

Pender County Schools/UNC-Wilmington/mit 530

# Needs Assessment Report

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District Technology Plan 2007-2012

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# Executive Summary

With a vision to better prepare students for the 21st century, North Carolina State Superintendent June St. Claire Atkinson and the North Carolina State Board of Education have developed a revised State Strategic Plan based on the Partnership for 21st Century Skills' vision. The plan, entitled "Future-Ready Students for the 21st Century," replaces the previous "ABC's of Public Education" and outlines a guiding mission, goals, and objectives for North Carolina school districts to align their own strategic plans. Since the adoption of the new State Strategic Goals in 2006, all district Technology Plans are currently out of alignment and out-of-date. The state has mandated that all school systems revise and re-align current Technology Plans by fall 2008 to reflect the current "Future-Ready Students for the 21st Century" Strategic Plan. This re-alignment will result in a 4-year plan (2008-2012) designed to drive planning, spending and improving district technology programs. For the purpose of this training needs assessment, the second goal, "NC Public Schools will be led by 21<sup>st</sup> Century Professionals" has been selected.

Extant data including the State Board of Education Biennial Report, the 2006 District Profile, the 2005-2009 PCS Technology Plan and a report from the PCS Professional Development system were reviewed and analyzed. This information provided identification of the problem and established a list of goals to which the technology plan would be aligned. Optimal performance, aligned to the goals and objectives determined by the State Strategic Plan, was determined through interviews with the Superintendent and Technology Coordinators. A focus group with the Instructional Technology Assistance Team was established and information gathered on the actual performance within Pender County Schools. All teachers were invited to participate in a survey to determine availability, usage, skill level and desire for instruction of technology relative to the collaborative nature of the goals and objectives.

All data collected was analyzed and the following conclusions were made. Computer labs and the student information system, NCWise, are not utilized to their full extent. Collaboration among teachers currently exists within individual schools but is rarely seen outside of this realm. Microsoft Office tools were used most often for collaboration and instruction with students. Web-based tools such as blogs, wikis and instant messaging are used by less than 10% of the teachers who responded to the survey. Skill level and request for instruction for these same web-based tools was minimal ("none" or "basic" skill level approximately 50% and request for training 30%). The focus group associates these numbers with the fact that teachers don't understand how this technology can be used and are therefore not motivated to receive instruction.

Recommended solutions include evaluating the cause for minimal computer lab usage so this resource can be utilized to maximum potential. Continued implementation of NCWise with ongoing support is also recommended. Research, approve, and install a suite of collaboration

and communication applications while simultaneously conducting awareness activities to facilitate teacher collaboration and classroom use is also advised. Administrative professional development based on reflection, new tools with their accompanying skills, and best practices must also be available to encourage the changes that must take place to obtain the goal of “NC Public Schools will be led by 21<sup>st</sup> Century Professionals.”

## **Introduction**

Pender County Schools (PCS) is a school district in southeastern North Carolina that serves roughly 7,900 students. Five hundred professional employees (teachers, instructional coordinators and administrators) serve the student population in fourteen traditional schools, one alternative school and one early college high school. A number of administrative units guide the mission and goals of Pender County Schools.

The Board of Education consists of a group of leaders elected by the county voters. They set the course for the district by approving and implementing policies, monitoring district initiatives and hiring the Superintendent. This year, Pender County Schools has undergone a major leadership change with the installation of a new Superintendent.

The Superintendent serves as the district leader and sets an overall vision for the entire system, including the areas of curriculum and instruction, assessment, student services, transportation, finances, maintenance and new school construction. She is the “figurehead” for the system and ultimately accountable to the Board of Education. The Superintendent gathers input from a team of advisors including the Director of Human Resources, Assistant Superintendent for Instructional Services, Chief Financial Officer, Chief Information Officer, Director of Transportation and the Director of Maintenance.

The Instructional Team is responsible for implementation of the Superintendent and Board of Education’s vision for the school system through program and curriculum design, professional development and teacher support, and communication with state curriculum officials. This team consists of system instructional leaders including the Director of Elementary Schools, Director of Secondary Schools, Director of Accountability and Testing, Director of Career and Technical Education, Director of Federal Programs, Director of Student Services and the Instructional Technology Coordinator who also answers to the Chief Information Officer.

