Technology Plan
for
Pulaski County Public Schools
2009-2012

INTRODUCTION 3

MISSION STATEMENT 5

STAKEHOLDERS 6

GOALS, OBJECTIVES, AND STRATEGIES 7

CURRENT STATUS/NEEDS ASSESSMENT 19

DURATION/IMPLEMENTATION RESPONSIBILITY 23

INTEGRATION 30

PROFESSIONAL DEVELOPMENT AND SUPPORT PROGRAMS 33

CONNECTIVITY 35

EDUCATIONAL APPLICATIONS 38

ACCOUNTABILITY 41

TECHNOLOGY BUDGET 43

COLLABORATIONS AND PARTNERS 46

EXECUTIVE SUMMARY 47

REVIEW OF ACCOMPLISHMENTS 50

HORIZONS 51

LOCAL TECHNOLOGY POLICIES AND GUIDELINES 52

Introduction

The year 2000 has come and gone a decade ago. The new millennium is upon us whether we are ready for it or not. The key word for the 21st Century is going to be *change*. The worlds of education and work have already been feeling the effects of change. In small areas, like Pulaski County, all over the country, hundreds of manufacturing and textile jobs have been lost. Unemployment rates continue to rise, and localities struggle to attract new industries. Localities look to educators to provide a highly trained workforce that will attract new industry. Educators struggle to meet new federal and state mandates and initiatives such as the No Child Left Behind Act which are under funded and rely on threats and sanctions to bring about change. Educators must walk a precarious assessment tightrope to meet the benchmarks of state testing programs which focus on low-level thinking skills and the workforce need for high-level thinking skills.

What has caused the changes occurring in our industries? According to Ian Jukes in recent articles, we have moved from the Industrial Age of the 20th Century to the Information and Communication Age of the 21st Century. Technology, not just computers, is changing the world around us at an exponential rate. Workers will no longer be able to train for a single type of job and expect to keep it until retirement. To keep up, education must prepare its students for not only higher education but also the world of work. Our students must learn to be problem solvers. They must be able to apply their knowledge, ask questions, access data sources and know how to use the information, work as a team, and evaluate their performance. They truly must become life-long learners to keep up with the changing job markets.

Technology will play an integral part in helping educators prepare our students for the 21st Century world of work. But, technology must be integrated seamlessly into the curriculum. Research has proven that it will not work as a separate part of the education process. Pulaski County's Technology Plan covers the next three years. With the rate of change occurring in the technology field, we don't feel that a plan for more than 3 years is practical or wise. To meet the needs of our school system and community, our technology plan must focus on three specific areas: infrastructure, staff development, and curriculum.

If technology is to play a vital part in our curriculum and teaching, there must be a solid infrastructure in place. The quickest way to kill a teacher's or student's enthusiasm is to provide training for the latest hardware or software and have it not work when it is tried back at school. Bandwidth is crucial for a community trying to attract major industries. It is also critical for multimedia applications and Web applications in all schools. Because of the rate of change in the technology industry, replacement cycles are crucial. All of these components are necessary for a solid technology infrastructure. The critical element is funding. Hard hit localities do not have the financial resources to guarantee the constant funding that technology requires. With rising budget deficits, federal and state revenue sources cannot be relied on to provide the funding that technology requires.

Communities must learn to cooperate, share resources, and form partnerships if the funding problems are to be solved.

Staff development is essential if technology is to play a vital part in our curriculum and teaching. However, we can no longer rely on the one time, one hour staff development offerings that don't allow teachers and administrators to use the tools in a meaningful way. With high stakes assessments becoming the norm, we must make informed instructional decisions based on our data. This requires training to learn how to get the data in a form that is usable and also how to use the data to make changes. Technology must become a valued tool by all administrators and central office personnel who must become role models in its use. Only then will our instructional staff completely embrace technology as the useful and essential tool that it is. Time is a precious commodity and is one of the chief reasons that staff development often fails. To meet the needs of our administrators and instructional staff, we must look more to alternative methods of staff development such as video conferencing, online classes, and distance learning offerings.

A solid infrastructure and a well trained staff are crucial to the last component, our curriculum. The 21st Century Information and Communication Age requires changes be made to our curriculum if our students are to be prepared for a world of work that is constantly changing. Students must be able to apply what they are learning to real world situations. This will require even more staff development. Pulaski County Public Schools are aware of this and are working to align and change their curriculum.

Mission Statement

The Pulaski County Public Schools, with its commitment to excellence and equity, will educate all students to be productive, responsible citizens and life-long learners in a rapidly changing, global society. We believe that technology is a dynamic tool for attaining life-long learning and communicating in a global society.

"If we want our children to be successful on the test, if we want them to be successful in life our emphasis as professional educators has to be on more than just that. Rather there has to be more emphasis placed upon higher order thinking skills (HOTS), on Bloom Taxonomy of Higher Order Thinking, on critical thinking, on problem solving, on project & process based learning. School must become a place where students actively engaged in constructing their own knowledge & know how, develop an understanding & the ability to apply key content concepts & ideas, explore dynamically, discover, pose questions & question answers, solve problems, engage in complex tasks that enable them to address essential questions & participate in the processes that make up intellectual accomplishment, tasks that are generally inquiry driven, span different media, link different disciplines, have more than one right answer, multiple routes to each of these answers, an understandable purpose & a connection to the real world outside school."

Ian Jukes

Stakeholders

This plan was created through the joint efforts of the Departments of Research and Technology and Curriculum, Instruction, and Assessment. The Superintendent and School Board provided further input. The results from a technology survey administered to all administrators and instructional personnel were also utilized in the development of the plan. Recommendations from the site council at each school also aided in the development of this plan.

With an unemployment rate approaching six percent and more layoffs announced almost monthly in the textile and manufacturing industries of Pulaski County, it is not just the schools that have a stake in this technology plan. The Director of Research and Technology serves on the county Economic Development Committee and the Regional Technology Task Force. This technology plan addresses goals and concerns of local government and business leaders. Finally, both the Director of Research and Technology and Executive Director of Curriculum, Instruction, and Assessment meet with representatives of New River Community College, Virginia Tech, and Radford University to discuss technology issues. Information from these meetings was used in the development of this technology plan.

In order to reach all stakeholders, the plan will be published on the district Web site. The link will be located on the Technology Department's Home Page.

Goals, Objectives, and Strategies

Goal 1: Pulaski County Public School students will meet or exceed all benchmarks on national, state, and local assessments.			
Objective 1: By May of 2009, 100% of eligible Pulaski County Public School students will take End of Course Standards of Learning tests online based on data from the mass load template and the Virginia Department of Education.			
Strategy	**Cost**	**Completion Date**	**Responsibility**
1. Purchase and install 12 new servers (1 at each school, 3 at the high school) to make the network more stable by distributing the processing load.	$60,000	Summer 2010	Network Engineer
2. Replace the computers in the English Pod with 60 new desktop computers. The computers in the lab are 5 years old and are too slow for many of our current applications.	$48,000	Summer 2009	Technicians
3. Standardize computers in the business labs and CAD lab in the Vocational Department through the use of images to meet the system requirements of online testing	No Cost	Spring 2009	Technicians
4. Purchase and install enough access points to support wireless networking.	$36,000	Summers 2006-09	Telecom Switch Engineer
5. Add 2 laptop carts to each middle school.	$120,000	Summers 2006-08	Director of Research and Technology
6. Purchase at least 1 laptop cart for each elementary school	$240,000	Summers 2007-09	Director of Research and Technology
7. Purchase and install a network printer for each cart.	$2,700	Summers 2007-09	Technicians
8. Increase the number of full-time technicians to 7. There will be one full-time technician at Pulaski County High School, Dublin Middle School, Pulaski Middle School, Dublin Elementary, Critzer Elementary, Riverlawn Elementary, and Pulaski Elementary. Snowville Elementary will share one full-time technician.	$102,400	Spring 2010	Director of Research and Technology
9. Designate specific personnel to be responsible for online testing tasks at each Pulaski County School and train new staff.	No Cost	Summer 2009	Instructional Technology Specialist
10. Provide training to all administrators and instructional personnel involved in online testing at all Pulaski County Schools and train new staff.	$1000	Summer 2009	Instructional Technology Specialist and VDOE
11. Increase bandwidth to all school to allow for expanded use of the Internet to support instruction.	$180,000	Summer 2008	Director of Research and Technology
12. Replace switches with PPOE switches and add additional switches to optimize network speeds inside the building.	$150,000	Summers 2005-10	Telecom Switch Engineer
13. Standardize computers through the use of images to meet the system requirements of online testing	No Cost	Summers 2005-10	Technicians
14. Purchase and install access points to support wireless networking based on continuous testing of connectivity.	$12,000	Summer 2005-10	Telecom Switch Engineer
15. Provide training to all administrators and instructional personnel involved in online testing at all schools.	$2000	Continuous	Instructional Technology

			Specialist and VDOE
Objective 2: By the end of the 2004-2005 school year, online nine weeks tests will be designed and implemented for grades K-12 in the four core subject areas (Reading and Language Arts, Math, Science, and Social Studies) based on data provided by the Department of Curriculum, Instruction, and Assessment.			
Strategy	**Cost**	**Completion Date**	**Responsibility**
1. Purchase an online assessment program.	$40,000	Spring 2007	Director of Research and Technology and Executive Director of Curriculum, Instruction, and Assessment
2. Provide training for the use of the online assessment program.	$2,000	Summer 2007	Executive Director of Curriculum, Instruction, and Assessment
3. Develop nine weeks tests in the four core subject areas in grades K-12 during a summer work session for grade group leaders.	$3,500	Summer 2007	Executive Director of Curriculum, Instruction, and Assessment and Instructional Technology Specialist
4. Field test the nine weeks tests during the 2004-2005 school year.	No Cost	Spring 2008	Executive Director of Curriculum, Instruction, and Assessment and Instructional Technology Specialist
5. Interface tests results with our Student Information System through the use of SIF (Student Interoperability Framework).	$2,500	Spring 2010	Network Analyst
Objective 3: By the end of the 2005-2006 school year, 100% of the national, state, and local assessment data will be disaggregated and used in curriculum and instructional decisions and planning based on the data from the Departments of Research and Technology and Curriculum, Instruction, and Assessment.			
Strategy	**Cost**	**Completion Date**	**Responsibility**
1. Purchase laptops or tablets for all school administrators.	$20,000	Summer 2005	Director of Research and Technology

Strategy	Cost	Completion Date	Responsibility
2. Provide training in district disaggregation software (SASI, Excel, and Access) to all administrators and instructional personnel.	No Cost	Continuous	Instructional Technology Specialist
3. Provide training on using test disaggregation information to make instructional decisions to all administrators.	No Cost	Continuous	Instructional Technology Specialist
4. Provide training on using test disaggregation information to make instructional decisions to instructional personnel at each school.	No Cost	Continuous	Instructional Technology Specialist
Objective 4: By the end of the 2009-2010 school year, an instructional technology rubric will be designed and implemented for 100% of the students in grades 5, 8, and 12 to ensure mastery of the Technology Standards of Learning based on data provided by the Department of Curriculum, Instruction, and Assessment.			
Strategy	**Cost**	**Completion Date**	**Responsibility**
1. Design a rubric for each benchmark year.	No Cost	Spring 2010	Instructional Technology Specialist
2. Design an online test for each benchmark year.	No Cost	Spring 2010	Instructional Technology Specialist
3. Create a new link on the Educational Technology Web site for the Technology Standards of Learning.	No Cost	Spring 2010	Instructional Technology Specialist
4. Provide training for all administrators and instructional personnel on using the rubrics.	No Cost	Spring 2010	Instructional Technology Specialist
Objective 5: By the end of the 2006-2007 school year, local curriculum resources and instructional strategies involving technology will have increased by 30% (10% each school year until 2007) based on response sheets and data provided by the Department of Curriculum, Instruction, and Assessment.			
Strategy	**Cost**	**Completion Date**	**Responsibility**
1. Purchase one copy of ISTE's *Connecting Curriculum and Technology* for each school.	$330	Summer 2004	Instructional Technology Specialist
2. Provide VCAT teams more research and links to information on instructional strategies involving technology.	No Cost	Summer 2004	Executive Director of Curriculum, Instruction, and Assessment and Instructional Technology Specialist
3. Revise curriculum resources and instructional strategies.	No Cost	Summers 2004-10	Executive Director of Curriculum, Instruction, and Assessment and Instructional Technology Specialist

