

Closing the Digital Divide

Establishing Access to Technology Resources to All Schools

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This proposal outlines the technology access divide at district schools and interventions designed to narrow the gap between the “have’s” and “have-not’s.” Schools include both federally and locally funded schools, each with their own set of issues in dealing with access to technology.

I. Introduction

“While not every student has a computer and the Internet at her fingertips, it's clear that the problem of access is on its way to being solved. But there remain other areas of concern: the quality of hardware and connections, what students do with technology, what their teachers know and can do, the influence of strong leaders, and reaching those populations of students out of the educational mainstream.” (Solomon, 2002)

Within the Pender County School district, this divide is evident in the difference between those schools receiving Title I funding and those who are not. Although schools that qualify for the funding are deemed to be economically deficient, these schools are often better equipped with technology than those who do not receive the funding. Although funding is a key contributor to bridging the divide, it does not stand alone. There are several other contributors that need to interweave simultaneously in order to bridge this divide successfully.

This proposal outlines those contributing issues of the digital divide in the Pender County district schools. These schools include both federally and locally funded schools, each with their own set of issues in dealing with access to technology.

The areas where issues have been identified are: Technology Integration, Professional Development, Hardware/Software Procurement, Instructional Environment, and Community. Along with outlining the problems within these areas, this proposal also suggests goals and interventions designed to narrow the gap between the technology “have's” and “have-not's” who stand on either side of the divide.

These suggested interventions form the basis for the Proposed Action Plan, identifying those responsible for each intervention's implementation, the target time frame, and evidence of implementation. Key district stakeholders should utilize this proposal as a guide for developing an implementation schedule that will not only align with district strategic goals but ensure its ultimate success.

II. Content (The Digital Divide and Solutions)

Technology Integration

Problem: Administrators do not see technology integration as a critical issue or do not know what true integration looks like.

Problem: At both ends, computer integration is limited. Much of the access that students have to computers is through a “computer class” instead of using technology as a tool to achieve core curriculum goals.

Problem: Focus has traditionally been on the use of office applications (word processing especially) and internet research. Students are not being fully introduced to practical functions of spreadsheets, databases, collaborative web applications and multimedia creation.

Goal: Administrators understand technology integration as a critical issue and can describe what it might look like in their school by citing examples.

Goal: Based on the National Educational Technology Standards (NETS), students should learn to use technology as an aid to the core courses which focus on media production, communication, and collaboration.

- Suggested Intervention: Administrative exposure and instruction on how to integrate technology standards into the curriculum must be a priority. The focus must be on using technology as a tool and not a stand-alone subject through a full understanding the NETS.
- Suggested Intervention: Teacher exposure and instruction on how to integrate technology standards into the curriculum must be a priority. The focus must be on using technology as a tool and not a stand-alone subject through a full understanding of NETS.

Professional Development

Problem: Low income schools – receiving federal funding, much of it spent on technology (hardware and software), but little is being spent on technology integration professional development for teachers, therefore access is limited based on lack of teacher knowledge. Currently, the district is requiring 3 CEU's (30 hours) of technology professional development, but is only implementing training at the district level. Teachers are completing a self-assessment of technology integration skills.

Problem: Many experienced teachers, although displaying experience and ambition within their own content areas, seem content having only basic technology skills. They do not see themselves as a resource for their students in the area of technology. Students' access to relevant and emerging tools is limited due to their teachers' lack of comfort with them.

Goal: A systematic plan is in place to spend federal money that includes long range plans for hardware and software, technology integration professional development for teachers and all stakeholders (including parents and administration), and updating and maintenance.

- Suggested Intervention: Focus at Title I schools on professional development for teachers in the use of technology for teaching the core curriculum (Math, Science, Social Studies, Language Arts).
- Suggested Intervention: District should implement an administrative requirement that teachers will be evaluated on their technology usage. This evaluation should be based on teachers' use of appropriate technology to teach the curriculum.
- Suggested Intervention: Additional school-level positions funded to assist these schools in providing professional development for its teachers.