The structure of the PCS Technology Department begins with the Chief Information Officer and branches off into two tiers, instructional and technical support. On the support side, PCS currently employs one Technology Support Coordinator and three technicians whose responsibilities are maintaining network connectivity, security, and updates to hardware. The system has struggled to increase the number of these positions, but, due to lack of funding, have had to decrease them as years have passed. The district has implemented a number of remote network management solutions to compensate for the lack of personnel. Currently PCS employs two Technology Coordinators whose responsibilities include the implementation and evaluation of the technology plan strategies, planning of professional development opportunities, and coordinating all instructional technology initiatives throughout the county. Prior to this year, only

one such position was identified and one coordinator is currently on a leave of absence.

“The mission of Pender County Schools Instructional Technology Department is to create the capacity for the development of a content-based classroom infused with appropriate technological innovations to develop students and teachers who are globally competitive and future-ready.” The primary focus of the Instructional Technology program is professional development for teachers. To this end, the Instructional Technology Department struggles in the delivery of professional development. The Instructional Technology Coordinators identify technological leaders in each school and utilize the Title IID Enhancing Education Through Technology (EETT) budget in offering a variety of staff development opportunities, systems training, and teacher support by compensating these teachers for teaching Technology Workshops four times each year, held after the work day has ended.

Each school has two technology representatives, one for technology support and the other for technology training. These are teachers or media coordinators. The Tech Trainers receive a stipend to deliver four mandatory technology workshops each year, coordinated and planned by the county Technology Coordinator. These workshops are delivered after school hours and present an opportunity for teachers to learn and explore the newest technology initiatives the district has taken. Pender County Schools recommends that each teacher receive thirty hours of technology staff development each renewal cycle. The district has also added a technology addendum to the Teacher Performance Appraisal Instrument (TPAI) to help teachers and administrators assess their level of competence and comfort with technology and technology integration. A system map is included as Appendix A.

### ***Project Purpose***

The purpose of the needs assessment is to align the Pender County Schools Technology Plan with the newly adopted “Future-Ready Students for the 21st Century” Strategic State Plan. The needs assessment will be included in the PCS Technology Plan. For this project the focus will be on goal number two of the State Strategic Plan and its five sub-goals listed below:

State Goal Number 2 - NC Public Schools will be led by 21st Century Professionals.

- Every teacher will have the skills to deliver 21st Century content in a 21st Century context with 21st Century tools and technology that guarantees student learning.
- Every teacher and administrator will use a 21st Century assessment system to inform instruction and measure 21st Century knowledge, skills, performance and dispositions.
- All teachers will utilize technology to assess student performance.
- All principals will utilize technology to assess teacher performance.
- Every education professional will receive preparation in the interconnectedness of the world with knowledge and skills, including language study.
- Every education professional will have 21st Century preparation and access to ongoing, high quality professional development aligned with State Board of Education priorities.
- Every educational professional uses data to inform decisions.

This goal was chosen since it most closely relates to the Technology Coordinators' responsibilities of designing, developing and implementing district professional development. The strategies identified for this goal also affect fund allocation from the EETT budget previously described.

Strategies will be aligned to the objectives listed under the goal and will outline optimal performance based needs identified by the district administrative unit, district instructional team, district technology leaders and school teams including administrators and teachers.

## Needs Assessment Process

### *Description of Needs Assessment Methodology*

The model used to conduct the needs assessment for this evaluation was based on the methodologies developed by Allison Rossett's Training Needs Assessment (1987). Using Rossett's model as a guide, data was gathered from various sources and stakeholders to produce a multi-faceted picture of the current state of the system, including actuals, optimals, feelings, and causes. This data served as a starting point for establishing recommendations, or solutions, to achieve optimal performance.

To gather the necessary data, the following techniques were used: extant data analysis (Stage One), interviews with administrative personnel in the district consisting of the Superintendent, Assistant Superintendent, Technology Director, and Technology Coordinator (Stage Two), subject matter analysis with district and regional technology coordinators (Stage Three), an informal interview with district-level members of the instructional team, an informal interview with principals, and a focus group session with school-based technology trainers (Stage Four), and a district-wide survey distributed online to all classroom teachers (Stage Five).