Strategy	Cost	Completion Date	Responsibility
4. Meet with grade groups to review curriculum changes.	No Cost	Each Fall	Executive Director of Curriculum, Instruction, and Assessment and Instructional Technology Specialist
Objective 6: By the end of the 2006-2007 school year, online class offerings at Pulaski County High School will have increased to at least 5 based on class schedules provided by Pulaski County High School and data provided by Department of Curriculum, Instruction, and Assessment.			
Strategy	**Cost**	**Completion Date**	**Responsibility**
1. Provide training in online class design through the University of Virginia's Certificate in Technology Program.	$18,000	Spring 2006	Instructional Technology Specialist
2. Purchase a Blackboard license.	$10,000	Summer 2005	Director of Research and Technology
3. Provide training to all personnel using Blackboard to deliver an online class.	No Cost	Summer 2005	Instructional Technology Specialist
4. Purchase additional Nova Net licenses, and Rosetta Stone licenses.		Summer 2008	Executive Director of Curriculum, Instruction, and Assessment and Instructional Technology Specialist
5. Purchase or lease laptops for ninth graders. Continue purchase each year until all grades have laptops. This will require a continuous revenue source.	$600,000	Summer 2010	Director of Research and Technology
6. Develop student laptop policy manual.	No Cost	Summer 2010	Instructional Technology Specialist
7. Train Pulaski County High School ninth grader teachers in the use of the new laptops.	$2,000	Summer 2010	Director of Research and Technology
8. Train Pulaski County High School ninth grade students in the use of the new laptops.	$2,000	Spring 2011	Director of Research and Technology
Goal 2: In order to help all Pulaski County Public School students become life-long learners in a rapidly changing, global society, all Pulaski County Public School administrators and instructional personnel will appropriately use technology to improve instruction and learning.			
Objective 1: By the beginning of the 2005-2006 school year, develop an electronic evaluation instrument to be used with 100% of instructional staff based on data provided by the Department of Human Resources.			
Strategy	**Cost**	**Completion Date**	**Responsibility**
1. Purchase software to create electronic forms.	$400	Spring 2004	Director of Research and

			Technology
2. Develop the new evaluation instrument.	No Cost	Summer 2005	Director of Human Resources
3. Train all administrators in the use of the new form.	No Cost	Summer 2005	Director of Human Resources and Instructional Technology Specialist
4. Reevaluate the instrument and redesign as necessary	No Cost	Summers 2006-12	Director of Human Resources and Instructional Technology Specialist
Objective 2: By the beginning of the 2005-2006 school year, 100% of administrators will participate in a staff development offering on evaluating the instructional personnel's appropriate use of technology in the classroom based on evaluation sheets and sign-in sheets.			
Strategy	**Cost**	**Completion Date**	**Responsibility**
1. Create a check list on integrating technology into the curriculum for administrators to use as part of the teacher evaluation process.	No Cost	Summer 2005	Instructional Technology Specialist
2. Provide a staff develop opportunity for all administrators on evaluating the appropriate use of technology in the classroom.	$2,000	Summers 2006-12	Executive Director of Curriculum, Instruction, and Assessment and Instructional Technology Specialist
Objective 3: By the beginning of the 2005-2006 school year, 100% of new personnel will receive a technology information packet during their orientation session based on data provided by the Department of Human Resources.			
Strategy	**Cost**	**Completion Date**	**Responsibility**
1. Create a new link on the Educational Technology Web site for the Technology Competencies.	No Cost	Spring 2004	Instructional Technology Specialist
2. Create technology information packets.	$1,000	Summer 2005	Director of Research and Technology and Instructional Technology Specialist
3. Revise each summer	No Cost	Summers 2006-12	Director of Research and Technology and Instructional Technology Specialist
Objective 4: By the beginning of the 2009-2010 school year, standardize the data entry procedures in PowerSchool based on data provided by the Director of Research and Technology.			

Strategy	Cost	Completion Date	Responsibility
1. Train administrative staff and support staff in the process of correct data entry in PowerSchool	No Cost	Spring and Summer 2009	Director of Research and Technology and Instructional Technology Specialist
2. Designate specific personnel in each school to be responsible for entering and verifying correctness of PowerSchool data.	No Cost	Spring and Summer 2009	Director of Research and Technology and Instructional Technology Specialist
Strategy	**Cost**	**Completion Date**	**Responsibility**
3. Develop a monthly reporting system to cross check SASI information at the district level.	No Cost	Fall 2009	Director of Research and Technology and Instructional Technology Specialist
Objective 5: By the end of the 2009-10 school year, 100% of administrators and instructional personnel will participate in staff development offerings on using district software (PowerSchool, PowerTeacher, GroupWise, and SEAS) based on sign-in sheets and evaluations.			
Strategy	**Cost**	**Completion Date**	**Responsibility**
1. Develop a technology staff development needs survey and administer it to all administrators and instructional personnel.	No Cost	Continuous	Director of Research and Technology and Instructional Technology Specialist
2. Use survey results to aid in planning of staff development offerings for district software.	No Cost	Continuous	Director of Research and Technology and Instructional Technology Specialist
3. Develop a plan for staff development on district software.	No Cost	Continuous	Director of Research and Technology and Instructional Technology Specialist
Objective 6: By the end of the 2006-2007 school year, staff development offerings on integrating technology into the instructional program will increase by 30% (10% each year until 2007) based on sign-in sheets and evaluations.			
Strategy	**Cost**	**Completion Date**	**Responsibility**
1. Use technology staff development needs survey results to aid in planning of staff development offerings for integrating technology into the curriculum.	No Cost	Summer 2004	Director of Research and Technology and Instructional Technology

			Specialist
2. Develop a two-year plan for staff development on integrating technology into the curriculum.	No Cost	Summer 2005	Director of Research and Technology and Instructional Technology Specialist
3. Purchase online management system for staff development.	$10,000	Summer 2006	Executive Director of Curriculum, Instruction, and Assessment
4. Research and apply for grants to help fund staff development.	No Cost	Continuous	Grant Writer
5. Establish a process to submit Internet sites and lesson plans to Educational Technology Web site.	No Cost	Continuous	Instructional Technology Specialist
6. Add two additional instructional technology specialists.	$80,000	Summer 2010	Director of Research and Technology
Objective 7: By the end of the 2007-2008 school year, online staff development offerings will increase by 25% based on data provided by the Department of Curriculum, Instruction, and Assessment.			
Strategy	**Cost**	**Completion Date**	**Responsibility**
1. Develop in-house online staff development offerings.	No Cost	Spring 2007	Director of Research and Technology and Instructional Technology Specialist
2. Create partnerships with New River Community College, Virginia Tech, Radford University, and the University of Virginia to develop staff development offerings online.	$10,000	Spring 2007	Director of Research and Technology and Instructional Technology Specialist
3. Purchase online tutorial subscriptions.	$10,000	Spring 2008	Director of Research and Technology and Instructional Technology Specialist
Objective 8: By the end of the 2009-2010 school year, 100% of administrators and instructional personnel will have completed Phase II of the technology competencies based on data provided by the Department of Human Resources.			
Strategy	**Cost**	**Completion Date**	**Responsibility**
1. Create and implement Phase II and III of the Technology Competencies.	No Cost	Summer 2009	Director of Research and Technology and Instructional Technology Specialist
2. Purchase Sonic Foundry hardware and software to create training videos.	$25,000	Fall 2009	Director of Research and

			Technology
Goal 3: Develop new channels of communication and strengthen existing channels between schools, schools and central office, and schools and community.			
Objective 1: By the end of the 2006-2007 school year, Web pages will be created and updated for 100% of the schools and central office departments based on data provided by the Web manager for Pulaski County Public Schools.			
Strategy	**Cost**	**Completion Date**	**Responsibility**
1. Install and configure new Web server.	$15,000	Summer 2006	Network Engineer
2. Research and purchase integrated Website service to standardize school and teacher Websites.	$15,000	Summer 2006	Director of Research and Technology and Instructional Technology Specialist
3. Train all personnel in use of Website service.	$2,000	Summer 2006	Instructional Technology Specialist
4. Designate personnel at each school to be responsible for updating school site.	No Cost	Summer 2006	Director of Research and Technology and Instructional Technology Specialist
5. Establish yearly schedule for Web updates.	No Cost	Summers 2006-12	Director of Research and Technology and Instructional Technology Specialist
Objective 2: By the end of the 2009-2010 school year, 50% of forms used by Pulaski County Public Schools will be converted to electronic format based on data provided by the Department of Research and Technology.			
Strategy	**Cost**	**Completion Date**	**Responsibility**
1. Establish committees to revise forms and make them more user friendly for the electronic environment.	No Cost	Summer 2009	Director of Research and Technology and Instructional Technology Specialist
2. Provide training in the use of all new electronic forms.	No Cost	Spring 2010	Director of Research and Technology and Instructional Technology Specialist
Objective 3: By the end of the 2009-2010 school year, 80% of parents will access PowerSchool information based on survey results.			
Strategy	**Cost**	**Completion Date**	**Responsibility**
1. Promote and standardize the Parent Portal of PowerSchool.	No Cost	Summer 2009	Director of Research and Technology and

			Instructional Technology Specialist
2. Train all administrators and instructional personnel in the use of Parent Connect.	No Cost	Fall 2009	Director of Research and Technology and Instructional Technology Specialist
Objective 4: By the end of the 2009-2010 school year, 100% of instructional personnel will be able to access their gradebooks and school library holdings from home based on data provided by the Department of Research and Technology.			
Strategy	**Cost**	**Completion Date**	**Responsibility**
1. Purchase Destiny from Follett Software Company.	$70,000	Fall 2009	Executive Director of Curriculum, Instruction, and Assessment
2. Align library data as required by Web access component for library software.	No Cost	Spring 2010	Librarians
Objective 5: By the end of the 2009-2010 school year, video conferencing software and hardware will be in place to provide administrative and instructional video conferencing to 100% of schools based on data provided by the Department of Research and Technology.			
Strategy	**Cost**	**Completion Date**	**Responsibility**
1. Purchase hardware and software necessary for video conferencing.	$20,000	Spring 2010	Director of Research and Technology and Instructional Technology Specialist
2. Provide training for all users.	No Cost	Summer 2010	Instructional Technology Specialist
Objective 6: By the end of the 2009-2010 school year, 100% of student cumulative records will be converted from paper to electronic storage based on data provided by the Director of Research and Technology.			
Strategy	**Cost**	**Completion Date**	**Responsibility**
1. Purchase server for storage of all student cumulative records.	$10,000	Summer 2010	Network Engineer
2. Hire personnel for summer to create electronic images of student cumulative records.	$25,000	Summer 2010	Director of Research and Technology
Goal 4: Provide leadership and resources to promote and strengthen the technology infrastructure, including the identification and procurement of emerging technologies.			
Objective 1: By the end of the 2009-2010 school year, improve WAN communication speeds and stability by upgrading leased lines or replacing existing lines with new fiber lines.			

Strategy	Cost	Completion Date	Responsibility
1. Replace existing microwave connections between SBO and larger schools with new fiber connections or other high-speed connectivity	$100,000	Summer 2010	Director of Research and Technology, Telecom Switch Engineer
2. Install fiber connections to the remaining smaller schools or other high-speed connectivity	$100,000	Fall 2011	Director of Research and Technology, Telecom Switch Engineer
3. Integrate fiber lines belonging to school system with existing or new lines belonging to Pulaski County, Town of Pulaski, or other regional governments in order to share bandwidth and save costs.	$0	Summer 2011	Director of Research and Technology, Telecom Switch Engineer
4. Investigate options for sharing fiber voice/data lines with local governments and other educational institutions.	No Cost	Summer 2012	Director of Research and Technology
Objective 2: By the end of the 2009-2010 school year, improve network security, filtering, and disaster recovery plans.			
Strategy	**Cost**	**Completion Date**	**Responsibility**
1. Schedule regular network vulnerability assessments through the purchase of Retina Network Security Scanner or a similar application.	$9,900	Fall 2009	Telecom Switch Engineer, Network Administrator
2. Develop detailed disaster recovery plan covering all district technology and communication elements, coordinated with local governments. Contract with vendor to help develop a professional, detailed plan.	$1,500	Spring 2010	Director of Research and Technology, Telecom Switch Engineer, Network Engineer
3. Replace existing SBO server room by designing and assembling a new server room in centralized location that will better serve both telecommunication and data needs.	$20,000	Spring 2010	Telecom Switch Engineer, Network Engineer
4. Improve network filtering through training in Internet filtering, spam filtering, and antivirus applications.	$0	Spring 2008	Network Administrator
Objective 3. By the end of the 2009-2010 school year, upgrade power capabilities in our schools and other buildings (1) to support the installation of additional telecommunication and other electronic equipment; (2) to provide a more stable environment for the operation of current and future equipment; and (3) to allow for increased use of air-conditioning both to benefit students and staff, and also to provide improved climate control for electronic equipment.			
Strategy	**Cost**	**Completion Date**	**Responsibility**
1. Install new power circuit for Dublin Middle School server in PC Lab so that server cabinet can be moved into better climate-control environment.	$100	Spring 2004	Director of Research and Technology, Facilities Manager

