

Cross-Cutting Themes Educational Technology

In addition to including technology strategies across the Master Plan aligned to State and Local technology plans, the Local school system Master Plan Update should outline specifically how it will use all sources of funding in meeting *No Child Left Behind* Statutory Goals:

- Improve student academic achievement through the use of technology in elementary schools and secondary schools.
- To assist every student in crossing the digital divide by ensuring that every student is technologically literate by the time the student finishes Grade 8, regardless of the student's race, ethnicity, gender, family income, geographic location, or disability.
- To encourage the effective integration of technology resources and systems with teacher training and curriculum development to establish research-based instructional methods that can be widely implemented as best practices by State educational agencies and Local educational agencies.

I. EDUCATIONAL TECHNOLOGY PROGRESS

A. FINDINGS

1. Staff knowledge and skills to integrate technology into instruction have increased in 2008.

A three level technology certification program that was introduced in 2005 was continued through 2007. The program allows all staff to work toward being highly knowledgeable in the use and integration of the available technology to improve student achievement and instruction.

Every school provided workshops that prepared teachers to take the Level I Technology Assessment. Courses in *Microsoft Word, PowerPoint, Excel, Front Page*, File Management, Email and Using the Internet were offered at each site. As a result 116 different teachers signed up to take the Level I Assessment one or more times in 2007. Ninety-nine percent of the staff (270) has taken the assessment during the first three years. As of June 2008, 91% of the teachers passed all seven areas and have earned their Level I Technology Certification in Technology Competency. Three of our schools have 100% of their teachers with this certification.

The Level II Certification is in technology integration and involves completing a five (5) day Summer Tech Academy, 12 hours of technology integration training and three (3) observations teaching technology related lessons. As of August 29, 2008, 115 teachers had completed the Tech Academy requirements. These teachers learned skills necessary to complete multimedia projects by working in small groups to complete a project involving digital photography, video editing and sound. The projects produced by these teachers will be used in all Grade 4 Social Studies classes in the school system. Twenty five of the participants completed the

twelve hour technology integration seminars and have been observed teaching the lessons that were developed. These teachers have been Technology Level II Certified in Technology Integration. The remaining teachers will be completing this certification during 2008-2009.

The planned Level III Technology Certification involves the completion of a web based course and group class sessions for the development of a technology unit to be used in the participants' classrooms. The unit will be evaluated for student outcomes. Participants will be expected to mentor a teacher the following year. A pilot project was run in 2007 and five teachers completed the course and are now Technology Level III certified.

2. Students and staff have improved equitable access to appropriate technology resources.

Educational technology is infused throughout the six key goals in the Master Plan. All of the strategies associated with the purchase, replacement or upgrade of technology and the associated infrastructure have been successfully completed in 2007. As a result 20% of the system servers were replaced, 20% of the classroom and administrative computers were replaced and the total number of computers in the school system was increased by 10%. Other initiatives added teacher and student laptops, Promethean Boards, LCD projectors, video and digital cameras.

The 2007 Maryland Technology Inventory indicates that Somerset schools exceeded or met the state targets for technology with a student to computer ratio of 3.1:1 and 100% of classrooms with high speed internet access. In addition it shows a 7% increase in the number of computers and a 20% increase in the number of projection devices in the school system. A local inventory also indicates that 20% of the computers existing in 2006 were replaced with new machines in 2007.

The most significant factor in the increase in the amount of technology available within the SCPS system was the opening of the new high tech Somerset Intermediate School in January 2008. This school houses all of Grade 6 and Grade 7 students in the county. The building provides a wireless infrastructure, a state of the art media center and computer lab, Promethean Boards in every classroom with LCD projectors and document cameras. There are currently 2 mobile laptop carts and four class sets of palm handhelds for use by students.

The students and staff in Somerset County Schools have access to many digital tools and resources that can be used as a regular part of instruction. All Somerset County teachers have access to *United Streaming* in order to include video content in their lessons. Students and staff have access from both school and home to several online databases that are provided by the school system. They include: *SIRS Discoverer*, *SIRS Researcher*, *Culture Grams*, *ProQuest Learning Literature*, *Grolier's New Book of Knowledge*, and *Thompson Gale's Science Resource Center*. All schools have high speed internet access for teachers and students available in the classrooms and computer labs. Access to software such as *Microsoft Office*, *Microsoft Publisher*, *FrontPage*, *Inspirations* and *Kidspirations*, *Success Maker*, *Buggles*, *Cognitive Tutor* and *PLATO* is provided at the appropriate levels.