The following tables describe the context, purposes and stages of the data collection process and identify tools used in the data collection process:

| <b>Context</b>   |                           |                    |   |
|------------------|---------------------------|--------------------|---|
| <b>Resources</b> |                           | <b>Constraints</b> |   |
| <b>People</b>    | Superintendent            | <b>People</b>      | Teachers must be contacted/interviewed at their convenience (before/after school, planning periods) |
|                  | Assistant Superintendent  |                    |   |
|                  | Chief Information Officer |                    |   |
|                  | Instructional Team        |                    |   |
|                  | Technology Trainers       |                    |   |

|                        |   |   |
|------------------------|---|---|
|                        | Principals<br><br>Teachers<br><br>Regional Instructional<br>Technology Consultant   |   |
| <b>Financial</b>       | EETT Budget can be used to finance Professional Development initiatives   | <b>Financial</b><br><br>EETT Budget has decreased over the past 3 years and is not expected to exceed \$14,000 for the entire district. |
| <b>Equipment/Tools</b> | SurveyMonkey.com - used for online survey collection and analysis<br><br>SPSS - for data analysis                             | <b>Equipment/Tools</b>  |
| <b>Materials</b>       | Previous Technology Plan<br><br>State Documents<br><br>State Strategic Goals<br><br>School Technology Needs Assessment (STNA) | <b>Materials</b>  |

| <b>Purposes</b>    |   |  |
|--------------------|---|--|
| <b>Description</b> | <b>Status</b>   | <b>Sources</b>   |
| <b>Optimals</b>    | Needed more specific optimal to define intervention strategies.   | <ul style="list-style-type: none"> <li>• Superintendent Interview</li> <li>• Assistant Superintendent Interview</li> <li>• Technology Coordinator Interview</li> </ul>   |
| <b>Actuals</b>     | Determined actuals as related to district-defined optimal states. | <ul style="list-style-type: none"> <li>• Current Technology Plan Evaluation</li> <li>• Teacher survey</li> <li>• Instructional Technology Assistance Team (informal interviews)</li> <li>• Principal (informal interviews)</li> <li>•</li> </ul> |

|                  |   |   |
|------------------|---|---|
| <b>Feelings</b>  | Needed stakeholder attitudes/feelings regarding the use of tools to achieve desired outcomes.   | <ul style="list-style-type: none"> <li>• Teacher survey</li> <li>• Instructional Technology Assistance Team (informal interviews)</li> <li>• Principal (informal interviews)</li> </ul> |
| <b>Causes</b>    | <p>State strategic goals have changed making Technology Plan out of alignment – known.</p> <p>The current status of PCS teachers’ capacity to meet these state goals is unknown.</p> <p>Determine causes in:</p> <ul style="list-style-type: none"> <li>• Skills</li> <li>• Knowledge</li> <li>• Attitude</li> <li>• Access to Tools</li> </ul> | <ul style="list-style-type: none"> <li>• State Strategic Plan</li> <li>• Needs assessment</li> </ul>  |
| <b>Solutions</b> | <p>Guiding Questions for Solution Development:</p> <ul style="list-style-type: none"> <li>• How must Technology Plan Strategies change to align with new state goals?</li> <li>• How will professional development strategies meet the new strategies?</li> <li>• How will these initiatives be funded?</li> </ul>                              | <ul style="list-style-type: none"> <li>• Needs Assessment Results</li> <li>• State Strategic Plan</li> </ul>  |

| <b>Stage Planning</b> |                          |   |
|-----------------------|--------------------------|---|
| <b>Stage</b>          | <b>Stages/Techniques</b> | <b>Tools and Sources</b>  |
| <b>1</b>              | Extant Data Analysis     | State Board of Education Biennial Report<br><br>2006 District Profile<br><br>2005-2009 PCS Technology Plan (current plan)<br><br>Professional Development System (Previous Trainings) |



|   |                         |  |
|---|-------------------------|--|
| 2 | Needs Assessment        | Interview with Superintendent and Assistant Superintendent to better define district professional development optimal.   |
| 3 | Subject Matter Analysis | Instructional Technology Coordinator<br>Regional Instructional Technology Consultant<br>2008-2012 Technology Plan Template   |
| 4 | Needs Assessment        | District Administration Interviews (informal interviews with Principals and district Instructional Team)<br>Focus Group – Instructional Technology Assistance Team |
| 5 | Needs Assessment        | Teacher Survey   |

## ***Data Collection***

### **Stage 1 - Extant Data Analysis**

The State Board of Education Biennial Report, the 2006 District Profile, 2005-2009 PCS Technology Plan and a report from PCS's Professional Development were reviewed as part of the Extant Data Analysis. These documents assisted in problem identification and established a context for the next stage of collection – the initial interview with the Superintendent to develop a list of optimal performance outcomes.

These documents were chosen because they directly relate to:

- The North Carolina State Board of Education vision for district strategic planning (State Board of Education Biennial Report);
- District data to establish a description of the system, administration, schools and students including student and teacher population data, access to technology, and use of funds (2006 District Profile); (Note: Data from an informal interview with the Instructional Technology Coordinator was also used to establish this data.)
- PCS's current goals and how they relate to the new State objectives (2005-2009 PCS Technology Plan);
- Professional development that has been offered to teachers in the past two years in order to determine actual progress toward new objectives (Professional Development System).

