern computer technology than our district’s average. Figure 5 above shows that there are fewer modern computers per student at selected schools than the district average. Most classrooms in all three schools have limited access because the computers are clustered in labs reserved for select student populations and remediation of general education students.

Digital devices are in short supply at all three of these schools. Figure 6 below shows that there are not adequate digital devices of any kind for each classroom to have regular access. In addition, none of the schools had access to personal response systems or digital recording devices of any kind.

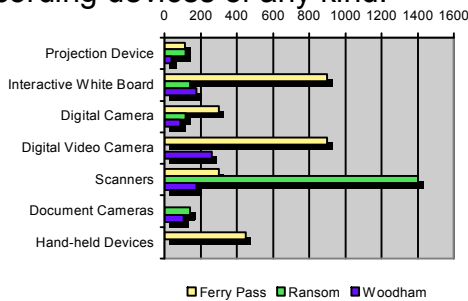


Figure 6. Students per digital device

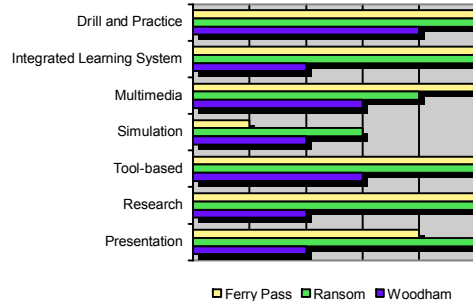


Figure 7. Frequency of Student Use of Technology

The three schools (Figure 7) vary widely in frequency of student use of technology (not at all, once a month or less, once a week, several times a week, or every day). Ransom Middle School reports the most frequent use and Woodham Middle School reports the least frequent use. All three schools report frequent use of drill and practice software (at least several times a week). All three schools report the least usage of simulation software (no more than once a

week). Teachers (Figures 8, 9, and 10) show a high degree of teacher skill which is not reflected in the frequency of student use of technology.

Figure 8. ITTS Percent Score Report for Ferry Pass Middle School

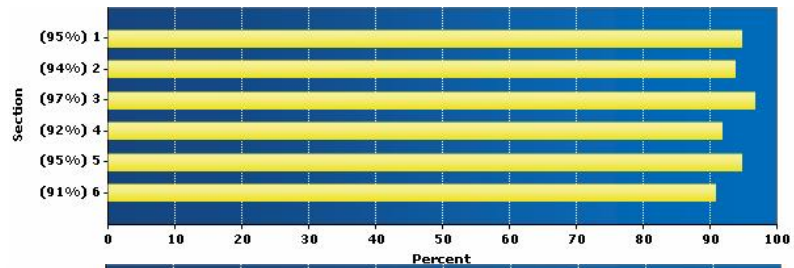


Figure 9. ITTS Percent Score Report for Ransom Middle School

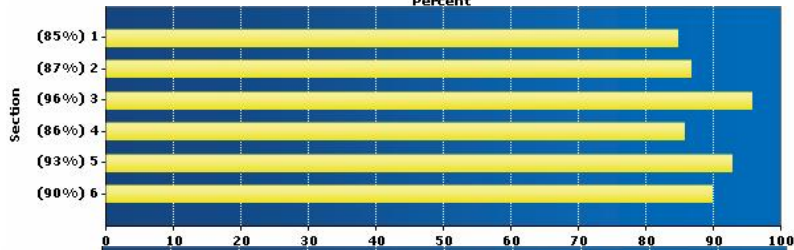
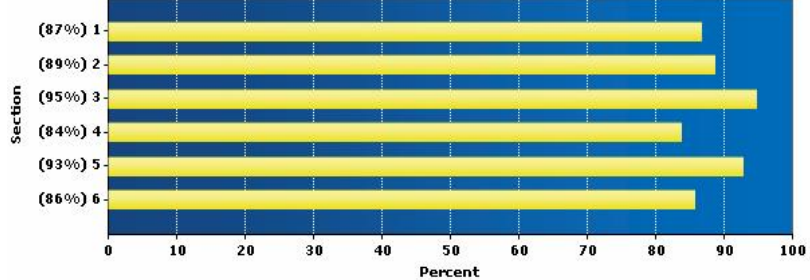


Figure 10. ITTS Percent Score Report for Woodham Middle School



3. Project Design and Implementation

The School District envisions providing each student with access to a 21st Century learning environment in order to, “facilitate the kinds of learning, thinking, and analysis that today’s world demands” (Warschauer, 2006). Teachers will create learning environments which are conducive to powerful uses of technology for student learning. Students will prepare for the challenges of the 21st century by participating in learning activities which use technology broadly and intensely. The report, *Maximizing the Impact: The Pivotal Role of Technology in a 21st Century Education System*, states that “...technology must be used routinely for learning core subjects and 21st century skills, such as critical thinking and problem solving, innovation and creativity, and life and career skills.” This emphasis on using technology routinely for learning core subjects, 21st century skills, and new literacies is reflected in ISTE’s recently

refreshed National Educational Standards for Students which support all students having the opportunity to develop technology skills that strengthen “learning, personal productivity, decision making, and daily life” (Roschelle, 2000). Through the use of a variety of technology resources, such as laptop computers; web cameras; the Internet; a digital content delivery system; digital video; concept-mapping and tool-based software; and the use of Moodle for virtual collaboration; teachers will construct an environment for students where they become learners who are facile both in interpreting content knowledge and transforming that knowledge into new understandings.