- Suggested Intervention: Technology staff development must focus on tools that are relevant in today's world and emerging technologies must be taught to teachers with suggestions for use in the classroom.
- Suggested Intervention: District publication highlighting emerging technologies and recommendations for teaching these skills.
- Suggested Intervention: Summer institute for teachers who would like to learn more skills dealing with the integration of technology and the issues that accompany their students' access to these tools.

Hardware/Software Procurement

Problem: Higher income schools – do not receive federal funding. Although students have access at home, their access at school is very limited due to lack of up-to-date hardware/software.

Problem: Some schools are operating with one computer lab for over 500 students. This creates a problem when teachers want to use the lab with their students.

Problem: Independent Learning Systems (ILS), although helpful for struggling students, are being purchased by federally funded schools and used with all students. Many administrators view the use of these systems to be technology integration. This misconception is not only draining the schools of their funds, but also limiting the students who are not struggling but still utilizing ILS's. The creative use of technology is not being encouraged.

Goal: A systematic plan is in place to spend local money that includes long range plans for hardware and software, technology integration professional development for teachers and all stakeholders (including parents and administration), and updating and maintenance.

- Suggested Intervention: Development of a schedule for technology updating that all schools who are not federally funded must follow.
- Suggested Intervention: Additional district monetary support for these schools to purchase up-to-date technology.
- Suggested Intervention: Create a district guideline that states an acceptable number of students per flexibly accessed computer. If the school only has one computer lab and the ratio is off, then the school would purchase a mobile lab where laptops can be checked out for use on projects and assignments.
- Suggested Intervention: Limit the number of ILS's that can be purchased at schools and create a profile that limits what students will use the systems to those who are significantly below grade level in their performance or students who have disabilities and are struggling.

Instructional Environment

Problem: Computers are being taught as a separate subject, independent of core content.

Problem: Technology instruction seems to be through direct methods instead of teaching students to problem-solve through the use of constructivist methods.

Problem: Schools are not hiring technology facilitators for teachers (to offer professional development and just-in-time assistance) and students (for more flexible access to technology for projects).

Problem: For economically disadvantaged families, technology may not be affordable and students' access at home is extremely limited. A focus on assisting students in accessing technology after the school day has ended must be initiated.

Goal: Computers are taught within the scope of core classes, seamlessly weaving the use of tools into curriculum goals so that students and teachers understand the nature of technology and its effects on learning.

Goal: Technology instruction is taught using a problem-based approach, teaching students to self-select appropriate technology based on the task at-hand.

Goal: Students have reliable access to technology on a flexible schedule, so that the lack of home access does not prevent them from using appropriate technology on course assignments.

- Suggested Intervention: Schools should restructure itinerant courses, eliminating traditional "computer/business" classes, and utilizing the teaching position for a technology specialist.
- Suggested Intervention: Professional development should be focused on the use of problem/project-based learning and the integration of technology.
- Suggested Intervention: District officials should advocate for the creation of school-based technology facilitator position at as many schools as possible to offer flexible lab access for students and increased training for teachers.
- Suggested Intervention: Schools should initiate open lab hours four days per week so that students will have afterschool access to technology for projects, homework and exploration.

Community

Problem: Some areas in district still do not have fast, reliable broadband access. This, many times, deters some families who are financially able to purchase technology for their homes.

Goal: All families have option to purchase broadband internet access for their students regardless of geographic location.

- Suggested Intervention: Communicate with area Internet Service Providers (ISP) to increase broadband distribution.