Analysis of the State Board of Education's Biennial Report provided a context for the new strategic plan and identified a list of goals to which the Technology Plan would be aligned.

Through a process of identifying system components and their relation to professional development, extant data analysis was performed by outlining the system (State → District → Technology Department → Instructional Technology Department) and their purposes. The guiding mission, or goals, of each system was determined along with the relationship of these goals to professional development. A list of optimal was developed based on the State Board of Education's "Future-Ready Students for the 21<sup>st</sup> Century" strategic plan.

While these documents provided a snapshot of the district for developing the needs assessment plan, more specific optimal performance states needed to be identified. For this, input from the Superintendent, Assistant Superintendent for Curriculum and Instruction and the Instructional Technology Coordinator interviews were collected and analyzed.

## **Stage 2 - Interview with Superintendent**

The purpose of the interview was to gather the feelings and actuals from the Superintendent and Assistant Superintendent for curriculum and instruction. She was chosen because she is directly responsible for implementing the changes to PCS as directed by the State goals. Initially the interviews were conducted in a face-to-face setting but were later continued through email correspondence. Open-ended questions were used and an informal interview ensued. (Appendix B)

The goal of this interview was to determine a focus for the Instructional Technology department regarding Goal Two of the State Board strategic plan. The Superintendent and Assistant Superintendent both identified collaboration and “learning communities” as a primary issue in PCS. The Superintendent stated, “Teachers do not know how to collaborate in professional learning communities.” Professional learning communities is a term used in education to describe a collegial group of administrators and school staff who work and learn collaboratively, visit and review other classrooms, and participate in decision making. As an organizational arrangement, the professional learning community is seen as a powerful staff-development approach and a potent strategy for school change and improvement (Hord, 1997). The Superintendent addressed this as her primary area of concern for the district.

She continued to explain that the optimal performance within the domain of professional development would be to increase the use of technology for the purpose of establishing learning communities. Her input and the data collected in the next phase of the project helped the team establish a list of optimals aligned to the broad objectives identified by the State in their strategic plan.

## **Stage 3 - Subject Matter Analysis with Tech Coordinators**

The purpose of the Subject Matter Analysis was to utilize the information gathered through extant data analysis and the general goals identified in the Superintendent interview to formulate a much clearer set of optimal performance levels within PCS.

The Instructional Technology Coordinator, along with members of the project team, consulted the Regional Instructional Technology Consultant (RITC) from the North Carolina Department of Public Instruction (NCDPI). Using suggestions listed in the latest Technology Plan template they identified a list of tools and possible strategies that relate to collaboration and communication using the State Strategic Goals as a guiding framework.

The RITC was able to identify strategies that other systems were using in collaborative projects and pointed to suggestions listed in the new Technology Plan template as a resource for identifying system optimals. The template suggested strategies regarding the assessment of

teacher skills, the use of web-based resources, personnel to implement training initiatives and support teachers, training in assessment techniques, and global awareness. Her input provided a context for the Technology Coordinators to develop a specific list of optimals to measure in further steps of the needs assessment process.

The Technology Coordinators met to establish a list of optimals aligned to the goals and objectives set forth in the State Strategic Plan, the interview with the Superintendent, and the information provided by NCDPI in the Technology Plan template along with suggestions taken from the discussion with the RITC. The following list of optimals was generated, categorized by the objective they address:

State Goal 2: NC Public Schools will be led by 21<sup>st</sup> Century Professionals (State Goal 2).

- State Objective 1: Every teacher will have the skills to deliver 21st Century content in a 21st Century context with 21st Century tools and technology that guarantees student learning.
  - District Optimals:
    - All teachers will utilize relevant technology tools to deliver lessons that exemplify curricular integration.
    - All teachers will collaborate with colleagues district-wide in learning communities using communicative and collaborative tools.
    - All teachers will plan lessons that include the use of communicative and collaborative tools.
- State Objective 2: Every teacher and administrator will use a 21st Century assessment system to inform instruction and measure 2<sup>1st</sup> Century knowledge, skills, performance and dispositions.
  - District Optimals:
    - All teachers will utilize technology to assess student performance.
    - All principals will utilize technology to assess teacher performance.
    - Teachers and administrators will utilize the Pender County Schools Teacher Performance Appraisal Instrument Technology Addendum in order to assess teacher technology competency.
- State Objective 3: Every education professional will receive preparation in the interconnectedness of the world with knowledge and skills, including language study.
  - District Optimals:
    - All teachers will use technology to communicate with colleagues and professionals at the district, state, national and global level.
    - All teachers will use technology to participate in professional learning communities to facilitate active collaboration.
- State Objective 4: Every education professional will have 21st Century preparation and access to ongoing, high quality professional development aligned with State Board of Education priorities.
  - District Optimals:
    - All "21st Century" professional development programs will include the use of relevant, appropriate and innovative technologies.