Strategy	Cost	Completion Date	Responsibility
2. Increase power capacity to Dublin Middle School so that Library can be air-conditioned, improving climate control for computers and switches located there.	$100,000	Summer 2004	Director of Research and Technology, Facilities Manager
3. Increase power capacity to Pulaski Middle School so that Library can be air-conditioned, improving climate control for computers and switches located there.	$50,000	Summer 2004	Director of Research and Technology, Facilities Manager
4. Add air conditioning to both middle school libraries	$100,000	Summer 2010	Director of Research and Technology, Facilities Manager
5. Design new data center	No Cost	Summer 2008	Director of Research and Technology
6. Begin building new data center	$300,000	Winter 2009	Director of Research and Technology, Facilities Manager
7. Move into new data center and connect it to the WAN	$100,000	Winter 2010	Director of Research and Technology, Facilities Manager
Objective 4. By the end of the 2009-2010 school year, seek increased grant funding and cooperative arrangements with technology vendors.			
Strategy	**Cost**	**Completion Date**	**Responsibility**
1. Investigate opportunities with Dell, Gateway, HP, and other vendors for "model school" technology placements in each elementary school.	$0	Fall 2010	Director of Research and Technology, Network Administrator, Senior Technician
2. Request the creation of a new part-time position in the school system for a grant writer, to seek technology funding from private and public funds or utilize the services of the county government's grant writer.	$20,000 annually (part-time)	Fall 2010	Director of Research and Technology
Objective 5. By the end of the 2006-2007 school year, expand access to Internet resources for all educational staff.			
Strategy	**Cost**	**Completion Date**	**Responsibility**
1. Expand access to high speed wireless Internet throughout the county by continued expansion of the Pulaski County Wireless Authority and offer reduced rates to school personnel.	$45,000 annually	Winter 2009	Director of Research and Technology, Network Administrator

2. Make available limited number of school system computers with Internet access (NovaNet seats will be available at each school.) during after-school and evening hours at community center located in Pulaski Elementary School along with other Workforce Development Centers at five other schools.	$60,000 annually	Fall 2009	Director of Research and Technology, Network Administrator, Instructional Technology Specialist
Objective 6: By the end of the 2009-2010 school year, create and fund a replacement cycle for all technology equipment.			
Strategy	**Cost**	**Completion Date**	**Responsibility**
1. Create a plan for the replacement cycle.	No Cost	Fall 2009	Director of Research and Technology
2. Find local funding for the replacement cycle.	$900,000 annually	Winter 2009	Director of Finance

Current Status/Needs Assessment

C-completed, WIP-work in progress, NS-not started, NF-not funded

Goal	Objective	**Strategy**	Current Status
1	1	1. Purchase and install 12 new servers (1 at each school, 3 at the high school) to make the network more stable by distributing the processing load.	NS
1	1	2. Replace the computers in the English Pod with 60 new desktop computers. The computers in the lab are 5 years old and are too slow for many of our current applications.	WIP
1	1	3. Standardize computers in the business labs and CAD lab in the Vocational Department through the use of images to meet the system requirements of online testing	WIP
1	1	4. Purchase and install enough access points to support wireless networking.	WIP
1	1	5. Add 2 laptop carts to each middle school.	C
1	1	6. Purchase at least 1 laptop cart for each elementary school	WIP
1	1	7. Purchase and install a network printer for each cart.	WIP
1	1	8. Increase the number of full-time technicians to 7. There will be one full-time technician at Pulaski County High School, Dublin Middle School, Pulaski Middle School, Dublin Elementary, Critzer Elementary, Riverlawn Elementary, and Pulaski Elementary. Snowville Elementary will share one full-time technician.	NF
1	1	9. Designate specific personnel to be responsible for online testing tasks at each Pulaski County School and train new staff.	WIP
1	1	10. Provide training to all administrators and instructional personnel involved in online testing at all Pulaski County Schools and train new staff.	WIP
1	1	11. Increase bandwidth to all school to allow for expanded use of the Internet to support instruction.	C
1	1	12. Replace switches with PPOE switches and add additional switches to optimize network speeds inside the building.	WIP
1	1	13. Standardize computers through the use of images to meet the system requirements of online testing	WIP
1	1	14. Purchase and install access points to support wireless networking based on continuous testing of connectivity.	WIP
1	1	15. Provide training to all administrators and instructional personnel involved in online testing at all schools.	WIP
1	2	1. Purchase an online assessment program.	C
1	2	2. Provide training for the use of the online assessment program.	C
1	2	3. Develop nine weeks tests in the four core subject areas in grades K-12 during a summer work session for grade group leaders.	C
1	2	4. Field test the nine weeks tests during the 2004-2005 school year.	C
1	2	5. Interface tests results with our Student Information System through the use of SIF (Student Interoperability Framework).	NS
1	3	1. Purchase laptops or tablets for all school administrators.	C
1	3	2. Provide training in district disaggregation software (SASI, Excel, and Access) to all administrators and instructional personnel.	WIP
1	3	3. Provide training on using test disaggregation information to	WIP

		make instructional decisions to all administrators.	
1	3	4. Provide training on using test disaggregation information to make instructional decisions to instructional personnel at each school.	WIP
1	4	1. Design a rubric for each benchmark year.	WIP
1	4	2. Design an online test for each benchmark year.	WIP
1	4	3. Create a new link on the Educational Technology Web site for the Technology Standards of Learning.	WIP
1	4	4. Provide training for all administrators and instructional personnel on using the rubrics.	WIP
1	5	1. Purchase one copy of ISTE's *Connecting Curriculum and Technology* for each school.	C
1	5	2. Provide VCAT teams more research and links to information on instructional strategies involving technology.	C
1	5	3. Revise curriculum resources and instructional strategies.	WIP
1	5	4. Meet with grade groups to review curriculum changes.	WIP
1	6	1. Provide training in online class design through the University of Virginia's Certificate in Technology Program.	C
1	6	2. Purchase a Blackboard license.	C
1	6	3. Provide training to all personnel using Blackboard to deliver an online class.	C
1	6	4. Purchase additional Nova Net licenses, and Rosetta Stone licenses.	C
1	6	5. Purchase or lease laptops for ninth graders. Continue purchase each year until all grades have laptops. This will require a continuous revenue source.	NF
1	6	6. Develop student laptop policy manual.	NS
1	6	7. Train Pulaski County High School ninth grader teachers in the use of the new laptops.	NS
1	6	8. Train Pulaski County High School ninth grade students in the use of the new laptops.	NS
2	1	1. Purchase software to create electronic forms.	C
2	1	2. Develop the new evaluation instrument.	C
2	1	3. Train all administrators in the use of the new form.	C
2	1	4. Reevaluate the instrument and redesign as necessary	WIP
2	2	1. Create a check list on integrating technology into the curriculum for administrators to use as part of the teacher evaluation process.	C
2	2	2. Provide a staff develop opportunity for all administrators on evaluating the appropriate use of technology in the classroom.	WIP
2	3	1. Create a new link on the Educational Technology Web site for the Technology Competencies.	C
2	3	2. Create technology information packets.	C
2	3	3. Revise each summer	WIP
2	4	1. Train administrative staff and support staff in the process of correct data entry in PowerSchool	WIP
2	4	2. Designate specific personnel in each school to be responsible for entering and verifying correctness of PowerSchool data.	WIP
2	4	3. Develop a monthly reporting system to cross check SASI information at the district level.	WIP
2	5	1. Develop a technology staff development needs survey and administer it to all administrators and instructional personnel.	WIP
2	5	2. Use survey results to aid in planning of staff development offerings for district software.	WIP
2	5	3. Develop a plan for staff development on district software.	WIP

2	6	1. Use technology staff development needs survey results to aid in planning of staff development offerings for integrating technology into the curriculum.	C
2	6	2. Develop a two-year plan for staff development on integrating technology into the curriculum.	C
2	6	3. Purchase online management system for staff development.	C
2	6	4. Research and apply for grants to help fund staff development.	WIP
2	6	5. Establish a process to submit Internet sites and lesson plans to Educational Technology Web site.	WIP
2	6	6. Add two additional instructional technology specialists.	NF
2	7	1. Develop in-house online staff development offerings.	C
2	7	2. Create partnerships with New River Community College, Virginia Tech, Radford University, and the University of Virginia to develop staff development offerings online.	C
2	7	3. Purchase online tutorial subscriptions.	C
2	8	1. Create and implement Phase II and III of the Technology Competencies.	WIP
2	8	2. Purchase Sonic Foundry hardware and software to create training videos.	WIP
3	1	1. Install and configure new Web server.	C
3	1	2. Research and purchase integrated Website service to standardize school and teacher Websites.	C
3	1	3. Train all personnel in use of Website service.	C
3	1	4. Designate personnel at each school to be responsible for updating school site.	C
3	1	5. Establish yearly schedule for Web updates.	WIP
3	2	1. Establish committees to revise forms and make them more user friendly for the electronic environment.	NS
3	2	2. Provide training in the use of all new electronic forms.	NS
3	3	1. Promote and standardize the Parent Portal of PowerSchool.	WIP
3	3	2. Train all administrators and instructional personnel in the use of Parent Connect.	WIP
3	4	1. Purchase Destiny from Follett Software Company.	NF
3	4	2. Align library data as required by Web access component for library software.	NF
3	5	1. Purchase hardware and software necessary for video conferencing.	NF
3	5	2. Provide training for all users.	NS
3	6	1. Purchase server for storage of all student cumulative records.	NS
3	6	2. Hire personnel for summer to create electronic images of student cumulative records.	NS
4	1	1. Replace existing microwave connections between SBO and larger schools with new fiber connections or other high-speed connectivity	NS
4	1	2. Install fiber connections to the remaining smaller schools or other high-speed connectivity	NS
4	1	3. Integrate fiber lines belonging to school system with existing or new lines belonging to Pulaski County, Town of Pulaski, or other regional governments in order to share bandwidth and save costs.	NS
4	1	4. Investigate options for sharing fiber voice/data lines with local governments and other educational institutions.	WIP
4	2	1. Schedule regular network vulnerability assessments through the purchase of Retina Network Security Scanner or a similar application.	NS

4	2	2. Develop detailed disaster recovery plan covering all district technology and communication elements, coordinated with local governments. Contract with vendor to help develop a professional, detailed plan.	NS
4	2	3. Replace existing SBO server room by designing and assembling a new server room in centralized location that will better serve both telecommunication and data needs.	NS
4	2	4. Improve network filtering through training in Internet filtering, spam filtering, and antivirus applications.	C
4	3	1. Install new power circuit for Dublin Middle School server in PC Lab so that server cabinet can be moved into better climate-control environment.	C
4	3	2. Increase power capacity to Dublin Middle School so that Library can be air-conditioned, improving climate control for computers and switches located there.	C
4	3	3. Increase power capacity to Pulaski Middle School so that Library can be air-conditioned, improving climate control for computers and switches located there.	C
4	3	4. Add air conditioning to both middle school libraries	NF
4	3	5. Design new data center	C
4	3	6. Begin building new data center	WIP
4	3	7. Move into new data center and connect it to the WAN	NS
4	4	1. Investigate opportunities with Dell, Gateway, HP, and other vendors for “model school” technology placements in each elementary school.	WIP
4	4	2. Request the creation of a new part-time position in the school system for a grant writer, to seek technology funding from private and public funds or utilize the services of the county government’s grant writer.	WIP
4	5	1. Expand access to high speed wireless Internet throughout the county by continued expansion of the Pulaski County Wireless Authority and offer reduced rates to school personnel.	WIP
4	5	2. Make available limited number of school system computers with Internet access (NovaNet seats will be available at each school.) during after-school and evening hours at community center located in Pulaski Elementary School along with other Workforce Development Centers at five other schools.	WIP
4	6	1. Create a plan for the replacement cycle.	WIP
4	6	2. Find local funding for the replacement cycle.	WIP

Duration/Implementation Responsibility

This plan will cover a eight-year period.