The impact of this initiative on student achievement in core content areas and technology literacy as well as its impact on teaching will be measured by the following methods:

1. Students will learn course content, digital literacy and technology skills as they complete four curriculum-based projects that culminate in multimedia products. Student growth will be assessed by 1) Benchmark testing using the District’s new online assessment tool Performance Pathways; 2) Rubrics to measure course content, technology skills, and collaboration; 3) The Florida Student Technology Literacy Tool.
2. Teachers will develop four lesson plans for multimedia projects that integrate authentic technology-enhanced learning experiences into the curriculum. An online data tool will be used to collect these plans so that they can easily be updated to reflect lessons learned during implementation. A rubric will be used to select exemplary lesson plans which will be organized into a lesson bank on the grant website.

A growing body of academic research supports the use of project-based learning in schools as a way to engage students in authentic learning, boost cooperative learning skills, and improve academic achievement. “Project-based learning is a model for teaching that focuses on the major concepts of a curriculum, involving students in meaningful investigations

of those concepts.” (O’Hara, 2003) In a study on pedagogical implications of students generating and editing their own digital video in the classroom, there was “clear evidence of student-generated digital video strongly enhancing pedagogy in the area of student engagement and autonomy” (Kearney, 2005). “When students practice decision making and deductive reasoning and are exposed to examples from real life, they are able to expand their skills, evaluate their options, and think critically...Students learn from each other by analyzing and synthesizing material, reinforcing main points, and moving information from short- to long-term memory. Most importantly, students ‘talk content’ and write for a purpose because their work is often presented in front of their peers” (Stix, 2006).

Technology supported learning environments have “enhanced student learning and the learning process, and enabled students to access information, develop applications and communicate with one another, making learning an active process” (Neo, 2007). Students will utilize online wikis, chat, and forums for virtual collaboration. They will develop their writing skills as they utilize blogs to communicate and reflect. Students will “build literate identities... through writing to their peers to construct meaning” (Wolsey, 2007). Podcasts will be developed to share projects which have common themes. The digital multimedia production process will include reading, writing, interviewing, text-based and Internet-based research, and use of multimedia software applications. Students will define problems, brainstorm, debate solutions, collaborate, plan and schedule tasks, collect and analyze data, make decisions, and self-evaluate as they design and produce digital products to share with their peers, teachers, experts and other audiences. This process cultivates workplace competencies such as teamwork, communication, planning and problem solving (Cole, 2001). Moodle will be used by teachers to organize learning content and to provide students with the opportunity for virtual collaboration and sharing to include wiki, chat, forum, blogging and podcasting.

The critical step in creating this type of collaborative learning environment is to identify schools and teachers who want to teach students using proven and innovative methods and to incorporate the insights of research into teaching strategies for their classrooms. All of the schools selected for Laptops for 21st Century Learning have participated in a structured research-based learning community program, the Technology Learning Group Facilitator Program (TLGF), developed by Instructional Technology to promote the effective integration of technology into the curriculum. Each Technology Learning Group has had sustained support from an Instructional Technology (IT) Teacher. Based on a thorough review of professional development literature, the IT Teachers assist the Technology Learning Group teachers with technology integration support that promotes the technology skills cited in Florida Accomplished Practice #12 and ISTE NETS for teachers. The assistance employs teaming, lesson planning and delivery, as well as a range of targeted professional development modalities. IT Teachers will collaborate with the groups to develop an action research plan to study the instructional impact of laptops and project-based learning. Grant funds will be used to provide resources needed for a successful grant implementation at each site including equipment, software, and professional development. IT Teachers are funded by the School District (3 IT Teachers), EETT Part I Funds (1 IT Teachers), and Title I (2 IT Teachers).

The selected teachers, who are technology learning community members, are already using a teacher laptop, video projector, document camera and digital camera as part of their instructional process. They have developed their technology skills and are ready to begin transition from traditional teacher-directed instruction which has been enhanced by technology to a student-centered learning environment. Their collaborative relationships along with the increased sophistication of skills will be leveraged into a strong foundation for a successful grant implementation. The selected three learning communities include teachers and students in the sixth through eighth grades. These teachers represent each of the core curriculum areas

as well as ESE and Workforce Education. They will collaborate with the IT Teachers to develop a common vision for the grant implementation. Learning community meetings during the spring will focus on improving their knowledge of project-based learning. Teachers will also collaborate with their IT Teachers to plan and implement a basic multimedia project with their students that will provide a starting point for their in-depth summer training. They will also attend the May 2008 Teacher Training Institute: Digital School Initiative, a mini-conference about best practices for technology integration, sponsored by WSRE (the local PBS affiliate), the Foundation for Excellence in Education (a non-profit organization) and the School District.