B. PROGRAMS, PRACTICES, AND STRATEGIES THAT PROMOTED PROGRESS

1. Technology Certification Program

Somerset County Public Schools implemented a three level Technology Certification program in 2005 and expanded the offerings in 2007. The program is designed to move all teachers from the basic level of knowing how to use the technology available in their building to seamlessly integrating technology into instruction in order to improve student achievement. Level I is a certification in technology competency which is earned by successfully completing a performance based assessment designed to assess skills in file management, *Word*, *PowerPoint*, *Excel*, *FrontPage*, Email and Using the Internet. Two hundred and eighty-nine teachers (91%) have earned their Level I Certification in the first two years of the program. Level II is certification in technology integration. This certification is earned through a series of required activities designed to increase teachers' understanding of technology integration. The first step is to attend a five (5) day technology academy that teaches skills necessary to produce multimedia projects. The instructors model the use of backwards mapping to plan instruction and give participants the experience of learning through the use of technology. One hundred and fifteen teachers completed the technology academy by the end of August. Twenty five of them have already completed the 12 hours of training on how to integrate technology into their curriculum. The final level of certification, which became available in the fall of 2007, is designed to move teachers into a technology master teacher role by working with the Maryland Teacher Technology Standards. Five teachers completed the pilot offering of this course in 2007 and will work with and mentor other teachers in our school system this year.

2. Local Support for Technology

The support of the Board of Education in the form of funding the local technology plan through the budget is clearly responsible for the success of these strategies. In 2007, the local budget included \$759,000 for technology. Funding was included for the purchase of new and replacement of hardware (33%), administrative and instructional software purchases (10%), subscriptions to web-based products (4%), maintenance and support contracts for existing programs (2%), infrastructure (8%), professional development (2%), Materials & supplies (2%) and salaries (35%). The implementation of regular replacement cycles for all hardware has also contributed to the success of this initiative.

3. Implementation of Maryland Student Technology Standards

A plan of implementation of the Maryland Student Technology Standards was put in place for Grades K through 5 in the Fall of 2007. Each elementary student visits the computer lab at least once per week in order to work on technology skills. Students use a web-based curriculum called *Easy Tech* by Learning.com to work through lessons that have been aligned to the student standards. Standards that are not covered by the *Easy Tech* curriculum are taught by either the classroom teacher or computer lab assistant using other resources provided by the county.

C. RELATED RESOURCES

RELATED RESOURCES FOR ED TECH PROGRESS	
Staffing	
<ul style="list-style-type: none"> Hired instructors for the Tech Academy and Integration Seminars 	Cost: \$ 10,800 Source: ED Tech Grant
Core Program	
<ul style="list-style-type: none"> Purchased the <i>Easy Tech</i> Curriculum 	Cost: \$ 6,875 Source: Local/State
Materials, Supplies & Equipment	
<ul style="list-style-type: none"> Purchased a New PowerSchool Servers 	Cost: \$20,000 Source: Local/State
<ul style="list-style-type: none"> Replaced Computers in 3 Computer Labs (GES, WHS, CHS) 	Cost: \$75,000 Source: Local/State
<ul style="list-style-type: none"> Replaced 20% of Classroom Computers 	Cost: \$ 50,000 Source: Local/State
<ul style="list-style-type: none"> Purchased New LCD Projectors & Document Cameras. 	Cost: \$ 60,000 Source: Local
<ul style="list-style-type: none"> Purchased 41 Computers for Elementary Classrooms 	Cost: \$ 40,000 Source: Local/State <i>* Duplicated Reference</i>
<ul style="list-style-type: none"> Purchased Promethean Boards 	Cost: \$93,182 Source: Local/State <i>* Duplicated Reference</i>
<ul style="list-style-type: none"> Purchased Teacher Laptops 	Cost: \$43,000 Source: Local/State
<ul style="list-style-type: none"> Purchased the <i>United</i> Streaming and Other Online Databases 	Cost: \$10,000 Source: Local/State
Professional Development	
<ul style="list-style-type: none"> Paid Stipends for Teachers in the Tech Academy 	Cost: \$43,200 Source: Ed Tech Grant
<ul style="list-style-type: none"> Paid Stipends for Teachers Completing the Level III 	Cost: \$ 5,000 Source: Local/State

II. EDUCATIONAL TECHNOLOGY CHALLENGES

A. FINDINGS

- High school teachers are not integrating technology at the level needed in order to improve student learning through technology.**

Leadership teams at the high school level conducted walk throughs of 357 classes during the 2007-08 school year. One of the many activities of focus was the use of technology. Although technology was being used 38% of the time, the majority of that observed use was by the teacher using an LCD projector. Students were observed using technology only 12% of the time. Another indication that the high school teachers' integration of technology is not sufficient is the training high school teachers have pursued. Out of all the teachers who have completed the Level II Technology Integration Certification, only 16% are high school teachers. Of the 29 high school teachers who completed the Technology Academy, only 4 have gone on to complete the Technology Integration Certification.

2. The Maryland Student Technology Literacy Standards need to be consistently implemented in Grade 6 through 12.

Although the MSTLS have been implemented in Grades K through 5, a plan to monitor implementation at the Intermediate School (Grades 6-7) and the high schools (Grades 8 through 12) has not been put in place. Teachers at the Intermediate School are integrating technology into their instruction and as a result students are using technology more at this level than any other. A plan to implement the draft high school standards has not been developed. Students at these levels do not have weekly dedicated time to learn technology skills; therefore, it is difficult to implement the standards consistently.