2004-2012

Completion Date	Goal	Objective	Strategy	Responsibility
Summer 2004	1	5	1. Purchase one copy of ISTE's *Connecting Curriculum and Technology* for each school.	Instructional Technology Specialist
Summer 2004	1	5	2. Provide VCAT teams more research and links to information on instructional strategies involving technology.	Executive Director of Curriculum, Instruction, and Assessment and Instructional Technology Specialist
Summers 2004-10	1	5	3. Revise curriculum resources and instructional strategies.	Executive Director of Curriculum, Instruction, and Assessment and Instructional Technology Specialist
Spring 2004	2	1	1. Purchase software to create electronic forms.	Director of Research and Technology
Summer 2004	2	6	1. Use technology staff development needs survey results to aid in planning of staff development offerings for integrating technology into the curriculum.	Director of Research and Technology and Instructional Technology Specialist
Spring 2004	4	3	1. Install new power circuit for Dublin Middle School server in PC Lab so that server cabinet can be moved into better climate-control environment.	Director of Research and Technology, Facilities Manager
Summer 2004	4	3	2. Increase power capacity to Dublin Middle School so that Library can be air-conditioned, improving climate control for computers and switches located there.	Director of Research and Technology, Facilities Manager
Summer 2004	4	3	3. Increase power capacity to Pulaski Middle School so that Library can be air-conditioned, improving climate control for computers and switches located there.	Director of Research and Technology, Facilities Manager
Summers 2005-10	1	1	12. Replace switches with PPOE switches and add additional switches to optimize network speeds inside the building.	Telecom Switch Engineer
Summers 2005-10	1	1	13. Standardize computers through the use of images to meet the system requirements of online testing	Technicians
Summer 2005-10	1	1	14. Purchase and install access points to support wireless networking based on continuous testing of connectivity.	Telecom Switch Engineer
Summer 2005	1	3	1. Purchase laptops or tablets for all school administrators.	Director of Research and Technology
Summer 2005	1	6	2. Purchase a Blackboard license.	Director of Research and Technology
Summer 2005	1	6	3. Provide training to all personnel using Blackboard to deliver an online class.	Instructional Technology Specialist
Summer 2005	2	1	2. Develop the new evaluation instrument.	Director of Human Resources
Summer 2005	2	1	3. Train all administrators in the use of the new form.	Director of Human Resources and

				Instructional Technology Specialist
Summer 2005	2	2	1. Create a check list on integrating technology into the curriculum for administrators to use as part of the teacher evaluation process.	Instructional Technology Specialist
Summer 2005	2	3	2. Create technology information packets.	Director of Research and Technology and Instructional Technology Specialist
Summer 2005	2	6	2. Develop a two-year plan for staff development on integrating technology into the curriculum.	Director of Research and Technology and Instructional Technology Specialist
Summers 2006-09	1	1	4. Purchase and install enough access points to support wireless networking.	Telecom Switch Engineer
Summers 2006-08	1	1	5. Add 2 laptop carts to each middle school.	Director of Research and Technology
Spring 2006	1	6	1. Provide training in online class design through the University of Virginia's Certificate in Technology Program.	Instructional Technology Specialist
Summers 2006-12	2	1	4. Reevaluate the instrument and redesign as necessary	Director of Human Resources and Instructional Technology Specialist
Summers 2006-12	2	2	2. Provide a staff develop opportunity for all administrators on evaluating the appropriate use of technology in the classroom.	Executive Director of Curriculum, Instruction, and Assessment and Instructional Technology Specialist
Summers 2006-12	2	3	3. Revise each summer	Director of Research and Technology and Instructional Technology Specialist
Summer 2006	2	6	3. Purchase online management system for staff development.	Executive Director of Curriculum, Instruction, and Assessment
Summer 2006	3	1	2. Research and purchase integrated Website service to standardize school and teacher Websites.	Director of Research and Technology and Instructional Technology Specialist
Summer 2006	3	1	3. Train all personnel in use of Website service.	Instructional Technology Specialist
Summer 2006	3	1	4. Designate personnel at each school to be responsible for updating school site.	Director of Research and Technology and Instructional Technology Specialist
Summers 2006-12	3	1	5. Establish yearly schedule for Web updates.	Director of Research and Technology and Instructional Technology Specialist
Summers 2007-09	1	1	7. Purchase and install a network printer for each cart.	Technicians
Spring 2007	1	1	1. Purchase an online assessment program.	Director of Research and Technology and

				Executive Director of Curriculum, Instruction, and Assessment
Summer 2007	1	2	2. Provide training for the use of the online assessment program.	Executive Director of Curriculum, Instruction, and Assessment
Summer 2007	1	2	3. Develop nine weeks tests in the four core subject areas in grades K-12 during a summer work session for grade group leaders.	Executive Director of Curriculum, Instruction, and Assessment and Instructional Technology Specialist
Spring 2007	2	7	1. Develop in-house online staff development offerings.	Director of Research and Technology and Instructional Technology Specialist
Spring 2007	2	7	2. Create partnerships with New River Community College, Virginia Tech, Radford University, and the University of Virginia to develop staff development offerings online.	Director of Research and Technology and Instructional Technology Specialist
Summer 2008	1	1	11. Increase bandwidth to all school to allow for expanded use of the Internet to support instruction.	Director of Research and Technology
Spring 2008	1	2	4. Field test the nine weeks tests during the 2004-2005 school year.	Executive Director of Curriculum, Instruction, and Assessment and Instructional Technology Specialist
Summer 2008	1	6	4. Purchase additional Nova Net licenses, and Rosetta Stone licenses.	Executive Director of Curriculum, Instruction, and Assessment and Instructional Technology Specialist
Spring 2008	2	7	3. Purchase online tutorial subscriptions.	Director of Research and Technology and Instructional Technology Specialist
Spring 2008	4	2	4. Improve network filtering through training in Internet filtering, spam filtering, and antivirus applications.	Network Administrator
Summer 2009	1	1	2. Replace the computers in the English Pod with 60 new desktop computers. The computers in the lab are 5 years old and are too slow for many of our current applications.	Technicians
Spring 2009	1	1	3. Standardize computers in the business labs and CAD lab in the Vocational Department through the use of images to meet the system requirements of online testing	Technicians
Summer 2009	1	1	9. Designate specific personnel to be responsible for online testing tasks at each Pulaski County School and train new staff.	Instructional Technology Specialist
Summer 2009	1	1	10. Provide training to all administrators and instructional personnel involved in online testing at all Pulaski County Schools and train new staff.	Instructional Technology Specialist and VDOE
Spring and Summer	2	4	1. Train administrative staff and support staff in the process of correct data entry in PowerSchool	Director of Research and Technology and

2009				Instructional Technology Specialist
Spring and Summer 2009	2	4	2. Designate specific personnel in each school to be responsible for entering and verifying correctness of PowerSchool data.	Director of Research and Technology and Instructional Technology Specialist
Summer 2009	2	8	1. Create and implement Phase II and III of the Technology Competencies.	Director of Research and Technology and Instructional Technology Specialist
Summer 2009	3	2	1. Establish committees to revise forms and make them more user friendly for the electronic environment.	Director of Research and Technology and Instructional Technology Specialist
Summer 2009	3	3	1. Promote and standardize the Parent Portal of PowerSchool.	Director of Research and Technology and Instructional Technology Specialist
Fall 2009	2	4	3. Develop a monthly reporting system to cross check SASI information at the district level.	Director of Research and Technology and Instructional Technology Specialist
Fall 2009	2	8	2. Purchase Sonic Foundry hardware and software to create training videos.	Director of Research and Technology
Fall 2009	3	3	2. Train all administrators and instructional personnel in the use of Parent Connect.	Director of Research and Technology and Instructional Technology Specialist
Fall 2009	3	3	2. Train all administrators and instructional personnel in the use of Parent Connect.	Director of Research and Technology and Instructional Technology Specialist
Fall 2009	3	4	1. Purchase Destiny from Follett Software Company.	Executive Director of Curriculum, Instruction, and Assessment
Fall 2009	4	2	1. Schedule regular network vulnerability assessments through the purchase of Retina Network Security Scanner or a similar application.	Telecom Switch Engineer, Network Administrator
Fall 2009	4	5	2. Make available limited number of school system computers with Internet access (NovaNet seats will be available at each school.) during after-school and evening hours at community center located in Pulaski Elementary School along with other Workforce Development Centers at five other schools.	Director of Research and Technology, Network Administrator, Instructional Technology Specialist
Fall 2009	4	6	1. Create a plan for the replacement cycle.	Director of Research and Technology
Winter 2009	4	3	6. Begin building new data center	Director of Research and Technology, Facilities Manager
Winter 2009	4	5	1. Expand access to high speed wireless Internet throughout the county by continued expansion of the Pulaski County Wireless Authority and offer reduced rates to school personnel.	Director of Research and Technology, Network Administrator

Winter 2009	4	6	2. Find local funding for the replacement cycle.	Director of Finance
Summer 2010	1	1	1. Purchase and install 12 new servers (1 at each school, 3 at the high school) to make the network more stable by distributing the processing load.	Network Engineer
Spring 2010	1	1	8. Increase the number of full-time technicians to 7. There will be one full-time technician at Pulaski County High School, Dublin Middle School, Pulaski Middle School, Dublin Elementary, Critzer Elementary, Riverlawn Elementary, and Pulaski Elementary. Snowville Elementary will share one full-time technician.	Director of Research and Technology
Spring 2010	1	2	5. Interface tests results with our Student Information System through the use of SIF (Student Interoperability Framework).	Network Analyst
Spring 2010	1	4	1. Design a rubric for each benchmark year.	Instructional Technology Specialist
Spring 2010	1	4	2. Design an online test for each benchmark year.	Instructional Technology Specialist
Spring 2010	1	4	3. Create a new link on the Educational Technology Web site for the Technology Standards of Learning.	Instructional Technology Specialist
Spring 2010	1	4	4. Provide training for all administrators and instructional personnel on using the rubrics.	Instructional Technology Specialist
Spring 2010	3	2	2. Provide training in the use of all new electronic forms.	Director of Research and Technology and Instructional Technology Specialist
Spring 2010	3	4	2. Align library data as required by Web access component for library software.	Librarians
Spring 2010	3	5	1. Purchase hardware and software necessary for video conferencing.	Director of Research and Technology and Instructional Technology Specialist
Spring 2010	4	2	2. Develop detailed disaster recovery plan covering all district technology and communication elements, coordinated with local governments. Contract with vendor to help develop a professional, detailed plan.	Director of Research and Technology, Telecom Switch Engineer, Network Engineer
Spring 2010	4	2	3. Replace existing SBO server room by designing and assembling a new server room in centralized location that will better serve both telecommunication and data needs.	Telecom Switch Engineer, Network Engineer
Summer 2010	1	6	5. Purchase or lease laptops for ninth graders. Continue purchase each year until all grades have laptops. This will require a continuous revenue source.	Director of Research and Technology
Summer 2010	1	6	6. Develop student laptop policy manual.	Instructional Technology Specialist
Summer 2010	1	6	7. Train Pulaski County High School ninth grader teachers in the use of the new laptops.	Director of Research and Technology
Summer 2010	2	6	6. Add two additional instructional technology specialists.	Director of Research and Technology
Summer 2010	3	5	2. Provide training for all users.	Instructional Technology Specialist

Summer 2010	3	6	1. Purchase server for storage of all student cumulative records.	Network Engineer
Summer 2010	3	6	2. Hire personnel for summer to create electronic images of student cumulative records.	Director of Research and Technology
Summer 2010	4	3	4. Add air conditioning to both middle school libraries	Director of Research and Technology, Facilities Manager
Summer 2010	4	1	1. Replace existing microwave connections between SBO and larger schools with new fiber connections or other high-speed connectivity	Director of Research and Technology, Telecom Switch Engineer
Fall 2010	4	4	1. Investigate opportunities with Dell, Gateway, HP, and other vendors for "model school" technology placements in each elementary school.	Director of Research and Technology, Network Administrator, Senior Technician
Fall 2010	4	4	2. Request the creation of a new part-time position in the school system for a grant writer, to seek technology funding from private and public funds or utilize the services of the county government's grant writer.	Director of Research and Technology
Winter 2010	4	3	7. Move into new data center and connect it to the WAN	Director of Research and Technology, Facilities Manager
Spring 2011	1	6	8. Train Pulaski County High School ninth grade students in the use of the new laptops.	Director of Research and Technology
Summer 2011	4	1	3. Integrate fiber lines belonging to school system with existing or new lines belonging to Pulaski County, Town of Pulaski, or other regional governments in order to share bandwidth and save costs.	Director of Research and Technology, Telecom Switch Engineer
Fall 2011	4	1	2. Install fiber connections to the remaining smaller schools or other high-speed connectivity	Director of Research and Technology, Telecom Switch Engineer
Summer 2012	4	1	4. Investigate options for sharing fiber voice/data lines with local governments and other educational institutions.	Director of Research and Technology
Continuous	1	1	15. Provide training to all administrators and instructional personnel involved in online testing at all schools.	Instructional Technology Specialist and VDOE
Continuous	1	3	2. Provide training in district disaggregation software (SASI, Excel, and Access) to all administrators and instructional personnel.	Instructional Technology Specialist
Continuous	1	3	3. Provide training on using test disaggregation information to make instructional decisions to all administrators.	Instructional Technology Specialist
Continuous	1	3	4. Provide training on using test disaggregation information to make instructional decisions to instructional personnel at each school.	Instructional Technology Specialist
Continuous	2	5	1. Develop a technology staff development needs survey and administer it to all administrators and instructional personnel.	Director of Research and Technology and Instructional Technology Specialist
Continuous	2	5	2. Use survey results to aid in planning of staff development offerings for district software.	Director of Research and Technology and

				Instructional Technology Specialist
Continuous	2	5	3. Develop a plan for staff development on district software.	Director of Research and Technology and Instructional Technology Specialist
Continuous	2	6	4. Research and apply for grants to help fund staff development.	Grant Writer
Continuous	2	6	5. Establish a process to submit Internet sites and lesson plans to Educational Technology Web site.	Instructional Technology Specialist

Integration

As stated earlier in the Introduction, technology will play an integral part in helping educators prepare our students for the 21st Century world of work. But, technology must be integrated seamlessly into the curriculum. Research has proven that it will not work as a separate part of the education process. Furthermore, administrators and central office personnel must embrace technology themselves and model effective usages if instructional personnel and students are expected to fully integrate technology into the learning environment of our schools.