The primary emphasis of this initiative will be the structured professional development required for teachers to successfully incorporate project based learning with digital media as a part of their instructional process. Teachers will develop their expertise in the design of curriculum and the use of appropriate technology to provide the active engagement, collaborative learning and real-world contexts which allow students the opportunity to become “people who can use their knowledge to communicate, collaborate, analyze, create, innovate, and solve problems” (Partnerships for 21st Century Skills, 2007). Student “learning is maximized if the context for learning resembles the real-life context in which the to-be-learned material will be used...and placing course content in the context of a real-world scenario helps a student remember specific details of a lesson because the context gives the information meaning” (Partnership for 21st Century Skills, 2007).

Teachers who participate in the Florida Digital Educator Program *Teaching and Learning Institutes* and the two-week *School District Summer Technology Integration Institute* will expand their skills in technology usage as an integral part of the curriculum. These two summer institutes will encourage teachers to learn from one another, to bridge the gap between teaching and learning, and to envision themselves as learners. They will use technology as a vehicle for “learning about learning” as they collaborate in the creation,

production and evaluation of a multimedia digital project. Teachers will increase their comfort levels in utilizing Web 2.0 tools such as wikis, blogs, podcasts, etc. as they develop their own projects. They will use digital video and electronic text as resources to develop lessons that will provide students the opportunity to develop the technology literacy skills and productivity skills to ensure that they achieve technology literacy by the end of 8th grade.

During the *District Summer Technology Integration Institute*, teachers will utilize the following District provided resources: Moodle and Web 2.0 tools; Florida Electronic Library; TeacherDomain; Atomic Learning; K-12 Teaching and Learning Center (online resources); science probeware; Office Suite for productivity; digital video production tools; and Performance Pathways (a web-based tool for formative and summative assessment, data analysis, focus lessons, and curriculum mapping). Teachers will also use these following grant provided resources: an on-demand digital video system; NetTrekker d.i.; digital cameras; digital video cameras; web cameras; USB microphones; scanners; PDAs; Inspiration software; InspireData software; and Personal Response Systems for real-time assessment.

The teachers will use these resources to participate in a project creation process similar to the one their students will experience. They will have time “to make mistakes, focus on process, explore new options ... work with colleagues, and reflect on the process of learning and teaching” (Burns, 2002). Teachers will develop integrated units to increase student technology literacy, improve student academic standards, and support the connection between content knowledge, 21st century skills and the workforce. They will identify resources that support the middle school promotion requirement that students complete a career and education planning course in the seventh or eighth grade. Renate and Geoffrey Caine (1991) write that “students who have experience applying what they have learned to several content areas will be better prepared to transfer knowledge later in their lives” (Lee, 2007).

Teachers will focus on creating opportunities for students to use technology tools and skills “to perform a number of operations, from completing individual tasks to collaborating and interacting effectively with peers, experts, and other audiences” (Peng, 2007). The impact of diverse learning styles in relation to perceiving, processing, organizing, and presenting information will be emphasized. Teachers will also develop their expertise in the use of cooperative learning strategies for managing student collaboration. Teachers will increase their understanding of Action Research as they study the *The Reflective Educator's Guide to Classroom Research* by Dana & Yendol-Silva.

During the *Summer Technology Integration Institute* they will also expand their knowledge of assessment strategies. Personal Response Systems will be modeled as research has shown there are “real gains to learning when ERD [student response systems] are used in tandem with knowledge construction activities and, in particular, interaction provided by reciprocal peer learning” (Freeman, 2007). Teachers will explore assessment approaches for student projects. Research has shown “the importance of ongoing self, peer and teacher assessment...” (Kearney, 2007). Therefore, teachers will focus on assessment activities for developing expectations and standards, for catalyzing project improvement and learning, and for compiling and disseminating evidence of student learning (Simkins, 2002). The participating teachers will consider assessment activities for both individual and team processes and products. They will develop a process for assembling an e-portfolio for samples of activities and projects to be shared as appropriate with parents and the community on the grant website.

The technology learning groups will continue to provide sustained professional development during the school year. As a part of the *Summer Technology Integration Institute*, each Technology Learning Community will develop an Action Plan with Implementation Steps to guide their work together during the 08/09 school year. The Action

Plan will incorporate elements of Action Research and the Continuous Improvement Model as teachers go through the process of examining data to identify needs, identifying strategies to meet those needs, planning assessment criteria, and acting upon the results.

Ongoing professional development through peer mentoring, coaching, modeling, just-in-time training and virtual support (Moodle) will be provided by the IT Teachers. Each Technology Learning Group will have its own Moodle course to use for resource sharing and virtual collaboration (Lock, 2006) such as a virtual book study of *Using Technology with Classroom Instruction that Works* and *Web 2.0: New Tools, New Schools*. They will explore why “teachers should use modern technological tools to transform and energize their practice” (Pitler, 2007).

In recognition of the extra effort required for teachers to change from a traditional instructional model to a student-centered and project-based instructional model (Neo, 2007), substitutes will be provided to allow teachers from the same core curriculum areas to continue their development of model lesson plans begun during the summer. These lessons will be collected and then updated to reflect the “lessons learned” during implementation. Exemplary lesson plans will then be organized into an online lesson bank for other educators.

