

I.F. i.
Cross Cutting Themes
Educational Technology

The Bridge to Excellence legislation requires that the Master Plan “shall include goals, objectives, and strategies” for addressing how technology will be integrated into curriculum, instruction, and high quality professional development in alignment with the objectives of the Maryland Plan for Technology in Education and local technology plans. The five main objectives of the State plan are as follows:

- Objective 1: Access to high performance technology and its rich resources is universal;
- Objective 2: All educators will be highly knowledgeable and skilled, capable of effectively using technology tools and digital content;
- Objective 3: Technology tools and digital content that engage our students will be seamlessly integrated into all classrooms on a regular basis;
- Objective 4: Technology will be used effectively to improve school administrative functions and operational processes; and
- Objective 5: Effective research, evaluation and assessment will result in accountability and continuous improvement in the implementation and use of technology.

Instructions:

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:

- To 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 the eighth grade, 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.

A. PROGRESS MADE IN 2006-2007 TOWARD MEETING EDUCATIONAL TECHNOLOGY GOALS:

1. Somerset County Public Schools students and staff have access to high performance technology.

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 2006. 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 laptops, LCD projectors, video and digital cameras, and student palm handhelds to the inventory.

The April 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 2005 were replaced with new machines in 2006.

2. Somerset County Public Schools staff has opportunities to become highly knowledgeable and capable of effectively using technology tools and digital content.

A three level technology certification program that was introduced in 2005 was continued in 2006. 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 177 different teachers signed up to take the Level I Assessment in 2006. In addition 30 staff members signed up to retake parts in which they were unsuccessful the first time. 93.1% of the staff (270) has taken the assessment during the first two years. As of June 2007, 71% of the teachers have passed all seven areas and have earned their Level I Technology Certification in Technology Competency.

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 June 30, 2007, 44 teachers had completed the Tech Academy. 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 4th grade social studies classes in the school system. Nineteen of the participants also completed the twelve hour technology integration seminars and are now waiting to be observed teaching the lessons that were developed.

The planned Level II 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.

3. Technology tools and digital content that will engage our students is available for all staff and students to use on a regular basis.

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. Every teacher has access to an LCD projector, either in their classroom or shared within the department. Teachers and students also have access to digital cameras and digital video cameras for use in the

classroom. 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. IDENTIFIED PRACTICES, PROGRAMS, OR STRATEGIES DESIGNED TO FOSTER THIS SUCCESS:

1. 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 2006, 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.

Specific Implemented Master Plan Action Steps in this area were:

- 1.6.1 Elementary Computer Labs were updated with new computers.
- 1.6.1 20% of administrative computers were replaced with new machines.
- 1.6.1 10% of all classroom computers were replaced with new computers.
- 1.6.2 Servers scheduled for replacement were upgraded
- 1.6.4 100% of the local area networks were upgraded to the Windows environment.
- 1.6.4 100% of all computers on the network have been upgraded to Windows XP.
- 1.6.8 The student handheld project was expanded with the purchase of 3 new class sets of handhelds and keyboards.

2. Technology Certification Program

Somerset County Public Schools implemented a three level Technology Certification program in 2005 and expanded the offerings in 2006. 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 six teachers (about 71%) 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 gives participants the experience of learning through the use of technology. Forty-four teachers completed the technology academy by the end of June. Nineteen of them have already completed the 12 hours of training on how to integrate technology into their curriculum. The final level of certification, which will be 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. These teachers will work with and mentor other teachers in our school system.

Specific Implemented Master Plan Action Steps in this area were:

- 1.6.11 Expand the role of the Tech Leader to include planning and implementation of professional development.
- 3.6.3 Implement the concept of "Tech Day" training for teachers at the intermediate school.
- 3.6.12 Provide technology related professional development at the site level to prepare teachers for the assessment.
- 3.6.13 Provide technology related professional development at the county level to prepare teachers for certification in technology integration.
- 3.6.20 A three level Technology Certification program was implemented to allow teachers to earn certification in technology competency, technology integration and as a technology master teacher.