Equity of hardware and software has been one of the major obstacles to integrating technology into our schools. However in the last three to four years, local funding, grant funding, and Web-based testing funding have been used to help in this area. Our high school is participating fully in the online testing initiative. The student to computer ratio is 5:1. We are in the process of getting our two middle schools ready for online testing. We face major obstacles due to a lack of classroom space for labs and major power and structural issues due to the age of the buildings. Space issues can be overcome by looking to laptops or tablets, but the power issue still looms. We used Title VI funds during the 2002-2003 school year to put labs in 6 of our elementary schools so that each school would have at least one lab. But, technology initiatives cannot depend on grant funding. We were notified at the beginning of the 2003-2004 school year that our Title VI funds would be eliminated. In one year, we went from $103,000 to $0. Most of our elementary schools face the same challenges as our two middle schools: space, power, and wiring. Our Superintendent and School Board have established a long-range Capital Improvement Plan. The first project, a new elementary school, is scheduled to be completed and opened for the 2004-2005 school year. Much thought and consideration has gone into the technology that will be utilized in the new elementary school. We are working closely with Radford University and other organizations to make sure that the technology plan for the new school meets the needs of the 21st Century Information and Communication Age. Due to the exponential changes occurring in the technology industry, technology integration will only be as successful as our ability to find and provide a consistent source of funding.

Successful technology integration must begin with administrators and central office personnel. They are the instructional leaders. All administrators have received technology training. However, admittedly there have been two major flaws in our past training initiatives. The first problem frequently occurred when administrators and central office personnel went back to their schools or offices, and the hardware and software did not work. If technology training is to be successful, the participants must be able to try new skills immediately. The technology department is working very hard to correct this flaw, and there have been major improvements in this area in the last two years. The second major flaw occurred when training centered solely on learning a technology skill without showing an administrative or instructional connection. All technology training is now being planned based on specific administrative and instructional needs. All administrators are participating in the VITAL (Virginia Initiative for Technology and Administrative Leadership) program in connection with Virginia

Tech. All administrators received training on using technology to aid in the test disaggregation process. Administrators are encouraged to attend technology conferences and workshops, and Title II A funds are used to help fund this. Aspiring administrators in Pulaski County are eligible to be a part of the Leadership Academy which provides mentoring and opportunities for learning about administrative issues. Technology integration is a part of the academy curriculum. Our administrators need more training in evaluating effective technology instructional strategies. Our technology plan acknowledges this and incorporates the design of an evaluation instrument and training on the use of the instrument into our goals, objectives, and strategies.

If our students are to meet the challenges of the 21st Century Information and Communication Age, we must have an instructional staff that is effectively integrating technology instructional strategies. As with the administrators, we have had the same two flaws: hardware/software failures and training without an instructional connection. We have admitted these mistakes and are working hard to overcome them. However with our instructional staff, we face the two additional problems of time and equity. SOLs, assessments, discipline issues, remediation, and instructional planning are just a few of the issues that face teachers on a daily basis. Our instructional personnel are being asked to do more right now than ever before in the same amount of time. They are being asked to attend training sessions, meetings, etc. both before and after school. Technology training is not going to be effective if personnel are required to attend after working a full day. Our technology plan takes this into consideration. During the next three years, we will be looking to step outside of the box with our training. Teachers need to be able to access training at all times not just for an hour after school. We need to provide access to distance learning, online training, and video conferencing to just mention a few options. We are working with New River Community College, Virginia Tech, Radford University, and the University of Virginia to provide training in the effective use of technology instructional strategies. We are also aware that Instructional Technology Specialists need to be available at each school to help teachers and administrators make the transition to effectively integrating technology into the instructional process. This initiative is part of our technology plan, but hiring new personnel is one the areas hardest hit by the budget problems faced by localities like Pulaski County. Hardware and software equity issues are improving but will require a constant source of funding that is just not available right now due to the economic hardships being faced by our community.

We have helped our teachers meet the state's Technology Standards for Instructional Personnel through the TILT (Technology Integration Lead Teacher) program. Each school had a TILT that worked with teachers on passing our local technology competency test. The program had one major flaw in that the TILT was not given release time to work with teachers. This would have required additional funding that just was not available. We paid for this program through Title V funds last year, but it was cut this year when our federal funding was cut due to our declining enrollment. Our technology plan addresses the issue of making sure that new personnel are aware of the Technology Standards for Instructional Personnel. The Educational Technology Website

includes a section on the local technology competency test complete with links to tutorials designed specifically to help with skills on the test.

Pulaski County Public Schools work very hard to provide a safe environment for all of our students. This extends to computer use in the classroom and in our computer labs. We have all personnel and students sign an acceptable use form. This information is stored in the student information database at each school. Teachers discuss the policy with their students. Our policy manual contains the procedure for publishing student photos and work on the Internet. Issues or concerns are discussed during monthly Leadership Council meetings. Media specialists discuss copyright concerns during monthly meetings and work with both teachers and students at their schools to make sure that copyright laws are observed. The Network Administrator continually monitors Internet use and upgrades Internet security.

Our students face more challenges and changes than any generation before them. The 21st Century Information and Communication Age will require them to possess skills that enable them to truly be life-long learners. They must be able to constantly reinvent themselves in order to keep up with the exponential changes in the job market. Technology will play a huge role in this process. Students in Pulaski County Public Schools are using technology, but we must work towards making sure that all students are using technology not just students lucky enough to be in a classroom with a teacher that effectively uses technology. First, we must address the equity issue. All of our schools and classrooms must have the software and hardware necessary for technology integration. Again, this is dependent upon consistent funding. Secondly, our curriculum must outline the technology literacy skills expected of our students at each grade level. It must also be a resource for teachers wanting to integrate technology into their lessons. In the goals, objectives, and strategies section of our technology plan, we have strived to do this. Our curriculum is undergoing a rigorous revision that includes technology integration instructional strategies. One of our objectives is to offer more online learning opportunities. During the coming year to meet the goals, objectives, and strategies of the technology plan, rubrics, checklists, and assessments will be developed to ensure that all of our students are meeting the Computer/Technology Standards of Learning. Furthermore, central office personnel, administrators, and our grade group teams are looking at ways that technology can be used to help in the remediation process. Finally, an Assistive Technology group has been formed to help meet the unique learning needs of our special education students. This group is working closely with Virginia Tech's Training and Technical Assistance Center.

Professional Development and Support Programs

Change seems to be the underlying theme of this technology plan. According to Bruce Joyce and Beverly Showers in *Student Achievement Through Staff Development*, "The field of staff development has trouble changing (an irony, because change is its business); and yet it is poised to change as never before because of increases in the knowledge base and pressures from within the field and outside it" (ix). The driving force behind the pressure to change is the No Child Left Behind Act with its emphasis on teacher quality and staff development. The Departments of Technology and Curriculum, Instruction, and Assessment are utilizing divisional data to create staff development opportunities that will not only increase student learning but also the learning of administrators and instructional personnel.

As stated in the Introduction, staff development is essential if technology is to play a vital part in our curriculum and teaching. However, we can no longer rely on the one time, one hour staff development offerings that don't allow teachers and administrators to use the tools in a meaningful way. Administrators planning technology staff development opportunities must overcome three major obstacles if the opportunities are to be effective. The first major obstacle is time. If technology staff development opportunities are to improve student learning, teachers must have time to study, implement, and evaluate. With more demands on their time than ever before, teachers and administrators must have access to staff development opportunities 24 hours a day, seven days a week (i.e. satellite broadcasts, distance learning, video training libraries, and video conferencing capabilities). This means that all administrators and instructional personnel must be able to access these new technologies from home. The second major obstacle is making sure that a solid infrastructure is in place. Nothing kills the enthusiasm created in a technology staff development offering quicker than returning to a classroom that doesn't have the equipment or software needed or one in which the equipment won't support the new learning tool. The final obstacle to overcome is to be sure that technology staff development opportunities are aligned to the curriculum to make them meaningful. Learning skills out of an instructional context has proven to be a pointless endeavor because there is little or no retention or integration into the instructional program.

Pulaski County Public Schools are working hard to overcome all of these obstacles. One of this technology plan's major goals is to provide a solid infrastructure for all schools and to address the equity issue at all of our schools. The Technology Department meets weekly to discuss ways to effectively and efficiently meet this goal. The Director of Research and Technology is constantly meeting with local business leaders to address the issues of connectivity and bandwidth. You look to your past to plan for your future. We admit that our past technology staff development opportunities have not always been tied to the curriculum. We have worked hard to correct this problem. We took advantage of the VDOE's *MarcoPolo Internet Content for the Classroom* train-the-trainers training program. All of our teachers have received training on using this valuable tool. As a part of the Blue Ridge West Consortium, we have teachers at each school participating in the NTTI (National Teacher Training Institute) program. Training on the use of

Unitedstreaming videos has been done at each of our schools. We have developed a close working relationship with the local community college and offer classes each semester geared towards our curriculum and needs. The special thing about these course offerings is that they are taught by our own personnel that are familiar with our procedures and needs. In addition, we have made use of the Education Innovations Lab at Radford University and are working closely with Virginia Tech and the VITAL (Virginia Initiative for Technology and Administrative Leadership) program. The Instructional Technology Specialist is a member of the new Assistive Technology Group that is working to offer assistive technology support to all instructional personnel. The recent purchase of a web-based survey instrument and the conscious effort to utilize data-driven decision making are further evidence that Pulaski County Public Schools are striving to ensure that not just technology staff development offerings but all staff development offerings meet our instructional needs. Differentiated instruction is a major goal of our instructional program. Our instructional personnel work hard to meet the learning needs of all of our children. Our technology plan takes this one step further. By implementing Phase II and Phase III of the technology competencies, we hope to meet the technology learning needs of all of our instructional personnel not just the beginning technology user. We take pride in our accomplishments but do not rest on our laurels. To address the time issue, we must begin thinking outside of the box. We must provide our administrators and instructional personnel with opportunities that can be accessed 24 hours a day. Distance learning, satellite broadcasts, video training libraries, and online class offerings are just a few of the emerging technologies that we must explore and embrace.

There is a fourth obstacle that is common to all divisions that offer technology staff development, and that major obstacle is funding. Technology requires a consistent reliable source of funding. Divisions can rely on federal, state, and local sources to pay for staff development, but the hardware and software necessary to make it effective cannot. Bandwidth, power issues, wiring issues, and replacement cycles require large amounts of capital expenditures. School divisions are struggling to attract highly qualified teachers. More and more resources have to be spent on keeping salaries competitive, meeting rising insurance costs, and covering rising VSRS contributions. Federal and state grant funding are not consistent and reliable. We make careful use of E-rate and Web-based Testing Initiative funds, but they cannot be used to help us solve all of our problems. One of our strategies is to hire a full-time grant writer to help us network and find new connections in the business world. We must begin to think outside of the box for technology funding.

Connectivity

The connectivity needs of the Pulaski County Public Schools continue to change from year to year. Our twenty-first century educational and administrative needs require much more from our infrastructure and our connectivity than were required just five or ten years ago. What is becoming increasingly clear is that both administrators and teaching staff need AAA: Anytime Anywhere Access. The possibility of achieving AAA certainly involves substantial improvements in both infrastructure and the technological fluency of users, but connectivity will be the key element that ties our network and application infrastructure to those users, wherever they may be geographically located at any given time.

In the last ten years, we have faced the challenge of moving from dialup Internet access, slow ISDN lines, or unstable, weather-dependent spread-spectrum wireless links to leased T1 lines between all schools. In the last two years, we have increased our Internet bandwidth more than tenfold through sharing of larger leased lines with other educational institutions in the New River Valley. And we are currently planning for new fiber connections between our buildings, while we also explore creative ways to share our bandwidth and other resources with local governments and other educational institutions in our county.

After considering what other districts have done and are currently doing, and after study of recommendations from the Virginia Department of Education, Pulaski County Public Schools have developed focused, specific plans to meet our connectivity needs. We recognize that those plans must retain flexibility in the face of continuing change both in the technologies we implement and in the educational and administrative needs of the district.