Additional support will be provided by the District’s Subject Area Specialists as they work closely with the teachers to apply research-based methodologies in the selected schools. The IT Teachers and Subject Area Specialists are currently collaborating to modify the District’s instructional methods workshops to include modeling of technology driven contextual instruction that incorporates student use of higher cognitive functions (application, analysis, synthesis, and evaluation).

Administrative support which is flexible in meeting the needs of teachers and students as they adapt to a 21st century learning environment is vital. At the school level Hope and Stakenas (1999) suggested that “principals have three primary roles: role model, instructional

leader and visionary” (Brockmeier, 2005). The principals at the selected schools fit this description. Each principal has committed to provide support and leadership for the laptop initiative at their schools. The administrative teams will be invited to attend the *Teaching and Learning Institutes* and the district *Summer Technology Integration Institute*. They will form a learning community for collaboration and support to include 1) face-to-face meetings and 2) virtual meetings. These virtual meetings will include the school-based administrative teams, appropriate district directors and will be facilitated by an IT Teacher who is a Master Digital Educator. Other Florida MDE’s with appropriate expertise will be invited to participate in the sessions. They will collaborate on using the Classroom Walk Through Process to identify effective technology integration. The principals understand that teachers “will need effective instructional and technology leadership from school and district administrators, access to higher-order technology tools, time to learn about and integrate these tools, and follow-up support and coaching” (Burns, 2006).

According to John Dewey, “If we teach today’s students as we taught yesterday’s, we rob them of tomorrow” (as cited in Dearden, 2005). This proposed partnership of students, parents, teachers, and administrators will ensure that our students are not deprived of their opportunities in the 21st Century. Students will develop higher-order thinking skills by solving authentic, real-world problems. Their parents will be better prepared to partner with them and with their teachers to use technology resources to enrich learning opportunities in their homes. The district will tap into “the intellectual resources and skills of a teaching community” (Glazer, 2005) by using the participating teachers to provide model classrooms for technology integration, serve as model leaders for the Technology Learning Groups, and serve as facilitators for professional development. The action research and data collected during the grant will be analyzed and used to make informed decisions for future ubiquitous computing implementation.

Timeline

Action	Responsible Party	Start	End
Establish and Maintain Grant Website	IT Teachers	6/09	3/09
Begin collaboration with teachers	IT Teachers	6/08	1/08
Pre-assessment of teachers (<i>Inventory of Teacher Technology Skills</i>)	IT Teachers	6/08	1/08
Purchase professional development resources	IT Support Director	7/08	5/09
Purchase resources for student use	IT Support Director	7/08	5/09
Setup laptops, servers, wireless infrastructure and software for project	Technical Support Staff, Network Services Staff, Tech Coordinators	7/08	5/09
Technology Learning Groups collaborate with IT Teachers to implement progressively complex technology enhanced project-based learning	All participating teachers, IT Teachers	2/08	5/09
Establish an Administrator Learning Community	IT Support Director and participating Principals	6/08	5/09
Establish an Evaluation Committee	IT Support Director	6/08	6/09
Plan and develop training resources	IT Teachers, Subject Area Specialists, ESE, FDLRS Westgate	4/08	5/09
Attend <i>Teaching and Learning Summer Institute</i> (Participating teachers, IT Teachers)	Florida Digital Educators	7/08	7/08
Attend <i>District Summer Technology Integration Institute</i> (Participating teachers, IT Teachers)	IT Teachers	6/08	7/08
Provide planning/training opportunities to design technology enhanced project-based lessons	Onsite Technology Learning Communities, IT Teachers	7/08	3/09
Provide training and opportunities to use resources for collaboration	Onsite Technology Learning Communities, IT Teachers	6/08	5/08
Collaborate to develop innovative technology enriched project-based activities	Participating teachers, IT Teachers	7/08	5/09
Orientation for students and parents	Participating teachers, IT Teachers	8/08	8/08
Use Performance Pathways & Student Response Systems for curriculum assessment	Participating teachers	8/08	5/09
Assessments of Student Technology Literacy with FDOE Student Technology Literacy Tool	Participating teachers	8/08	3/09
Create electronic newsletter	IT Teachers	8/08	5/09
Electronic portfolio process	Participating teachers, students	8/08	5/09
Develop lesson plans for innovative technology enriched project-based learning	Participating teachers, IT Teachers	8/08	5/09
Regularly Scheduled Family Nights	Technology Learning Communities	9/08	3/09
Gallery Night to showcase exemplary projects	Participating teachers, IT Teachers	3/09	3/09
Post-assessment of teachers <i>Inventory of Teacher Technology Skills</i>	IT Teachers	3/09	3/09