- All technology professional development will be integrated into core (Language Arts, Math, Science, Social Studies) content areas in order to establish effective instructional strategies for teachers in their classrooms.
  - State Objective 5: Every educational professional uses data to inform decisions.
    - District Optimal:
      - All teachers will utilize NCWise data reporting tools to analyze data and make instructional decisions in their schools and classrooms.

The establishment of these optimals was critical in progressing to the final stages of our needs assessment, the design of a formal focus group agenda and survey that would be sent to all teachers (approximately 550).

## **Stage 4 – Focus Groups and Interviews**

### **Focus Group with Instructional Technology Assistance Team (ITAT)**

The Instructional Technology Assistance Team is a group of representatives from each school who are viewed as the technology leaders in their schools and serve as trainers when district initiatives are implemented. In the past, they have been utilized for training initiatives such as web page training, productivity tools (i.e. Microsoft Office suite, email), and educational software. In many cases, these trainings are designed and developed centrally and passed to the ITAT for delivery. They have, in recent years, been given the opportunity to design training based on the identified needs of their individual schools. For this project, they are identified as technology leaders with a critical insight into actual technology professional development and use at the school level.

The purpose of the focus group was to collect data on the actual situation concerning State Goal Number Two in PCS. The technology support personnel were chosen because they are positioned to observe teachers' use of technology in their respective schools. All technology support personnel were invited to join the focus group. An agenda (Appendix C) consisting of sixteen open-ended questions focused on the optimals statement generated by the State goal of “NC Public Schools will be led by 21<sup>st</sup> Century Professionals” was distributed through email prior to the focus group meeting. Due to travel and time constraints, a VoIP (Voice over Internet Protocol) conference was used to facilitate the meeting and record the proceedings.

Six technology support members from different schools (elementary, middle and high school) attended the meeting and four responded via email. Following the focus group, the data was analyzed to determine the actual use of technology for professional development and collaboration. (Appendix D)

### **Informal Interviews – Principals and Instructional Leaders (Curriculum Directors)**

Because the input of district and school-based leaders is critical to the process of strategic planning, their input must be taken into account. Principals are viewed as the instructional leader in their school and curriculum directors design and develop professional development initiatives

district-wide. Since the task of getting these two groups in the same place at the same time is nearly impossible, a series of informal interviews was conducted.

A series of open-ended questions were asked (Appendix E), developed by analyzing the optimal and the function of the administrators and responses were noted in an informal format. These interviews were conducted over a two-week period and yielded results that were combined with the rest of the data analysis.

## **Stage 5 - Teacher Survey**

The Teachers are identified as one of the key stakeholders in the domain of professional development, so their input regarding their needs is, according to system leaders, absolutely critical. They are the stakeholder who will be most affected by the interventions that this project determines to be appropriate.

The Teacher Survey consisted of 29 questions related to collaborative efforts and the use of technology within individual schools, the school system and within the profession. The survey also consisted of a list of technology tools, requiring teachers to identify the availability, their skill level, frequency of use and their desire for instruction in their use. The aim was to establish quantitative data about the current use and feelings towards technology use with a focus on collaboration. The survey questions were created and entered into an online survey tool (Survey Monkey). All PCS teachers were invited to take the survey. (Appendix F)

Data obtained was analyzed through both Survey Monkey's tools and frequency tables in SPSS. Measures of central tendency determined generalized statistics, while grouping data according to optimal state provided a clear picture of the current, or actual, performance state. Cross tabulation was used to determine if a relationship existed between using technology for collaboration and the availability or skill level for the technology identified (NCWise, teacher's web pages, email, wiki, blog and instant messaging). (Appendix G)

## ***Data Analysis and Findings***

### **All teachers will utilize relevant technology tools to deliver lessons that exemplify curricular integration.**

Focus Group: The focus group identified the level of use in delivery ranging from "disappointing" to "all." The comments seemed to suggest that, while teachers are using technology for lesson delivery, it is limited to what is available and what they know how to do. The primary tool that was discussed was Microsoft PowerPoint. One participant noted, "Almost all of our teachers use technology at some point to develop and supplement lessons. They often begin with a lesson in the classroom then continue in the computer lab or through the use of wireless laptops," while another (from a different school) stated, "No one uses lab computers. Well, just a few use it. They aren't made to use it and aren't integrating it." The key issue that arose was the integration of tools into real-world, content-focused context. Most agreed that this was not occurring, largely due to a lack of skills, but also one of motivation.