III. Proposed Action Plan

Proposed Intervention	Responsible Person(s)	Proposed Timeline	Evidence
Technology Integration			
Courses will be offered to administrators regarding the integrating of technology standards into the curriculum. The focus must be on using technology as a tool and not a stand-alone subject through a full understanding the NETS.	<ul style="list-style-type: none"> • Instructional Technology Coordinator • Superintendent • Technology Director 	3 years	Course offerings
Courses will be offered to teachers regarding integration of technology standards into the curriculum. The focus must be on using technology as a tool and not a stand-alone subject through a full understanding of NETS.	<ul style="list-style-type: none"> • School-based Technology Facilitator • Instructional Technology Coordinator 	3 years	Course offerings
Professional Development			
Implementation of a professional development series for teachers in the use of technology for teaching the core curriculum (Math, Science, Social Studies, Language Arts) at Title I schools.	<ul style="list-style-type: none"> • Federal Programs Director • Instructional Technology Coordinator 	1 Year	Budget for Technology Integration Series at Title I Schools
Implementation of an administrative requirement that teachers will be evaluated on their technology usage.	<ul style="list-style-type: none"> • Assistant Superintendent for Human Resources • Superintendent • Instructional Technology Coordinator 	2 Years	Design and Development of Document Training and Use of Evaluation Instrument
School-level positions funded to assist these schools in providing professional development for its teachers.	<ul style="list-style-type: none"> • Superintendent • Principals 	3 Years	Budget showing payment of school-level Technology Facilitators
Emerging technology professional development courses designed, developed, released to teachers.	<ul style="list-style-type: none"> • Instructional Technology Coordinator 	2 Years	Course Offerings
District publication highlighting emerging technologies and recommendations for teaching these skills.	<ul style="list-style-type: none"> • Instructional Technology Coordinator • Technology Director 	1 Year	Publication Distribution
Summer institute for teachers who would like to learn more skills	<ul style="list-style-type: none"> • Instructional Technology Coordinator 	1 Year	Summer institute agenda

dealing with the integration of technology and the issues that accompany their students' access to these tools.	<ul style="list-style-type: none"> • Technology Director 		
Hardware/Software Procurement			
Non-federal schools update/upgrade schedule	<ul style="list-style-type: none"> • Technology Director • Superintendent • Director of Finance 	6 months	Budget and schedule
Monetary re-allocation for non-Title I schools to purchase up-to-date technology.	<ul style="list-style-type: none"> • Superintendent • Director of Finance 	6 months	Budget
District computers/student guidelines.	<ul style="list-style-type: none"> • Technology Director • Instructional Technology Team 	6 months	Guideline creation/approval
Limit the number of ILS's that can be purchased at schools and create a profile that limits what students will use the systems to those who are significantly below grade level in their performance or students who have disabilities and are struggling.	<ul style="list-style-type: none"> • Superintendent • Assistant Superintendent for Curriculum/Instruction • District Instructional Team • Federal Programs Director 	2 Years	Guideline creation/implementation
Instructional Environment			
Schools should restructure itinerant courses, eliminating traditional "computer/business" classes, and utilizing the teaching position for a technology specialist.	<ul style="list-style-type: none"> • District Instructional Team • Superintendent • Career/Technical Education Director • Principals 	3 Years	Course Restructuring
Professional development should be focused on the use of problem/project-based learning and the integration of technology.	<ul style="list-style-type: none"> • District Instructional Team 	2 Years	Courses designed and delivered
District officials should advocate for the creation of school-based technology facilitator position at as many schools as possible to offer flexible lab access for students and increased training for teachers.	Intervention addressed in "Professional Development."		
Schools should initiate open lab hours four days per week so that	<ul style="list-style-type: none"> • Principals 	1 Year	Lab Access Schedules

students will have afterschool access to technology for projects, homework and exploration.

Community

Communicate with area Internet Service Providers (ISP) to increase broadband distribution.	• School and Community Director	2 Years	Plan development, response from ISP's
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IV. Summary

By following the recommended interventions, Pender County Schools will decrease the digital divide among schools and teachers. This alignment of administration and teachers with systematic technology policy and goals, such as those outlined in NETS, nurtures quality technological access among the students. In each of the five areas of the proposal, interventions clearly state goals that close the gaps in digital "have's" and "have not's". Details in responsible personnel, timelines, and deliverable products, help guide the implementation of this plan.

School districts must take responsibility and action in regards to closing the digital divide among administrators and teachers and ultimately students. Closing these gaps will increase student learning as well as the chance for success in our ever more globally competitive, technology dependent economy.

References:

Solomon, G. (15, April, 2002). Digital equity: It's not just about access anymore. *TechLearning*, Retrieved 9 27, 2007, from http://www.techlearning.com/db_area/archives/TL/2002/04/equity.php