4. Evaluation

The Office of Evaluation Services will provide support in use of the District's new online assessment tool, Performance Pathways, to create assessments tied to specific benchmarks and to evaluate the test data to guide instruction. This is an integral part of the District's Continuous Improvement Model (CIM) to guide classroom instruction that is focused on individual student needs. Evaluation Services will also assist with grant data collection, pre/post calculations, and evaluations. An Evaluation Team from Evaluation Services, IT, Staff Development, Comprehensive Planning, and the University of West Florida will collect the data and prepare reports for submission to FDOE's Bureau of Instruction and Innovation. The Evaluation Team will collect data from the following : 1) Action Research Plan – Technology Learning Groups will submit the results of their Action Research on a quarterly basis (October, December, March, May), 2) Performance Pathways Student data – All Technology Learning Groups will collect quarterly data to be used for assessment, 3) Electronic Portfolios – All Technology Learning Groups will collect electronic portfolio data in March, 4) Florida Student Technology Literacy Tool – All Technology Learning Groups will collect pre/post data on students' performance, and 5) Learning Gains on FCAT – Participating teachers will document learning gains on the appropriate portion of the FCAT. Data will be collected in June using the district's data mining tool (FCAT Star) or Sunshine Connections if available and submitted to the Evaluation Team for the district's final internal report (FDOE may request a copy).

A project timeline in the project description will guide actions necessary to meet the project goals in a timely manner. The district will monitor the timeline. The district's IT Department contains the workgroups with primary responsibility for the timeline items. The department prepares a monthly review of the data sources for the Superintendent and will include the grant timeline items in the review. This report will also be shared with the schools,

teachers, and other district departments as a status check. Timeline items that have not been completed will be included along with a written plan for corrective action.

Participating educators and administrators will complete the *Florida Inventory of Teacher Technology Skills* and the *Perceptions of Computers and Technology Inventory* before beginning grant associated professional development and near the end of the grant.

Four IT Teachers have been trained as observers for the Center for Research in Educational Policy (CREP) at the University of Memphis. They understand the use of the quantitative and qualitative methods developed to evaluate the teaching, learning and computer integration aspects of the grant implementation (<http://etc.usf.edu/fde/index.htm>). CREP findings for the 3 middle schools participating in this laptop initiative will be compared with the findings from the 2006/2007 one-to-one grant implementation to identify best practice.

5. Support for Strategic Imperatives

Laptops for 21st Century Learning will incorporate specific Florida State Board of Education (SBE) Strategic Imperatives as follows: *Strategic Imperative 1: Increasing the supply of highly qualified (effective) K-12 instructors.* - This grant will use a learning community professional development model that assists teachers with 1) implementing a laptop classroom environment that promotes intrinsically motivated learning and 21st century technology skills through delivery of project-based and discovery oriented instruction and 2) using online instructional and professional development resources to produce rigorous and technically enhanced state standards instruction based on individual students' academic achievement data; *Strategic Imperative 2: Set, Align, and Apply Academic Curricular and Testing Standards* - All grade levels in the three middle schools will receive assistance from IT Teachers, learning communities, and content area specialists in the production and use of technically driven, project based instruction designed to achieve a rigorous delivery of the state academic standards resulting in measurable increases in individual students' academic

achievement as measured by FCAT and other criteria and norm referenced instruments. The exemplary lesson plans and innovative projects will be on the grant website; Strategic Imperative 3: Improve Student Rates of Learning and Independence - The academic rigor, made possible through project oriented instruction that engages students through discovery and pragmatic application of state standard content, will be promoted at all grant schools. Students will experience instruction that is driven by technology and project based application of academic content; Strategic Imperative 4: Improving the Quality of Instructional Leadership - Creation of a school culture associated with a 21st Century learning environment, requires a principal to act as a role model, an instructional leader, and a visionary. The principals have committed to the support and leadership necessary to implement a laptop initiative at their schools and to participate in a virtual learning community that will facilitate collaboration and mutual support. Many of these leadership qualities are also needed in the emerging instructional leadership positions associated with project-based instruction (teaching team leaders, learning community leaders, technology mentors, curriculum coordinators, etc.). This grant will assist with the codification of the processes to cultivate these leadership qualities among school personnel; Strategic Imperative 5: Increase the Quantity and Improve the Quality of Education Options -Charter Schools, and organizations that are considering applying for a Charter School contract with the District, will be invited to participate in grant sponsored professional development activities that support technology integration in their curricula; Strategic Imperative 6: Align Workforce Education Programs with Skill Requirements of the New Economy - The project based learning experiences will promote collaborative and cooperative behavior among students. This learning environment will include the practical application of academic content, acquisition of technical skills, and the exchange of ideas to solve problems necessary to prepare for the 21st century workplace. The grant field trips provided by the Workforce Education Office will provide students opportunities for interaction

with experts in the workforce.; Strategic Imperative 8: Improve Student Opportunities for Access and Advancement - This grant provides the long term academic, vocational, and social benefits, as well as inquiry-based learning and ubiquitous access to technology (as supported by the Florida DOE commissioned Laptops for Learning document).

Just Read Florida: Teachers and students will use NetTrekker Online Service to access curriculum resources in digital formats. NetTrekker's resources are organized by readability level and aligned with Sunshine State Standards to offer resources that meet the differentiated needs of all students. By giving teachers the power to select sites based on the reading level of content contained on the web page, NetTrekker allows students to work in their zone of proximal development and allows teachers to scaffold learning for success (Burns, 2006). In using these resources, students will need to apply appropriate reading strategies such as: key words, skimming/scanning, restating, summarizing, evaluating, etc (Abita, 2000).