Informal Interviews: Principals generally consider this to be happening, although they too focused on the use of Microsoft Office tools such as PowerPoint. One principal cited a lack of funding for equipment as a primary barrier to curricular integration. Members of the instructional team considered integration of technology and other content areas to be a primary concern.

Teacher Survey: Data collected from the teacher survey suggested that, while the use of hardware with Microsoft Office tools (PowerPoint) seemed to have the highest level of use at 84%, tools for student collaboration (identified as blogs and wikis) were used by 5% of teachers.

**All teachers will collaborate with colleagues district-wide in learning communities using communicative and collaborative tools.**

Focus Group: Participants all agreed that this type of professional development is not occurring at the district-level. They felt that teachers “don’t see the need or are not aware of opportunities to communicate” and collaborate. Networks and hardware are handicapped by district. There is no district supported forum or chat tool [available].” The overall sentiment from participants on this optimal is that the district is not supporting, nor encouraging the use of these tools. In many cases, participants suggested, this type of technology is blocked by network administrators to discourage use.

Informal Interviews: Principals believe that the district has yet to initiate a professional learning communities program, but agree that the use of technology may help the process. Members of the instructional team who were interviewed recalled an initiative from the past, but realize that it has failed since only small pockets of teachers still utilize the process. One director identified “online tools” as being able to facilitate this process, but also echoed the concerns of the focus group stating that many collaborative technologies were administratively blocked for teachers.

Survey Data: While 64% of the teachers report using email for professional collaboration, less than 10% use web-based tools such as instant messaging, blogs or wikis to collaborate district-wide. 16% of teachers identify that they have begun to use NCWise data to collaborate professionally in making curricular decisions.

**All teachers will plan lessons that include the use of communicative and collaborative tools.**

Focus Group: Participants stated that, while small pockets of innovators exist, this type of technology is largely going unnoticed by teachers and widespread use is not evident. They point to training and a perceived lack of time to learn as the key issues surrounding non-use. One participant summarized the thoughts of the group by stating, “During class, they don’t have time to learn new techniques and implement. They are reluctant to do it when they don’t understand it.”

Informal Interviews: Principals cite the use of the computer lab as a resource that their teachers use for student collaboration, but are, in general, unaware of what tools are actually used to promote these processes. District directors realize that no professional development has been implemented that includes the use of these tools.

Survey Data: Teachers (49%) report the use of the computer lab as a resource for student collaboration, Microsoft PowerPoint being the most popular tool. Less than 10% of the teachers report using web-based tools such as wikis or blogs to encourage student collaboration in lessons.

**All teachers will utilize technology to assess student performance.**

Focus Group: It seems, from participant reactions, that this is an area of concern. The primary assessment activities that teachers are assigning using technology is in the use of Microsoft Office (MS Word for typing, MS Publisher for brochures or MS PowerPoint for class presentations), but don't have the knowledge to utilize "new" tools. Handheld devices, in some schools, were identified as a means of assessment, but deemed "so time consuming that teachers are reluctant to spend time [on creating assessments]."

Interviews: The Instructional Team identifies this as an area of concern, stating that "more creative methods are needed in the toolbox of teachers to assess the performance of their students." One member of the instructional team said, "Teachers need training in the collection and analysis of student data. Currently, the centralized method we use is a mess." Principals express concern that performance-based assessments, although an excellent method, do not necessarily align with the current North Carolina standardized tests, which are objective measurements.

Survey Data: Teachers report that the use of educational software (42%) and PowerPoint (31%) are ways that they assess students. 11% of teachers utilize NCWise assessment data to help them in assessing the knowledge of their students.

**All principals will utilize technology to assess teacher performance.**

Focus Group: All agreed that this is not happening, although one participant suggested that some principals are using handhelds to assess teachers, but "no other technology expedites the process." Assessment of teachers is still largely a paper-based process.

Informal Interviews: Interviews with principals and instructional leaders revealed that a system was investigated last year to establish an online method of teacher assessment, but it was deemed too costly to justify its purchase and implementation.