We believe our plans give us not a fixed blueprint or a rigid contract, but instead a pathway that guides us toward improved communication, toward the Anytime Anywhere Access for staff members that we need. And if we look even further down that pathway than the three years covered by this plan, we can see that Anytime Anywhere Access should probably include students as well as staff. Everything we build on in the next three years that improves our connectivity will be leading toward further improvements that will tie our staff to our students, and also our students to other students, increasing learning resources for all of them.

Currently, the most crucial element holding us back from the type of connectivity we need is the limited bandwidth in the wide-area network between our schools, and between those schools and the two School Board buildings. Data and voice traffic travels over links consisting of either two T1 lines or a single T1 line. By monitoring bandwidth usage, we can see sustained peaks in that traffic at points in each day, and during those peaks network bottlenecks sometimes develop, affecting applications that are transmitting data between schools and the School Board buildings. In order to alleviate those data slowdowns and also to allow for increased Internet and media usage in the future, we

plan to have fiber connections in place between the larger schools and the School Board buildings during the summer of 2010. In the interim we plan to install microwave links between our schools during the summer of 2008. As a community stakeholder, the local cable television provider has helped in making this possible by agreeing to allow us to use existing fiber for much of the area to be covered.

After those fiber connections are in place, tested, and in use, we plan to enhance connectivity to the smaller schools also, either by procuring additional fiber or by adding a second T1 line to schools that are currently using a single T1. We plan to complete that project during the 2005-2006 school year.

Also important is the limited bandwidth available inside some of our local-area networks. We currently have in place 100 MB to all desktops in the high school and both middle schools, but our eight elementary schools still have mostly 10 MB LANs. We are currently (in the spring of 2004) assessing equipment needs and preparing to order switches and other equipment that will raise those LAN speeds up to 100 MB throughout those schools. (This process is made somewhat easier by the fact that three of our older elementary schools will close in fall 2004 when the new Pulaski Elementary School is completed.) By November 2004, all of our elementary school LANs will operate at 100 MB to all desktops.

In another initiative that seeks to expand electronic access to learning resources and other information, we plan to underwrite the cost of Internet access for all employees beginning in fall 2004, working through a local ISP. Most of our curriculum and instructional resources are rapidly becoming web-based. Our instructional staff can be trained at school, but in-depth familiarity with instructional resources requires access from home and study after hours. Also, teachers need to have their own web pages and be able to answer student email on weekends. While many of our teachers have a home internet connection, some do not. Our school system cannot move forward with online classes, teacher web sites, student laptops, and full use of web-based resources for instruction until all teachers become comfortable and proficient in the use of Internet resources. We believe that home connections are necessary to support their efforts.

During the 2004-2005 school year, we plan to improve our network security and filtering, and to prepare a new disaster recovery plan. As one way to increase network security, we will begin scheduling regular network vulnerability assessments through the purchase of Retina Network Security Scanner or a similar application. We have tested the Retina program in spring 2004, and during the summer and fall of 2004 we will choose either Retina or a comparable application and begin running regular assessments of a wide range of possible network vulnerabilities.

In the area of network filtering, the applications that we have in place (SurfControl for Internet filtering, AVGuardian for both spam filtering and Internet mail virus scanning) are providing us on the whole with effective safeguards against problematic Internet content. However, we are not using all features of the software because no IT Department employees have received the specialized training needed to take full advantage of the

software's capabilities. By spring 2005, the Network Administrator will pursue training that will allow more effective use of these applications.

We realize the importance of developing detailed disaster recovery plans, and we know that our current plan is not comprehensive. We intend to complete a more detailed plan covering all district technology and communication elements, coordinated with local governments for whom we have begun administering telecommunications. We intend to contract with a vendor to ensure that we develop a professional, detailed plan that fully meets current best practices.

As another factor in our efforts to enhance network security, connectivity, and disaster preparedness, we have begun designing and assembling a new SBO server room. Our existing SBO server room does not provide sufficient security and does not occupy an effective location in our network topology. By designing and assembling a new server room in a centralized location, that room can better serve both telecommunication and data needs.

The Acceptable Use Policy (AUP) for the Pulaski County Public Schools was reviewed and altered during the summer of 2003 by the administration with the involvement of teachers, parents, and community members, and then approved by the School Board, which produced a single new document that combined elements of two preceding documents, the Internet Access and Computer Use Agreement forms.

No substantial problems have been noted during the 2003-2004 school year with the current AUP, but the IT Department anticipates reviewing the current form during the summer of 2004 to insure that it falls within current best practices. A fuller review by the administration and School Board, also involving students, teachers, administrators, parents, and community members, is anticipated again in the summer of 2005. Our policy will at that point be compared to guidelines recommended by the Virginia School Board Association, and the updated AUP will be forwarded to the Virginia Department of Education.

Educational Applications

In Bloom's taxonomy, the application level has always been linked to lower-level thinking skills. With the coming of the 21st Century Information and Communication Age, this way of thinking is quickly changing. In the 21st Century world of work, our students will constantly be asked to reinvent themselves as new technologies rapidly appear and replace older outdated ones. Today's industry wants workers that are knowledgeable, but more importantly, today's industry wants workers that can apply their knowledge to new and rapidly changing situations. Today's worker must be a problem solver with the ability to access new information and apply it to given situations. Not only must we prepare our students for this new and changing world, but we must also prepare our administrators and instructional personnel to meet these same challenges. The goals, objectives, and strategies in our technology plan were developed to help our students, administrators, and instructional personnel acquire not only technology knowledge but also the ability to apply the knowledge in classroom and real world situations.

The first place to look for educational technology applications is in a district's curricula. Pulaski County Public Schools have invested considerable time, money, and effort in vertically and horizontally aligning the K-12 curricula. VCATs (Vertical Curriculum Alignment Team) for each grade level and subject area have worked on developing curriculum guides, pacing guides, and nine week assessments. Emphasis has been placed on including technology resources and technology instructional strategies. The curriculum guides and pacing guides are published on the Department of Curriculum, Instruction, and Assessment's Web site. Parents have access to the pacing guides and are encouraged to access them. We have a software evaluation instrument in place, but we need to provide administrators and instructional personnel with more information if they are to make informed decisions about software (i.e. Radford University's Educational Innovations Lab, test data, and software demonstrations). To avoid equity issues, a standard software configuration must be available in each school, and we addressed this issue in our technology plan. Other software purchases must be a joint decision between the school, the Department of Curriculum, Instruction, and Assessment, and the Department of Research and Technology and must be based on data-proven needs. Our technology plan addresses our need for more e-learning opportunities for both our students and instructional personnel. We must also investigate the use of online textbooks and supplemental resources. These strategies in the technology plan are essential and must be successfully implemented before laptops are purchased for students in 2006.

Pulaski County Public Schools are participating fully in the Web-based SOL Technology Initiative. All spring 2004 end of course SOL tests will be given online at Pulaski County High School. Both of our middle schools have been certified and will participate in online field testing during May of 2004. The spring 2004 Algebra I end of course SOL test will be given online at both middle schools. One of the major goals of our technology plan is to help our students meet or exceed the benchmarks on national, state,

and local assessments. We feel that participating in the Web-based SOL Technology Initiative is a first step to accomplishing this goal. The first three objectives in the technology plan deal with making sure that all of our schools are ready for the certification process. Finding a constant and reliable funding source is the major obstacle to accomplishing these objectives. The state provides monies for the Web-based SOL Technology Initiative but that money cannot be used to solve power and wiring issues in older buildings.

The advances made in utilizing student data in Pulaski County Public Schools are a positive outgrowth of the Web-based SOL Technology Initiative and State Reporting System. All of our administrators have received training in using data to make informed instructional decisions. Our technology plan outlines the need to continue and expand this training to all instructional personnel. We are in the process right now of standardizing the procedures for entering data at each school. The Instructional Technology Specialist and Administrative Assistant to the Superintendent are standardizing data definitions that will be utilized by all schools. To aid in this process, the Department of Research and Technology is currently researching data warehousing and Web-based reporting systems. Our Special Education Department is in the process of implementing Tranquility for Special Education which will enable the department to track and report information on students enrolled in a special education program. In this age of budgetary shortfalls, data-driven decision making must become the norm.

The library media centers in Pulaski County Public Schools are supervised by the Executive Director of Curriculum, Instruction, and Assessment. However, the Department of Research and Technology works closely with the library media centers. The Instructional Technology Specialist attends the monthly meetings of the library media specialists from each school and provides technology support. Through the Blue Ridge West Consortium, United Streaming videos are available at each school. Our technology plan outlines our need for a union catalog so that our libraries can efficiently share resources. Our students are able to access the Virginia Find It Network databases through a cooperative agreement with our local public library.

At the present time, community access is one of our weakest areas. This is not an intentional oversight, but one caused by a lack of funding. Keeping schools open in the evenings requires additional funding that just isn't available to us right now. We are aware that if we are to attract new industries to our area, we must have a highly trained workforce. Our technology plan addresses the need for a part-time grant writer that could apply for grants that would enable us to provide these services to our community. One of our elementary schools applied for and received a 21st Century Community Learning Center Grant and is able to provide after-school opportunities to both students and parents. Our technology plan further addresses the need for partnerships between local community agencies and our school division.

The last educational application discussed in this section is probably the most exciting application, and the one that provides the most promise in our quest to integrate technology into instruction. At the present time, we are exploring our teleconferencing

and distance learning capabilities. Through our participation in the Blue Ridge West Consortium, we were able to receive H.323 equipment in March of 2004. We are in the initial stages of testing our system and have already been in touch with New River Community College and Radford University about possible joint projects. This application goes hand in hand with our need to provide learning opportunities for our students, administrators, and instructional personnel 24 hours a day.

Accountability

The No Child Left Behind Act has brought with it a whole new array of buzz words. *AYP*, *school choice*, *highly qualified*, and *accountability* are just a few of these new educational terms. We see them in the press and hear about them on television. Of all of them, *accountability* has the most far reaching consequences to education as we know it. By 2013-2014, the No Child Left Behind Act mandates that all students will be proficient in both reading/language arts and mathematics. School choice, supplemental services, and loss of funding are just a few of the sanctions facing school districts not meeting this mandate. Pulaski County Public Schools are focused to meet this challenge in three ways: vertical alignment of the K-12 curricula with the Standards of Learning, development of pacing guides, and development of nine weeks tests. As a district, we also feel that technology, seamlessly integrated into the instructional program, can help both our students and instructional personnel meet the mandates of the No Child Left Behind Act. Just like the other components of the No Child Left Behind Act, technology is also held accountable to certain standards. Ensuring accountability must be one of main components of any district technology plan. Our district plan focuses on accountability in three areas.

To begin with, Pulaski County Public Schools must ensure that all administrators and instructional personnel can effectively use technology as both an administrative tool and an instructional tool. When evaluating teacher use of technology, administrators must have a clear idea of effective educational technology instructional strategies. Our technology plan clearly outlines this need and provides for training and a checklist to help administrators in the evaluation process. Staff development is essential to the effective use of technology as an administrative tool and instructional tool. The creation of partnerships between our district and local colleges and universities, the development of video training libraries, online course offerings, distance learning opportunities, and e-learning opportunities are just a few of the strategies outlined in our technology plan to help our district meet its technology staff development needs. Evaluation sheets, test results, and surveys will be used to ensure that our staff development offerings are meeting the needs of all of our personnel. Our district is committed to making data-driven decisions. Our technology plan provides for training and hardware to make this a reality. We have a procedure in place for ensuring that all instructional personnel meet the technology competencies, and our plan provides for implementation of Phase II and Phase III of this initiative.

Pulaski County Public Schools must ensure that each student is prepared for the 21st Century Information and Communication Age. Our students must learn to be problem solvers. They must be able to apply their knowledge, ask questions, access data sources and know how to use the information, work as a team, and evaluate their performance. Technology must not be a separate course but an integral part of each course that they take. Districts must look to their curricula to make sure that this is happening. We are aware that we must offer more online and e-learning opportunities for our students. They must have chances to practice problem solving. Problem solving techniques must be

taught and practiced just like any other skill. Instructional personnel also need a clear picture of what technology competencies students should have at each grade level. Rubrics need to be developed with an online assessment component for students. Our technology plan includes strategies to accomplish these goals and objectives.

Finally, we must be held accountable for a solid infrastructure. This will be accomplished in two ways. To begin with, all of our schools must meet the certification standards for the Web-based SOL Technology Initiative. This will ensure that our division is able to participate fully in online testing. To further ensure that we have a solid infrastructure, the strategies outlined in our technology plan will be reviewed annually and the current status of each strategy will be checked. Changes and revisions will be made on a yearly basis.