Math/Science Initiative: Research indicates that one of the major problems in Science and Math is reading and the lack of conceptual understanding and texts that contain more concepts per line, sentence, and paragraph than any other kind of texts. They require special reading skills that students may not have used in other content areas. Teachers will use technology resources with reading and learning strategies that help students activate prior content knowledge, master vocabulary, and make sense of math and science concepts (Barton, 2002). To improve conceptual understanding of math and science, teachers will develop technology enhanced, inquiry-based learning activities to engage students in the reading, writing and other communication activities required for 21st century work (DeKeyser, 2004).

Florida Sunshine State Standards require students to engage in inquiry-based science with first-hand experience in designing experiments and collecting data. By using the Probeware already in place and grant provided PDAs, students will acquire data literacy skills as they design and conduct experiments, evaluate and analyze their data (Gunter, 2007).

6. Dissemination Plan

Marketing the Laptops for 21st Century Learning initiative will begin with an orientation to introduce the grant to the parents. A series of family nights will provide parents the opportunity to develop the skills and strategies to use technology with students at home. They will focus on 21st century work place needs, digital citizenship and ICT (information and communication literacy). These events will allow parents to network, to create digital products using innovative technologies and to celebrate their students' successes. As part of the family nights, the Workforce Education Department will partner with the Technology Learning Groups at each middle school to provide experts from the community to share aspects of their careers and the "skill sets that new entrants into the workforce need to succeed" (Fletcher, 2007). Students will then participate in field trips to the experts' work places to further enhance the connection between the academic and the real world workforce.

Instructional Technology will continue its partnership with WSRE, the local PBS affiliate, to promote 21st century education as illustrated in the 2007 broadcast and CD *"The Ripple Effect: The Digital School Initiative"* produced by WSRE. The Teacher Training Institute: Digital School Initiative, an annual conference supported by WSRE, the Foundation for Excellence in Education and the School District, will allow participating teachers to share their instructional strategies for using innovative technologies, project based learning, and laptops. There will be also be a "Gallery Night" for students to share exemplary projects.

The district portals (student, teacher, parent, and employee) will be used as a vehicle to disseminate pertinent information, resources, and student projects for the laptop initiative. A grant website will also be created to provide students, teachers, parents, and the global community a window inside the activities associated with the Laptops for 21st Century Learning Grant. An electronic newsletter will be posted to include information about student projects, digital literacy, a calendar of activities, etc.

7. Budget

Thirty teachers will be participating in professional development for the grant. The implementation of the grant will depend heavily on the support offered by the Florida Digital Educator Program. Each teacher will participate in a one-week *Teaching & Learning Summer Institute* and a two-week *District Summer Technology Integration Institute*.

Throughout the grant period, the teachers will be participating in ongoing professional development offered by the district's IT Teachers assisted by the Florida Digital Educator Program.

The twenty-three middle school classrooms will need access to digital devices to implement this project. That access will include eleven laptops per classroom, Inspiration and Inspire Data software, one charging cart per classroom, one wireless interactive tablet, and personal response systems. The classrooms will share access to seventy-five digital cameras twenty-three digital video cameras, seventy-five hand-held devices, twenty-three webcams, six scanners, headphones and microphones. The students in these classrooms will participate in field trips that provide opportunities for interaction with experts in the workforce.

Each school will also be equipped with a digital video content management system and NetTrekker d.i. online subscription for each student.

The District will contract with the evaluator identified by the Florida Department of Education to support program research and evaluation activities.

General Education Provisions Act (GEPA) Plan

In accordance with the requirements of the GEPA Public Law, the Instructional Technology Department has and will continue to provide resources and professional development to ensure equitable access to all participants with special needs as specified in the District Technology Plan. The Instructional Technology Department in partnership with the ESE and FDLRS Departments currently incorporates training on Universal Design for Learning (UDL) as an approach to teaching, learning and assessment into its Technology Learning Group Facilitator program. UDL provides a mechanism for designing technology rich instruction to meet the needs of diverse learners to maximize learning opportunities and be more inclusive and effective.

In addition the District has an Assistive Technology Team comprised of speech pathologists, occupation therapists, physical therapists, school psychologists, technology specialists, an autism specialist, a vision therapist, a transition specialist, and others. The team provides training (to staff and/or students), technical assistance with devices/technology, and assistive technology assessment and planning.

The District through the ESE Department has provided each school with a variety of assistive technology devices including an AlphaSmart portable word processor with the Co:Writer application, a LoTTIE Kit (Low tech tools for inclusive education) and several pieces of software designed as tools for reading and writing interventions. They also provide ongoing training and evaluations to meet the needs of students with special needs.

These resources will be an integral part of The Laptops for 21st Century Learning grant implementation.