**Teachers and administrators will utilize the Pender County Schools Teacher Performance Appraisal Instrument Technology (TPAI) Addendum in order to assess teacher technology competency.**

Focus Group: No information was collected regarding this goal, as it is a procedure in PCS. One participant did assert that it was "funny" that the TPAI Addendum was paper-based when its purpose is to measure and promote teacher technology skills.

Informal Interviews: District leaders (Instructional Team) and principals identified that, while the TPAI-Addendum is a "step in the right direction," the self-assessing nature of it and lack of

accountability for improvement did not provide them with a necessary way to hold teachers accountable for their use of technology in instruction.

**All teachers will use technology to communicate with colleagues and professionals at the district, state, national and global level.**

Focus Group: Participants reported that communication and collaboration happens at the school level and only on a limited basis outside of that. Some interactive field trips and a language learning courses were provided as examples of using technology to communicate with groups outside of school.

Informal Interviews: Principals and district leaders related that teacher attendance at conferences and their communication through email provided them a larger community of professionals with whom to communicate. District directors also added that the emergence of online learning has enabled some teachers (but not many) to communicate with other professionals in the field.

Survey Data: 64% of teachers report the use of email to communicate on a scale larger than their school. Although online learning and web-based tools were identified as a strategies to widen the scope of professional collaboration, teachers did not identify these as methods they use (less than 12% claiming to use any strategy other than email or teacher web pages).

**All teachers will use technology to participate in professional learning communities to facilitate active collaboration.**

Focus Group: The group suggested that teachers use technology to connect with other professionals in the field, but not widespread because of no incentive or reason. Participation, as one group member stated is “mostly passive collaboration (reading blogs – not making comments or having own blog).”

Informal Interviews: Comments regarding this optimal are included in other sections of this analysis.

Survey Data: Teachers are primarily communicating with email, 64% saying this is their primary mode of communicating and collaborating.

**All "21st Century" professional development programs will include the use of relevant, appropriate and innovative technologies.**

Focus Group: Focus group participants asserted that no “real” staff development in “Web 2.0 [technologies] and blogging were occurring. “Teachers don’t understand how they can use it.” Another participant suggested that, “you need to have the technology in the schools to be able to have staff development for it.”

Informal Interviews: District leaders and principals agree that the professional development program must change to be relevant to the new standards, especially since the technology



professional development requirement has been eliminated. They offered no suggestions for changing it.

Survey Data: Teachers showed interest in training on a variety of applications, most notably interactive whiteboards (71%), classroom response systems (61%), handheld computers (53%) and document cameras (45%). The highest request dealt with hardware, software seeming to follow behind. The assumption that can be made is that teacher knowledge of web-based and other software may be limited, although no choice was determined as completely inappropriate. All choices, except email, were evaluated positively by 20% or more of the teachers. This data suggests that there is an interest in these tools, although many are not aware of possible benefits.

**All technology professional development will be integrated into core (Language Arts, Math, Science, Social Studies) content areas in order to establish effective instructional strategies for teachers in their classrooms.**

Focus Group: No data was collected regarding this optimal, although one participant did suggest that the recent district elimination of the technology was “causing a severe drop in attendance to his workshops because they weren’t being made to come.”

Informal Interviews: In discussions with district and school-based administrators, all identified a need for technology to be integrated into the content-area professional development. One participant stated, “If teachers can’t see how it applies to them in their classroom, it will not be used.” Another commented, “District-level administration must partner alongside these teachers and provide ongoing support if this is to happen.”

Survey Data: No data was collected regarding this optimal.

**All teachers will utilize NCWise data reporting tools to analyze data and make instructional decisions in their schools and classrooms.**

Focus Group: One trend that was identified was that, in general, the teachers do not trust the NCWise data collection and analysis tool and are expressing concern over its use in the instructional decision-making process. They did, however, assert that they “would probably use it more once they learn how to do it,” although they did not necessarily see how it would drive instruction.

Informal Interviews: District and school-based administrators are “anxiously waiting” to see what they will be able to do regarding instructional decision-making, but all agree that having the data “at their fingertips cannot be bad.”

Survey Data: 44% of teachers report that NCWise, a new system to PCS, is a tool that they are already using to make instructional decisions. 45%, however would like additional training on using the tool for this and other purposes such as collaboration and student assessment analysis.

# Recommendations

## *Interpretation of the Findings*

After analyzing data and conducting a gap analysis (Appendix H), it appears that PCS, in aligning with the State Board of Education's strategic plan must address some issues in the areas of teacher awareness, skills and access to a number of tools. Specific recommendations have been developed to address each issue, as goals guiding the development of district strategies aligning the PCS Technology Plan to the State Strategic Plan and addressing district needs.