Pulaski County Public Schools
Technology Budget
FY 2009-2010

Technology - Instruction (ITRTs): 68100

Description		
Salaries & Wages (1000)	$	178,300
Benefits (2000)	$	48,138
TOTAL: Technology - Instruction	$	226,438

Technology - Administration: 68300

Description		
Salaries & Wages (1000)	$	574,850
Benefits (2000)	$	276,002
Maintenance Service Contracts (3320) *Software subscriptions and support (e.g. antivirus software, emergency notification system, student information system, etc.)*	$	113,688
Telecommunications - Network (5001) *Microwave contract with Conterra and DS3 internet connection.*	$	100,000
Telecommunications - Wireless (5002) *Blackberries, cellphones, air cards, etc.*	$	60,000
Local Mileage (5510)	$	5,000
Travel - Convention/Education (5540)	$	5,000
Miscellaneous (5800)	$	2,500
Office supplies (6001)	$	2,500
Repair & Maintenance supplies (6007) *Replacement parts, batteries, etc.*	$	12,000

Pulaski County Public Schools
Technology Budget
FY 2009-2010

Technology - Administration: 68300 (cont.)

Description	
Other Operational Supplies (6014)	$ 4,000
Maintenance and replacement of parts for school security cameras.	
Technology Software/On-line Content (6040)	$ 35,000
Non-Capitalized Technology Hardware (6050)	$ 51,120
Required local match for state VPSA Technology grant.	
Non-Capitalized Technology Leases (6051)	$ 125,278
Leases for desktop and laptop computers.	
TOTAL: Technology - Administration	$ 1,366,938

VPSA State Technology Grant

Description	
Non-Capitalized Technology Hardware (6050)	$ 208,000
Non-Capitalized Technology Infrastructure (6060)	$ 50,000
TOTAL: VPSA State Technology Grant	$ 258,000

TOTAL TECHNOLOGY BUDGET	**$ 1,851,376**

Technology and progress do not stand still. For all of our sophistication, we still have many areas in which we can improve our organization's delivery of its services. Unfortunately any change which could generate such improvements requires an investment of capital and labor. The critical element is funding. Due to the exponential rate of change in the technology industry, we must constantly look to the future. A replacement cycle is essential if we are to keep up with the changes that are occurring in the industry. However, hard hit localities do not have the funding resources to guarantee the constant funding that technology requires. With rising budget deficits, federal and state funding sources cannot be relied on to provide the funding that technology requires. We were notified at the beginning of the 2003-2004 school year that our Title VI funds would be eliminated. In one year, we went from $103,000 to $0. In order to meet these challenges and the No Child Left Behind mandates, our division will need to look more closely at grant opportunities. Our technology plan includes the hiring of a part-time grant writer. We must also look to cooperating, sharing resources, and forming partnerships with local community agencies.

Collaborations and Partners

- Town of Pulaski
- County of Pulaski
- New River Community College
- Radford University
- Virginia Tech
- University of Virginia

Executive Summary

Our students face more challenges and changes than any generation before them. The 21st Century Information and Communication Age will require them to possess skills that enable them to truly be life-long learners. They must be able to constantly reinvent themselves in order to keep up with the exponential changes in the job market. Technology will play a huge role in this process. Students in Pulaski County Public Schools are using technology, but we must work towards making sure that all students are using technology not just students lucky enough to be in a classroom with a teacher that effectively uses technology. Not only must we prepare our students for this new and changing world, but we must also prepare our administrators and instructional personnel to meet these same challenges. The goals, objectives, and strategies in our technology plan were developed to help our students, administrators, and instructional personnel acquire not only technology knowledge but also the ability to apply the knowledge in classroom and real world situations. Our technology plan contains four major goals. The technology plan committee arrived at these four goals by looking at the economic development needs of our county, the strategic initiatives of the School Board, the Virginia Department of Education Technology Plan, and recent research on integrating technology into the curriculum and instruction.

Our first goal is to ensure that all of our students meet or exceed benchmarks on national, state, and local assessments. In order to accomplish this goal, our technology plan begins by focusing on the certification of all of our schools for the Web-based SOL Technology Initiative (online testing). Our strategies concentrate on solving power issues, increasing bandwidth through upgrading data and voice lines, and the addition of additional labs to meet the student to computer ratio required for testing. Our plan also addresses the need for curricula changes. Our curricula must outline the technology literacy skills expected of our students at each grade level. It must also be a resource for teachers wanting to integrate technology into their lessons. In objectives and strategies section of our technology plan, we have strived to do this. Our curriculum is undergoing a rigorous revision that includes technology integration instructional strategies. One of our objectives is to offer more online learning opportunities. During the coming year to meet the objectives and strategies of the technology plan, rubrics, checklists, and assessments will be developed to ensure that all of our students are meeting the Computer/Technology Standards of Learning. Our technology plan addresses our need for more e-learning opportunities for both our students and instructional personnel. We must also investigate the use of online textbooks and supplemental resources. These strategies in the technology plan are essential and must be successfully implemented before laptops are purchased for students in 2006.

Our second goal focuses on the need for all administrators and instructional personnel to appropriately use technology to improve instruction and learning. In order to accomplish this goal, the technology plan must address the issues of staff development, equity, connectivity, and a reliable infrastructure. Our second goal's main focus is staff development with the other issues being addressed by other goals. Technology will play

an integral part in helping educators prepare our students for the 21st Century world of work. But, technology must be integrated seamlessly into the curriculum. Research has proven that it will not work as a separate part of the education process. Staff development is essential if technology is to play a vital part in our curriculum and teaching. However, we can no longer rely on the one time, one hour staff development offerings that don't allow teachers and administrators to use the tools in a meaningful way. With high stakes assessments becoming the norm, we must make informed instructional decisions based on our data. This requires training to learn how to get the data in a form that is usable and also how to use the data to make changes. Technology must become a valued tool by all administrators and central office personnel who must become role models in its use. Only then will our instructional staff completely embrace technology as the useful and essential tool that it is. Our technology plan acknowledges this and incorporates the design of an evaluation instrument and training on the use of the instrument into our objectives and strategies. Time is a precious commodity and is one of the chief reasons that staff development often fails. To meet the needs of our administrators and instructional staff, our technology plan's objectives and strategies include alternative methods of staff development such as video conferencing, online classes, and distance learning offerings.

Our third goal centers on developing new channels of communication and strengthening existing channels between schools, schools and central office, and schools and community. In the 21st Century Information and Communication Age, the Internet has quickly become one of our major communication tools. With this in mind, our technology plan outlines our need for a greater Web presence than we have at the present time. It is essential for all of our departments and schools to have a Website that is regularly updated. Students and instructional personnel need to access library resources from home. Teachers want to access their gradebooks from home. Parents want to be able to access progress and homework information on their children on a daily basis. Increased paper and copier costs can be reduced or entirely eliminated through the use of electronic forms and data-imaging technology. Travel cost can be reduced through the use of video conferencing technology, and students and instructional personnel can access online classes, museums, and other classrooms in other counties, states, or even countries. The objectives and strategies in Goal 3 provide access to all of these technologies.

Our final goal provides for a stable, secure infrastructure. Our twenty-first century educational and administrative needs require much more from our infrastructure and our connectivity than were required just five or ten years ago. What is becoming increasingly clear is that both administrators and teaching staff need AAA: Anytime Anywhere Access. The possibility of achieving AAA certainly involves substantial improvements in both infrastructure and the technological fluency of users, but connectivity will be the key element that ties our network and application infrastructure to those users, wherever they may be geographically located at any given time. If technology is to play a vital part in our curriculum and teaching, there must be a solid infrastructure in place. The quickest way to kill a teacher's or student's enthusiasm is to provide training for the latest hardware or software and have it not work when it is tried back at school. Bandwidth is

crucial for a community trying to attract major industries. It is also critical for multimedia applications and Web applications in all schools. Because of the rate of change in the technology industry, replacement cycles are crucial. All of these components are necessary for a solid technology infrastructure. The critical element is funding. Hard hit localities do not have the funding resources to guarantee the constant funding that technology requires. With rising budget deficits, federal and state funding sources cannot be relied on to provide the funding that technology requires. Communities must learn to cooperate, share resources, and form partnerships if the funding problems are to be solved. Our technology plan addresses all of these issues.

Review of Accomplishments

2004-2009

- Upgrade of all schools to 100 MG switch environment to all desktops
- Implementation of online testing at all schools
- Administrators and Instructional Personnel meeting Technology Competencies
- PowerSchool staff development opportunities
- Network stability
- Increased bandwidth due to the installation of a microwave WAN with redundancy of DS3 agreement with New River Community College and T1 lines at each school
- Enhanced stability due to leased land lines, server upgrades, etc.
- Increased use of electronic communication over paper
- All administrators have PDa used in electronic evaluations
- Upgrading instructional personnel's desktop computers
- Computer labs in all schools
- Providing staff development opportunities for integrating technology
- Online access to curriculum and pacing guides
- Laptop and PDA loaner program
- Online curriculum at Pulaski County High School – NovaNet and Rosetta Stone
- Two new elementary schools with computer ratios of 1:1, Smartboards in every classroom, with ceiling mounted projectors
- All administrative staff have laptops
- All Special Education staff have laptops

Horizons

- Tablets
- Wireless Labs
- Video-on-Demand Technology
- Fiber Connections to All Schools
- Gigabit Ethernet to All Desktops

Local Technology Policies and Guidelines

Board Policy IIBEA:
ACCEPTABLE COMPUTER SYSTEM USE

The School Board provides a computer system, including the Internet, to promote educational excellence by facilitating resource sharing, innovation and communication. The term computer system includes hardware, software, data, communication lines and devices, terminals, printers, CD-ROM devices, tape drives, servers, mainframe and personal computers, the Internet and other internal or external networks.

All use of the Division's computer system must be (1) in support of education and/or research, or (2) for legitimate school business. Use of the computer system is a privilege, not a right. Any communication or material used on the computer system, including electronic mail or other files deleted from a user's account may be monitored or read by school officials.

The Division Superintendent shall establish administrative procedures, for the School Board's approval, containing the appropriate uses, ethics and protocol for the computer system. The procedures shall include:

(1) a prohibition against use by division employees and students of the division's computer equipment and communications services for sending, receiving, viewing or downloading illegal material via the Internet;

(2) provisions, which include including the selection and operation of a technology protection measure for the division's computers with Internet access to filter or block Internet access through such computers, for the purpose of preventing access to

(a) child pornography as set out in Va. Code *§18.2-374.1:1 or as defined in 18* U.S.C. § 2256;

(b) obscenity as defined by Va. Code *§ 18.2-372 or 18* U.S.C. *§ 1460; and*

(c) material that the school division deems to be harmful to juveniles as defined in Va. Code sections 18.2-390, material that is harmful to minors as defined in 47 U.S.C. § 254(h)(7)(G), and material that is otherwise inappropriate for minors;

(3) provisions establishing that the technology protection measure is enforced during any use of the Division's computers by minors;

(4) provisions establishing that the online activities of minors will be monitored;

(5) provisions designed to protect the safety and security of minors when using electronic mail, chat rooms, and other forms of direct electronic communications;

(6) provisions designed to prevent unauthorized online access by minors, including "hacking" and other unlawful activities by minors

online; and
(7) provisions prohibiting the unauthorized disclosure, use, and dissemination of personal information regarding minors.
Use of the School Division's computer system shall be consistent with the educational or instructional mission or administrative function of the Division as well as the varied instructional needs, learning styles, abilities and developmental levels of students. The Division's computer system is not a public forum.
Each teacher, administrator, student and parent/guardian of each student shall sign the Acceptable Computer System Use Agreement, IIBEA-E2, before using the Division's computer system. The failure of any student, teacher or administrator to follow the terms of the Agreement, this policy or accompanying regulation may result in loss of computer system privileges, disciplinary action, and/or appropriate legal action.
The School Board is not responsible for any information that may be lost, damaged, or unavailable when using the computer system or for any information retrieved via the Internet. Furthermore, the School Board will not be responsible for any unauthorized charges or fees resulting from access to the computer system.
The Division Superintendent shall submit to the Virginia Department of Education this policy and accompanying regulation biennially.
Adopted: October 14, 1999
Revised: June 14, 2001
Revised: October 11, 2001
Pulaski County School Board Page 515 of 867
Legal Ref.: *Code of Virginia*, 1950, as amended, §§ 18.2-372, 18.2-374.1:1, 18.2-390, 22.1-70.2 and 22.1-78.
18 U.S.C. *§§ 1460, 2256.*
47 U.S.C. *§ 254.*
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Board Policy IIBEA-R1:
ACCEPTABLE COMPUTER SYSTEM USE
All use of the Pulaski County School Division's computer system shall be consistent with the School Board's goal of promoting educational excellence by facilitating resource sharing, innovation and communication. The term computer system includes hardware, software, data, communication lines and devices, terminals, printers, CD-ROM devices, tape drives, servers, mainframe and personal computers, the Internet and any other internal or external network.
Computer System Use-Terms and Conditions:
1. **Acceptable Use**. Access to the Division's computer system shall be (1) for the purposes of education or research and be consistent with the educational objectives of the Division or (2) for legitimate school business.
2. **Privilege**. The use of the Division's computer system is a privilege, not

a right.
3. **Unacceptable Use**. Each user is responsible for his or her actions on the computer system. Prohibited conduct includes:
-using the network for any illegal activity, including violation of copyright or other contracts, or transmitting any material in violation of any federal, state or local law.
-sending, receiving, viewing or downloading illegal material via the computer system.
-unauthorized downloading of software.
-downloading copyrighted material for unauthorized use.
-using the computer system for private financial or commercial gain.
-wastefully using resources, such as file space.
-gaining unauthorized access to resources or entities.