Equitable Services for Private School Participation

Escambia School District provided timely and meaningful consultation with appropriate private school officials during the design and development of the District's EETT proposal and all requirements under Title IX General Provisions, Part E – Uniform Provisions “Subpart 1 – Private Schools” have been (and will continue to be) adhered to by the District. In June of 2007 private schools were invited to participate in a planning session for the anticipated No Child Left Behind: Enhancing Education Through Technology (EETT:NCLB) grant application process for the upcoming school year. The IT Teachers presented an overview of the mentor and technology learning group professional development program that was originally begun with EETT:NCLB funding. They also shared the review of professional development literature which supports this approach. The private school representatives agreed that continuing with the model of past EETT:NCLB grant services that focused on professional development would best meet their needs. They were interested in participating in similar training and resource development during this grant implementation. The services which they wished to see included in the grant focused on the following: training opportunities to include MDE Teaching and Learning Institute and the District Summer Technology Integration Institute, Instructional Technology Teacher meetings, Gallery Night and Teacher Training Institute: Digital School Initiative, and development of shared web-based resources. These items were incorporated into the grant application. The private schools will be notified regarding the awarding of this grant along with the dates and process for participating in its professional development activities.

DELIVERABLES FORM (Examples: Manuals, reports, videos, CD ROMs, training materials, brochures, and any other tangible product to be developed by the project.)

(1) Name of Deliverable and Brief Description	(2) Standard(s) for Acceptance	(3) Due Date(s)
<ul style="list-style-type: none"> ▪ Establish and maintain grant website to disseminate information regarding the grant implementation as well as samples of student activities and projects as appropriate and a lesson plan bank 	<ul style="list-style-type: none"> ▪ Appropriately Organized ▪ Attractive ▪ Content Accurate ▪ Content Complete ▪ Design and Content Appropriate to Intended Audience ▪ Format Consistent with Content and Intended Audience ▪ Includes Copyright and Funding Information 	<p>Established by end of 1/08 with updates throughout the grant as appropriate</p>
<ul style="list-style-type: none"> ▪ Online Newsletter to disseminate information regarding the grant implementation including activities and projects 	<ul style="list-style-type: none"> ▪ Appropriate for Duplication ▪ Appropriately Organized ▪ Attractive ▪ Content Accurate ▪ Content Complete ▪ Design and Content Appropriate to Intended Audience ▪ Includes Copyright and Funding Information 	<p>2/08, 4/08, 6/08, 8/08, 10/08, 12/08, 2/09, 4/09</p>
<ul style="list-style-type: none"> ▪ Lesson Plan Bank with exemplary lesson plans that support project based learning, appropriate technology use, and development of 21st century skills across the curriculum 	<ul style="list-style-type: none"> ▪ Design and Content Appropriate to Intended Audience ▪ Content Complete ▪ Grammatically Correct ▪ User Friendly ▪ Peer Review ▪ Includes Copyright and Funding Information 	<p>Initial population by 8/08 with quarterly updates thereafter</p>
<ul style="list-style-type: none"> ▪ Reports from Technology Learning Group Facilitators to include evaluation data and reflections 	<ul style="list-style-type: none"> ▪ Content Accurate ▪ Content Complete 	<p>1/08, 1/09, 3/09</p>

TRAINING, TECHNICAL ASSISTANCE, AND DISSEMINATION FORM (All training and technical assistance (TA) activities whether provided onsite, through distance learning media, conferences, workshops, or other delivery strategies.)

(1) Name of Activity and Brief Description	(2) Quantity and Quality Standards for Acceptance	(3) Method of Documentation	(4) Critical Timelines
<ul style="list-style-type: none"> ▪ Other – IT Teachers will provide coaching, mentoring, one-on-one training, teaming and resource development assistance/in-service as part of technology learning communities framework described in the grant (Technology Learning Group Facilitator Program) to support project based learning, appropriate technology use, and development of 21st century skills across the curriculum 	<ul style="list-style-type: none"> ▪ Appropriately Organized ▪ Content Accurate ▪ Content Complete ▪ Delivery Appropriate to Content and Audience Design ▪ Design and Content Appropriate to Intended Audience ▪ Follow-up Data Indicative of Effectiveness ▪ Participant Feedback Indicative of Usefulness 	<ul style="list-style-type: none"> ▪ Self-Reporting ▪ Analysis of Requests and Responses <p>(The IT Department prepares a monthly review of the data collected from tickets entered for support/professional development provided by the IT Teachers)</p> <ul style="list-style-type: none"> ▪ Sign-in Sheets ▪ Participant Feedback (Summaries as part of forum on Moodle course for specific professional development) 	1/08 – 5/09
<ul style="list-style-type: none"> ▪ Pre-service Training - MDE Summer Training Institute 	<ul style="list-style-type: none"> ▪ Appropriately Organized ▪ Content Accurate ▪ Content Complete ▪ Delivery Appropriate to Content and Audience Design ▪ Design and Content Appropriate to Intended Audience ▪ Follow-up Data Indicative of Effectiveness ▪ Participant Feedback Indicative of Usefulness 	<ul style="list-style-type: none"> ▪ Sign-in Sheets ▪ Participant Feedback (Information gathered by MDEs and Participant responses to forum on Moodle course for grant implementation) 	6/08-7/08
<ul style="list-style-type: none"> ▪ Pre-service Training – District Summer Technology Integration Institute to support increased skill and knowledge in project based learning, appropriate technology use, and development of 21st century skills across the curriculum 	<ul style="list-style-type: none"> ▪ Appropriately Organized ▪ Content Accurate ▪ Content Complete ▪ Delivery Appropriate to Content and Audience Design ▪ Design and Content Appropriate to Intended Audience ▪ Follow-up Data Indicative of Effectiveness ▪ Participant Feedback Indicative of Usefulness 	<ul style="list-style-type: none"> ▪ Sign-in Sheets ▪ Participant Feedback (Information gathered by from followup form after training and Participant responses to forum on Moodle course for grant implementation) 	6/08 – 7/08