Findings revealed that school-based resources such as computer labs are not being used at optimal levels. No causes of this problem have been found and a recommendation has been generated to study the causes of this trend. Other problem areas include the appropriateness of workshops for teachers, based on prerequisite skills, the current NCWise implementation and continued support, and the perceived level of access teachers have to web-based collaboration and communication tools. In some cases, this is an awareness issue, in others, an issue of network management. Other key areas that were identified are in administrator and teacher skills and knowledge about tools and practices in using technology for assessment and vision of a "21<sup>st</sup> Century" learning environment. The final area of concern is teacher access to and awareness of each other and other professionals.

## *Prioritized List of Recommendations*

Addressing current resource problems and projects determined the order of prioritization. Top priorities must include the successful implementation of NCWise, the problem with computer lab use, and the identification of prerequisite skills for all technology professional development. Addressing issues of awareness of access to tools is critical, while identifying a collaboration and communication software solution will facilitate awareness and use of these tools.

Professional development initiatives are listed as the mid-level priorities, but will be gradually addressed as the initial projects progress. Changing the way that professional development is delivered will take time to design and develop before the solution is actually implemented.

Lower priorities such as awareness beyond the district are a goal to be reached by teachers who are confident enough in their skills to actually participate in these communities. Both interventions could be initiated at any time, however, and are not necessarily confined to the final spot in implementation. These are activities that will not require as much change management as the higher priority recommendations.

## *Recommendations*

Recommendations have been generated and prioritized based on the order in which they should begin implementation. There are design, development and evaluation projects listed and all will require support for utilization and management skills to coordinate each project. They are listed below and the optimal to which they refer is identified in parenthesis ().

### *1. School-based Computer Lab Evaluation*

Implement an evaluation project to analyze district computer lab usage to determine causes, solutions or recommendations for the future of school-based labs. (1.1)

### *2. Skill-based Technology Professional Development*

Design technology professional development courses with identified prerequisite skills to attract learners with the skills to implement the techniques – i.e. Using PowerPoint as a prerequisite to workshops such as Instructional Web Pages or Creating Content-based Digital Videos in the Classroom. (1.1)

### *3. Continue and Expand NCWise Implementation*

Continue with NCWise Implementation and support its use. Design a professional development program that emphasizes its use for analysis and decision-making based on student data in collaborative school and district-based teams.

### *4. District Collaboration and Communication Software Suite*

Research, approve and install a suite of collaboration and communication applications (wiki, blog, instant messaging, online whiteboard application, and discussion board) to facilitate both teacher collaboration and classroom use. This software suite should be used in three ways to encourage use – learning communities, online professional development activities, roll-out to early adopters. Research will include a network feasibility, security and risk evaluation for each identified tool. (1.3)

### *5. Administrative Professional Development*

Provide more administrative professional development (using identified “21<sup>st</sup> Century” professional development standards) and schedule it in frequent and regular increments (possibly monthly meetings or online). Assess principal needs and design a curriculum on a yearly basis for this group of learners. Encourage and provide support for their adoption. Design courses based on reflection, new tools/skills, and “best practices” delivered by experienced colleagues from inside and outside of the district. (2.2)

### *6. “21<sup>st</sup> Century” Professional Development*

Design “21<sup>st</sup> Century” professional development curriculum. Begin with listing characteristics of a course. Develop two model courses and use as models of “21<sup>st</sup> Century Learning Environments.” Continue to develop and utilize teachers to develop more professional development in this manner by identifying a number that will be developed per year over a 5-year period. Develop an approval process for out-of-district courses by designing standards. (2.1), (4.1), (4.2)

### *7. Expanded Use of Moodle (or other Learning Management System)*

Train Instructional Team to use Moodle and deliver online courses and develop online learning communities as extensions of face-to-face professional development. Expand this training to teachers to use in their classrooms - starting with innovators and early adopters. (1.2), (3.2)

### *8. Annual District “Technology Conference”*

Design and launch a district “Technology Conference” to promote learning and sharing of ideas. Teachers would receive Continuing Education Credits (CEU’s) for attending conference, “21<sup>st</sup> Century” CEU’s (see strategy below) for presenting a technique or teaching a skill. (1.2)

### *9. Promotion of Global Professional Communities*

Promote teacher activity in professional organizations, online professional development, professional conferences and other activities in which they will be introduced to new tools. Launch a campaign to make them aware of these activities. (2.3)

## References

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