C. CHALLENGES IN MEETING THE EDUCATIONAL TECHNOLOGY GOALS:

1. The majority of classroom teachers are satisfied with their command of basic technology skills and are not seeking the skills to seamlessly integrate technology into their instruction in order to maximize student engagement and learning.

The focus of technology professional development has shifted from teachers being able to use technology to teachers knowing how to integrate technology into their curriculum as a result of the new Technology Certification program. Level I and II have been fully implemented; however, the second phase of Level II which focuses on the integration of technology into instructional lessons didn't begin until April 2007. Less than 50% of the teachers eligible to participate signed up in the spring. The Level III course was still in the planning phase in 2006. Progress with the integration phase cannot happen until teachers begin to move through all three levels of the program. As teachers begin to integrate technology into their instruction they will expect students to have the skills necessary to use the technology. The need to implement the Maryland Student Technology Standards is evident by the lack of progress in students having all of the necessary skills to use the technology.

1. We are challenged to have all teachers complete the three levels of technology certification.

2. The elementary computer curriculum must be revised to include a structured keyboarding program and to incorporate the Maryland Student Technology Standards.

Elementary students in Somerset County attend special subject classes every week to give them the exposure to music, art, physical education and computers. All classes are scheduled into the computer lab for 30-50 minutes once per week to learn computer skills, practice keyboarding and do activities related to classroom instruction. Currently lab assistants are using the *Easy Tech* curriculum by Learning.com to teach the skills and find related activities for students to do. Keyboarding is taught using various software packages during this computer time. It is difficult to teach keyboarding skills during a class that only meets once per week. A schedule of consecutive days in the lab will need to be developed to reinforce keyboarding skills if elementary students are going to be successful in this activity. Students are expected to have certain skills when they leave the elementary grades and enter the secondary level. Teachers in grades 6 and 7 have expressed concerns over the students' lack of skills in some areas, such as using Word, Excel and PowerPoint. The curriculum in the elementary school needs to be revised in order to make sure every student leaves 5th grade with the required skills. A method for tracking the mastery of skills must also be implemented. Finally, the skills must be matched to the Maryland Student Technology Standards.

1. We are challenged to implement a structured keyboarding program at the elementary level.
2. We are challenged to revise the elementary technology curriculum to match the Maryland Student Technology Standards.

D. CHANGES OR ADJUSTMENTS TO ENSURE MEETING THE EDUCATIONAL TECHNOLOGY GOALS:

We are challenged to have all teachers complete the three level technology certification program.

In order to meet this challenge the school system will continue to support the technology certification program and to encourage teachers to participate.

| ACTIONS & RESOURCES TO MEET CHALLENGE | |
|---|---|
| Staffing | |
| <ul style="list-style-type: none"> • Hire three (3) instructors for the two (2) Technology Academy sessions. | <p>Amount Budgeted: \$ 9,000 Source: Ed Tech Competitive Grant Timeline: Summer 2007 & 2008</p> |
| <ul style="list-style-type: none"> • Hire two (2) instructors for the Integration Seminars. | <p>Amount Budgeted: \$ 1,080 Source: Ed Tech Competitive Grant Timeline: Fall 2007 & Winter 2008</p> |
| <ul style="list-style-type: none"> • Hire an instructor for the Level III online course. | <p>Amount Budgeted: \$ 2,700 Source: UMES MHEC Grant Timeline: Fall 2007 & Spring 2008</p> |