-posting material authorized or created by another without his or her consent.
-using the computer system for commercial or private advertising.
-submitting, posting, publishing or displaying any obscene, profane, threatening, illegal or other inappropriate material.
-using the computer system while access privileges are suspended or revoked.
-vandalizing the computer system, including destroying data by creating or spreading viruses or by other means.
4. **Network Etiquette**. Each user is expected to abide by generally accepted rules of etiquette, including the following:
-Be polite.
-Users shall not forge, intercept or interfere with electronic mail messages.
-Use appropriate language. The use of obscene, lewd, profane, threatening or disrespectful language is prohibited.
-Users shall not post personal contact information about themselves or others.
-Users shall respect the computer system’s resource limits.
-Users shall not post chain letters or download large files.
-Users shall not use the computer system to disrupt others.
-Users shall not read, modify or delete data owned by others.
5. **Liability**. The School Board makes no warranties for the computer system it provides. The School Board shall not be responsible for any damages to the user from use of the computer system, including loss of data, non-delivery or missed delivery of information, or service interruptions. The School Division denies any responsibility for the accuracy or quality of information obtained through the computer system. The user agrees to indemnify the School Board for any losses, costs or damages incurred by the School Board relating to or arising out of any violation of these procedures.
6. **Security**. Computer system security is a high priority for the school

division. If any user identifies a security problem, the user shall notify the building principal or system administrator immediately. All users shall keep their passwords confidential and shall follow computer virus protection procedures.
7. **Vandalism**. Intentional destruction of any part of the computer system through creating or downloading computer viruses or by any other means is prohibited.
8. **Charges**. The School Division assumes no responsibility for any unauthorized charges or fees as a result of using the computer system, including telephone or long-distance charges.
9. **Electronic Mail**. The School Division's electronic mail system is owned and controlled by the School Division. The School Division may provide electronic mail to aid students and staff in fulfilling their duties and as an education tool. Electronic mail is not private. Student's electronic mail will be monitored. The electronic mail of staff may be monitored and accessed by the School Division. Unauthorized access to an electronic mail account by any student or employee is prohibited. Users shall be held personally liable for the content of any electronic message they create. Downloading any file attached to an electronic message is prohibited unless the user is certain of that message's authenticity and the nature of the file.
10. **Enforcement.** This procedure and the policy it supports shall be enforced by monitoring information on the School Division's computer system. To protect students, software may also be installed on the computer system that blocks obscene/illegal material as well as material that may be harmful to juveniles. **Any violation of these regulations shall result in loss of computer system privileges and may also result in appropriate disciplinary action, as determined by School Board policy, or legal action.**
Adopted: October 14, 1999
Revised: October 11, 2001
Pulaski County School Board Page 519 of 867
Legal Ref.: Code of Virginia, 1950, as amended, § 18.2-372, 18.2-374.1 ;1, 18.2-390, 22.1-70.2 and 22.1-78.
18 U.S.C. §§ 1460, 2256.
47 U.S.C. § 254.
Cross Ref.: JFC Student Conduct
JFC-R Standards of Student Conduct

Board Policy IIBEA-R2:
Publishing on the Internet World Wide Web
The Virginia Standards of Learning require students to publish a Web page by the end of eighth grade. The school system encourages students and employees to publish information or school projects on the World Wide Web. However, when such web pages originate from a school system computer or district maintained server, the following policy must be

followed by all individuals. Contact person for pages should be the instructor, not the student.

Online Images of Students in Grades PK-8

Images with the focus on either one or two students will not be placed on a Web site. Pictures of three or more students, such as a class picture, are permitted. For any picture of three or more students that is published on the Web, neither first nor last names of the students shown in those pictures are to be included with the image or in accompanying text. Where text on a page is not associated with an accompanying image, only first names of students may be used.

Schools need the permission of parents in order to publish student pictures or student work on the World Wide Web. Schools should never publish an image, without the direct permission of the students in that image and the permission of the parents.

Online Images of Students in Grades 9-12

Pictures of students in grades 9-12 may be published without regard for whether those images contain one, two, or a group of individuals; however, the school still needs the permission of the parent(s), and the student(s) in the picture, to publish such images on the World Wide Web. Students may be identified by first name, last name, or both.

Intellectual Property Rights

Schools must protect individual rights concerning the publishing of studentproduced
work, such as poems, short stories, and art. Not only should a school have the permission of the student for such publications, but parents must also agree. Before posting student-generated work, schools must take reasonable care that the content of that work is owned solely by the student. Plagiarism in any form is not permitted.

Responsibilities of the School

The principal of each school must assume the ultimate responsibility for determining the content to be posted online. The principal may appoint a committee to review and approve all pages written by school employees or students and make decisions about the appropriateness of content and links before the pages are posted to a Web server.

Web Page Content

The principal or review committee at each school should review carefully the content included on their own Web pages. These pages not only should be attractive in appearance, and in good taste, but they should be maintained with up-to-date and accurate information. The committee should consider the following when judging the appropriateness of content:

- Personal home pages for both employees and students may be linked to school pages; however, these sites must be of a professional nature rather than just a listing of personal information, such as name, age, school attended, hobbies and interests, etc.
- Commercial Web pages should not be linked to school pages unless

that link provides access to educationally relevant information.

- Web pages written by employees and students, and maintained on a district-owned server, should not contain offensive language. In addition, they must not contain profanity, obscene comments, sexually explicit material, or expressions of bigotry, racism, or hate. These pages must not include links to any other sites containing any of the language or material listed above.
- No Web pages written by employees or students, and maintained on a district-owned server, may promote or encourage illegal or immoral activities. No link from these pages may lead users directly to any other page that promotes or encourages illegal or immoral activities.
- When a student puts a downloaded image on his or her page, permission to do so must have been obtained from the person who owns the page from which the image was taken. That permission may be given via e-mail and is often gained simply by sending an email request to the person who has developed the page where the image is located.

Adopted: September 9, 1999

Board Policy IIBEA-E:
ACCEPTABLE COMPUTER SYSTEM USE AGREEMENT
Each employee must sign this Agreement as a condition for using the School Division's computer system. Each student and his or her parent/guardian must sign this Agreement before being granted use of the School Division's computer system. Read this Agreement carefully before signing.

Prior to signing this Agreement, read Policy and Regulation IIBEA, Acceptable Computer System Use. If you have any questions about this policy or regulation, contact your supervisor or your student's principal.

I understand and agree to abide by the School Division's Acceptable Computer System Use Policy and Regulation. I understand that the School Division may access and monitor my use of the computer system, including my use of the Internet, e-mail and downloaded material, without prior notice to me. I further understand that should I violate the Acceptable Use Policy or Regulation, my computer system privileges may be revoked and disciplinary action and/or legal action may be taken against me.

Student/Employee Signature _____ Date _____

I have read this Agreement and Policy and Regulation IIBEA. I understand that access to the computer system is intended for educational purposes and the Pulaski County School Division has taken precautions to eliminate inappropriate material. I also recognize, however, that it is impossible for the School Division to restrict access to all inappropriate material and I will not hold the School Division responsible for information acquired on the computer system. I have discussed the terms of this agreement, policy and regulation with my student.

I grant permission for my student to use the computer system and for

the School Division to issue an account for my student.
Parent/Guardian Signature _____ Date_____
Parent/Guardian Name _____ (Please Print)
Adopted: October 14, 1999

Board Policy IIBEA-E2:
SAMPLE LETTER TO PARENTS:
ACCEPTABLE COMPUTER SYSTEM USE

Dear Parent/Guardian:

The Pulaski County School Board offers your student the use of electronic communications through the Pulaski County School Division's computer system. Your student will be able to communicate with other schools, colleges, organizations and individuals around the world through the Internet and other electronic information systems/networks.

Part of the School Division's responsibility in preparing students for the 21st century is to provide them access to the tools they will be using as adults. The Internet will likely be one of these tools. Through the Division's computer system your student will have access to databases, libraries and computer services from all over the world. We accept the responsibility of teaching your student about his/her role as a "network" citizen and the code of ethics involved with this new community.

With this educational opportunity also comes responsibility on the part of your student. It is important that you and your student read the enclosed division policy, administrative regulation and agreement form and discuss these requirements. The Division takes precautions to prevent access to inappropriate material. However, it is impossible to control access to all material and a user may access inappropriate material.

In order for your student to take advantage of this educational opportunity, your authorization is needed. Attached to this letter are the Acceptable Computer System Use Policy and Regulation (IIBEA) and the Acceptable Computer System Use Agreement which both you and your student must sign before your child may use the computer system. Please review these materials carefully with your student before signing the required agreement.

Sincerely,

Adopted: October 14, 1999

Technology Survey Spring 2004

Please take a few moments to fill out the technology survey. The results from this survey will be used to plan technology staff development activities for the next two years.

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1) What grade level do you teach? (Please check all that apply.)

- ☐ PK-1
- ☐ 2-3
- ☐ 4-5
- ☐ 6-7-8
- ☐ 9-10-11-12
- ☐ Other (please specify)

If you selected other please specify:

2) Have you visited the Educational Technology Web site?

- ○ Yes
- ○ No

3) Do you know the user name and password to gain access to the Educational Technology Web site?

- ○ Yes
- ○ No

4) Have you used Help Box this year for a computer problem in your room or school?

- ○ Yes
- ○ No

5) Have you passed all 26 of your technology competencies?

- ○ Yes
- ○ No

6) Do you have a personal computer at your home?

- ○ Yes
- ○ No

7) Is so, do you have a connection to the Internet?

- ○ Yes
- ○ No

8) If you have a connection to the Internet at your home, what type is it?

- ○ Dial-up
- ○ Cable Modem
- ○ DSL
- ○ Other (please specify)

If you selected other please specify:

9) Do you have a teacher (professional) Web site?

- ○ Yes
- ○ No

10) Do you use InteGrade Pro as your gradebook?

- ○ Yes
- ○ No

11) Please check all of the technologies that you use in your classroom.

- ☐ Word Processor
- ☐ Integrated Learning Systems (NovaNet, Breakthrough)
- ☐ Spreadsheet and Graphing
- ☐ Games
- ☐ Special Applications for Reading and Math (Accelerated Reader)
- ☐ E-mail
- ☐ Internet
- ☐ Presentations Software (PowerPoint)
- ☐ Inspiration
- ☐ Paint or Draw Programs
- ☐ Administrative Software (SASI, InteGrade)
- ☐ Other (please specify)

If you selected other please specify:

12) When do you prefer to have staff development training? (Please check all that apply.)

- ☐ After work
- ☐ Classes
- ☐ Saturday workshops
- ☐ Summer workshops
- ☐ Before work
- ☐ Online/self-paced
- ☐ Other (please specify)

If you selected other please specify:

13) Rank these topics or skills in terms of how much you want to learn about them.

	High Priority	Moderate Priority	Low Priority	Not a Priority
13.1) Windows-Basic operation-changing backgrounds and screensavers, maintaining your computer, using the Search feature, creating desktop shortcuts	○	○	○	○
13.2) File Management	○	○	○	○
13.3) Using MS Word	○	○	○	○
13.4) Using MS Excel	○	○	○	○
13.5) Using MS PowerPoint	○	○	○	○
13.6) Using GroupWise-advanced features	○	○	○	○
13.7) Using the Internet - How to search for what you want	○	○	○	○
13.8) Desktop	○	○	○	○

Publishing				
13.9) Creating a Web site	○	○	○	○
13.10) Creating multimedia presentations	○	○	○	○
13.11) More Mail Merge activities	○	○	○	○
13.12) SASI Basics	○	○	○	○
13.13) SASI Queries and Mail Merge	○	○	○	○
13.14) SASI Advanced Queries	○	○	○	○
13.15) Using InteGrade	○	○	○	○
13.16) Using your phone and its features	○	○	○	○
13.17) Tips for PDA users	○	○	○	○
13.18) Integrating MS Office applications into your instruction	○	○	○	○
13.19) Using a scanner, digital camera, or projector	○	○	○	○

14) Please list any other technology staff development opportunities that you would like to see offered.

Thank you for your time and effort in providing your district with this useful information. Have a great summer.

Submit Survey