B. PROGRAMS, PRACTICES, AND STRATEGIES TO ADDRESS THE CHALLENGES

1. We are challenged to motivate high school teachers to integrate technology on a regular basis.

The students attending Somerset Intermediate School (Grades 6 and 7) see the integration of technology into their classrooms as normal practice. Every classroom is designed as a Promethean Activclassroom with LCD projectors, Promethean Boards and ActiveVote responder sets. Teachers also have their own laptops and a document camera. Teachers often check out one of the two mobile laptop carts to use in their classroom or take students to the computer lab to work on projects.

Teachers at the high school level need to be prepared for these students and their expectations of technology use. A plan has been put into place to begin preparing the high school teachers this year. All Grade 8 teachers will receive laptops and training on using them effectively. In addition, all Grade 8 classrooms will receive LCD projectors, Promethean Boards, a set of Activotes and a document camera. Each year a subsequent Grade will be added to this plan until all high school classroom have the technology available in our Intermediate School.

All high school teachers will be encouraged to complete the Level II Technology Integration Certification. The Grade 8 teachers have already completed the Technology Academy and have signed up for Part II which is to be completed this year. Training has also been set up in the use of the Promethean Boards.

2. We are challenged to implement the Maryland Student Technology Standards in Grades 6-12 along with an effective monitoring system.

Students in Grades 6 through 8 do not have a regular technology class in which to cover the needed standards. It will be the responsibility of the classroom teachers to assure the standards are taught and students master the necessary skills. A work group consisting of several Intermediate School teachers will be working this Fall to develop a plan to align the standards to classroom instruction. This plan will include a method of tracking and recording student mastery of the indicated skills.

A committee of teachers will begin to study the draft high school standards in order to be prepared to develop an implementation plan for next year.

C. RELATED RESOURCES

PROGRAMS, PRACTICES, & STRATEGIES TO ADDRESS CHALLENGES	
Staffing	
<ul style="list-style-type: none"> Hire 3 Instructors for the Summer Technology Academy 	Amount Budgeted: \$ 7,200 Source: Ed Tech Grant Timeline: Summer 2009
<ul style="list-style-type: none"> Hire Instructors for the Integration Seminars 	Amount Budgeted: \$ 2,160 Source: Local/State Timeline: Fall 2008
Materials, Supplies & Equipment	
<ul style="list-style-type: none"> Purchase Promethean Activclassroom Components 	Amount Budgeted: \$ 68,940 Source: Local/State Timeline: 2008-2009 <i>* Duplicated Reference</i>
<ul style="list-style-type: none"> Purchase Document Cameras 	Amount Budgeted: \$6,840 Source: Local/State Timeline: 2008-2009
<ul style="list-style-type: none"> Purchase Teacher Laptops 	Amount Budgeted: \$ 12,000 Source: Local/State Timeline: Fall 2008 <i>* Duplicated Reference</i>
Professional Development	
<ul style="list-style-type: none"> Send One High School and One Elementary Teacher to Become a “Certified” Promethean Trainers 	Amount Budgeted: \$ 3000 Source: Local/State Timeline: September 2008
<ul style="list-style-type: none"> Train all Grade 5 & 8 Teachers on the Use of the Promethean Activclassroom Components. 	Amount Budgeted: \$2,400 Source: Ed Tech Grant Timeline: 2008-2009 <i>* Duplicated Reference</i>
<ul style="list-style-type: none"> Pay Stipends for All Grade 8 Teachers to 	Amount Budgeted: \$2,880

PROGRAMS, PRACTICES, & STRATEGIES TO ADDRESS CHALLENGES

Complete the Integration Seminars	Source: Local/State Timeline: Fall 2008
-----------------------------------	--

D. CORRELATION OF PROGRAMS, PRACTICES, AND STRATEGIES WITH MASTER PLAN EXTENSION 2008-2010

<i># of Action Step</i>	<i>Action Step Description</i>
1.9.1 Technology Standards: All students meet or exceed Technology Standards as defined by the State.	1.9.1.1. Monitor Implementation of K-5 Standards using the approved checklist.
	1.9.1.2. Develop and implement a plan for covering Standards in Grades 6-8.
	1.9.1.3. Develop a system or tool to monitor the implementation of the standards in Grades 6-8.
	1.9.1.4. Develop a plan to implement high school standards.
7.3.1. Equipment: Available technology meets or exceeds the requirements of administrative and instructional applications.	7.3.1.2. Conduct annual equipment inventory to identify that which does not meet the standards.
	7.3.1.3. Replace or upgrade equipment identified as not meeting the standard.
	7.3.1.6. Research a solution for 7th Grade laptops and purchase based on recommendations
	7.3.1.7. Provide a projection device for every HSA course classroom.
	7.3.1.8. Provide Promethean Boards in every 5th & 8th Grade classroom.
	7.3.2.11. Increase the number of classrooms that meet SCPS standard for high tech classrooms.