| ACTIONS & RESOURCES TO MEET CHALLENGE | |
|--|--|
| Professional Development | |
| <ul style="list-style-type: none"> Offer the 5 day Technology Academy during the summer of 2007. Participants are paid a stipend upon completion. | Amount Budgeted: \$ 27,000 Source: Ed Tech Competitive Grant Timeline: Summer 2007 & 2008 |
| <ul style="list-style-type: none"> Offer the technology Integration Seminars. Teachers are paid a stipend to participate. | Amount Budgeted: \$ 8,100 Source: Ed Tech Competitive Grant Timeline: Fall 2007 & Winter 2008 |
| <ul style="list-style-type: none"> Offer the Level III online course to teachers that have completed level II. Teachers are paid a stipend upon completion. | Amount Budgeted: \$ 2,700 Source: Ed Tech Competitive Grant Timeline: Fall 2007 & Spring 2008 |
| Core Program & Intervention | |
| <ul style="list-style-type: none"> Continue to investigate the possibility of a salary increase associated with the completion of level III | Amount Budgeted: \$0 Source: Superintendent' s Time Timeline: 2007-2008 |
| Materials, Supplies & Equipment | |
| <ul style="list-style-type: none"> Purchase laptops for teachers who complete Level III online course. | Amount Budgeted: \$ 15,000 Source: Thornton Timeline: Fall 2007 & Spring 2008 |
| <ul style="list-style-type: none"> Purchase Data Sticks for teachers participating in the Technology Academy. | Amount Budgeted: \$ 1,800 Source: Thornton Timeline: Summer 2007 & 2008 |
| <ul style="list-style-type: none"> Purchase materials for the Technology Academy | Amount Budgeted: \$ 225 Source: Thornton Timeline: Summer 2007 & 2008 |
| <ul style="list-style-type: none"> Purchase material for the Level III online course | Amount Budgeted: \$ 150 Source: Thornton Timeline: Fall 2007 & Spring 2008 |

We are challenged to implement a structured keyboarding program at the elementary level.

| ACTIONS & RESOURCES TO MEET CHALLENGE | |
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| Staffing | |
| <ul style="list-style-type: none"> Assign elementary instructional technology responsibilities to the <i>Reading First</i> and Elementary Program Coordinator. | Amount Budgeted: \$ 15,800 Source: Local Timeline: Fall 2006 <i>Duplicated Reference</i> |
| <ul style="list-style-type: none"> Meet with Technology Leaders from elementary schools twice per month to research and plan the implementation. | Amount Budgeted: \$ 4,000 Source: Title II, Part D, ESEA Grant Timeline: 2007-2008 |

| ACTIONS & RESOURCES TO MEET CHALLENGE | |
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| Professional Development | |
| <ul style="list-style-type: none"> Provide training for the elementary lab assistants on the use of the new keyboarding software. | Amount Budgeted: \$0 Source: Staff Time Timeline: Winter 2008 |
| Core Program & Intervention | |
| <ul style="list-style-type: none"> Purchase a standard keyboarding program for all elementary schools. | Amount Budgeted: \$ 6,000 Source: Local Timeline: Fall 2007 |

We are challenged to revise the elementary technology curriculum to match the Maryland Student Technology Standards.

| ACTIONS & RESOURCES TO MEET CHALLENGE | |
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| Staffing | |
| <ul style="list-style-type: none"> Assign elementary instructional technology responsibilities to the <i>Reading First</i> and Elementary Program Coordinator. | Amount Budgeted: \$ 15,800 Source: Local Timeline: Fall 2006 <i>Duplicated Reference</i> |
| <ul style="list-style-type: none"> Meet with Technology Leaders from elementary schools twice per month to research and plan the revisions. Match <i>Easy Tech</i> lessons to the Maryland Student Technology Standards and develop a scope and sequence. | Amount Budgeted: \$ 4,000 Source: Title II, Part D, ESEA Grant Timeline: 2007-2008 <i>Duplicated Reference</i> |
| Professional Development | |
| <ul style="list-style-type: none"> Provide training for the elementary lab assistants in the use of the <i>Easy Tech</i> curriculum. | Amount Budgeted: \$0 Source: Staff Time Timeline: Fall 2007 |
| <ul style="list-style-type: none"> Provide training for elementary lab assistants on how to track and record student mastery of skills. | Amount Budgeted: \$0 Source: Staff Time Timeline: Fall 2007 |
| Core Program & Intervention | |
| <ul style="list-style-type: none"> Purchase licenses for every elementary student for the <i>Easy Tech</i> curriculum to be used in the computer labs. | Amount Budgeted: \$ 6,000 Source: TL8 Consortium Grant Timeline: 2007-2008 |