(1) Name of Activity and Brief Description	(2) Quantity and Quality Standards for Acceptance	(3) Method of Documentation	(4) Critical Timelines
<ul style="list-style-type: none"> ▪ Use of Consultants to provide training on use of Moodle for professional collaboration and for student use 	<ul style="list-style-type: none"> ▪ Delivery Appropriate to Content and Audience Design ▪ Design and Content Appropriate to Intended Audience ▪ Follow-up Data Indicative of Effectiveness ▪ Participant Feedback Indicative of Usefulness 	<ul style="list-style-type: none"> ▪ Sign-in Sheets ▪ Participant Feedback (Information gathered by from followup form after training and Participant responses to forum on Moodle course for grant implementation) 	6/08 – 7/08
<ul style="list-style-type: none"> ▪ Distribution of Media (Software, Videos, CD ROMs, etc.) and Distribution of Printed Material to support project based learning, appropriate technology use, and development of 21st century skills across the curriculum 	<ul style="list-style-type: none"> ▪ Design and Content Appropriate to Intended Audience 	<ul style="list-style-type: none"> ▪ Purchase Orders 	2/08 – 8/08
<ul style="list-style-type: none"> ▪ Exhibits of student projects as part of the WSRE (local PBS affiliate) Digital School Showcase 	<ul style="list-style-type: none"> ▪ Appropriately Organized ▪ Content Accurate ▪ Content Complete ▪ Delivery Appropriate to Content and Audience ▪ Design and Content Appropriate to Intended Audience 	<ul style="list-style-type: none"> ▪ Anecdotal Data to be collected by teachers from students and parents ▪ Participant Feedback collected by WSRE 	3/08

STUDENT PERFORMANCE FORM (Any measure that is specific to student performance; e.g., test scores, attendance, behavior, award of diplomas, certificates, etc. Students may include pre-k, K-12, and adult learners.)

(1) Name of Performance and Brief Description	(2) Method of Evaluating Performance	(3) Method of DOE Verification	(4) Timelines for Data Collection
<ul style="list-style-type: none"> ▪ Increased Self-Sufficiency Through Use of Technology will improve as measured by a pre and post assessment using the Florida Student Technology Literacy Tool for middle school students of teachers participating in the grant. 	<ul style="list-style-type: none"> ▪ Florida Student Technology Literacy Tool 	<ul style="list-style-type: none"> ▪ Florida Student Technology Literacy Tool Report 	8/08 for pre-assessment and 3/09 for post-assessment
<ul style="list-style-type: none"> ▪ Achievement – Other (NOTE: Middle school student performance will be assessed as follows in these curriculum areas: Language Arts, Math, Reading, Science, Social Studies, Writing, ESE, and Vocational Technology) <ol style="list-style-type: none"> 1. The middle school students of teachers participating in the grant will exhibit improved scores on rubrics used to evaluate multimedia products as their technology expertise, collaborative skills and academic knowledge increases with each project 2. The middle school students of teachers participating in the grant will demonstrate mastery of core curriculum content as measured by benchmarks identified and assessed by Performance Pathways (District online assessment tool) and CIM process for each grading period. 	<ul style="list-style-type: none"> ▪ Use Performance Pathways (District online assessment tool) and CIM process for each grading period to measure identified benchmarks to see if correlation between improved student achievement in targeted curriculum areas and project rubric assessments 	<ul style="list-style-type: none"> ▪ Other – report from District of results 	10/08, 1/09, 3/09, 5/09

SERVICE DELIVERY FORM (Delivery of intended services to target population; e.g., adult literacy services, child find services, student evaluation services, etc.)

(1) Name of Service and Brief Description	(2) Standard(s) for Acceptance	(3) Method of DOE Verification	(4) Timeline for Service Delivery
<ul style="list-style-type: none"> ▪ Adult Literacy Activities as part of the regularly scheduled Parent Nights will provide parents the opportunity to develop the skills and strategies to use technology with students at home. They will focus on 21st century work place needs, digital citizenship and ICT (information and communication literacy). 	<ul style="list-style-type: none"> ▪ Other - Participant Feedback with Information gathered by followup form at each Parent Night 	<ul style="list-style-type: none"> ▪ Other – report from District of results 	9/08 – 3/09
<ul style="list-style-type: none"> ▪ Workforce Education will collaborate to support regularly scheduled Parent Nights to provide parents and students the opportunity to interact with experts from the community who will share regarding their careers and the “21st century skills the current workplace demands. ▪ 	<ul style="list-style-type: none"> ▪ Anecdotal Data to be collected by teachers from students and parents 	<ul style="list-style-type: none"> ▪ Other – report from District of results 	9/08 – 3/09

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